Nsight
Accelerating Digital Transformation

SAP Gold Partner

EBOOK

# SAP S/4HANA Conversion: A Key to Business Efficiency

# 1. Understanding the SAP S/4HANA Architecture

SAP S/4HANA is a suite of integrated business solutions built to run on the powerful SAP HANA database. This system is designed to connect multiple components that work together to improve performance and streamline operations:

- **SAP BW (Business Warehouse) –** Organizes and stores your business data for easy access.
- **SAP Front End Server –** Provides user-friendly access to the system.
- **SAP S/4HANA Server –** Powers core business processes with real-time data processing.

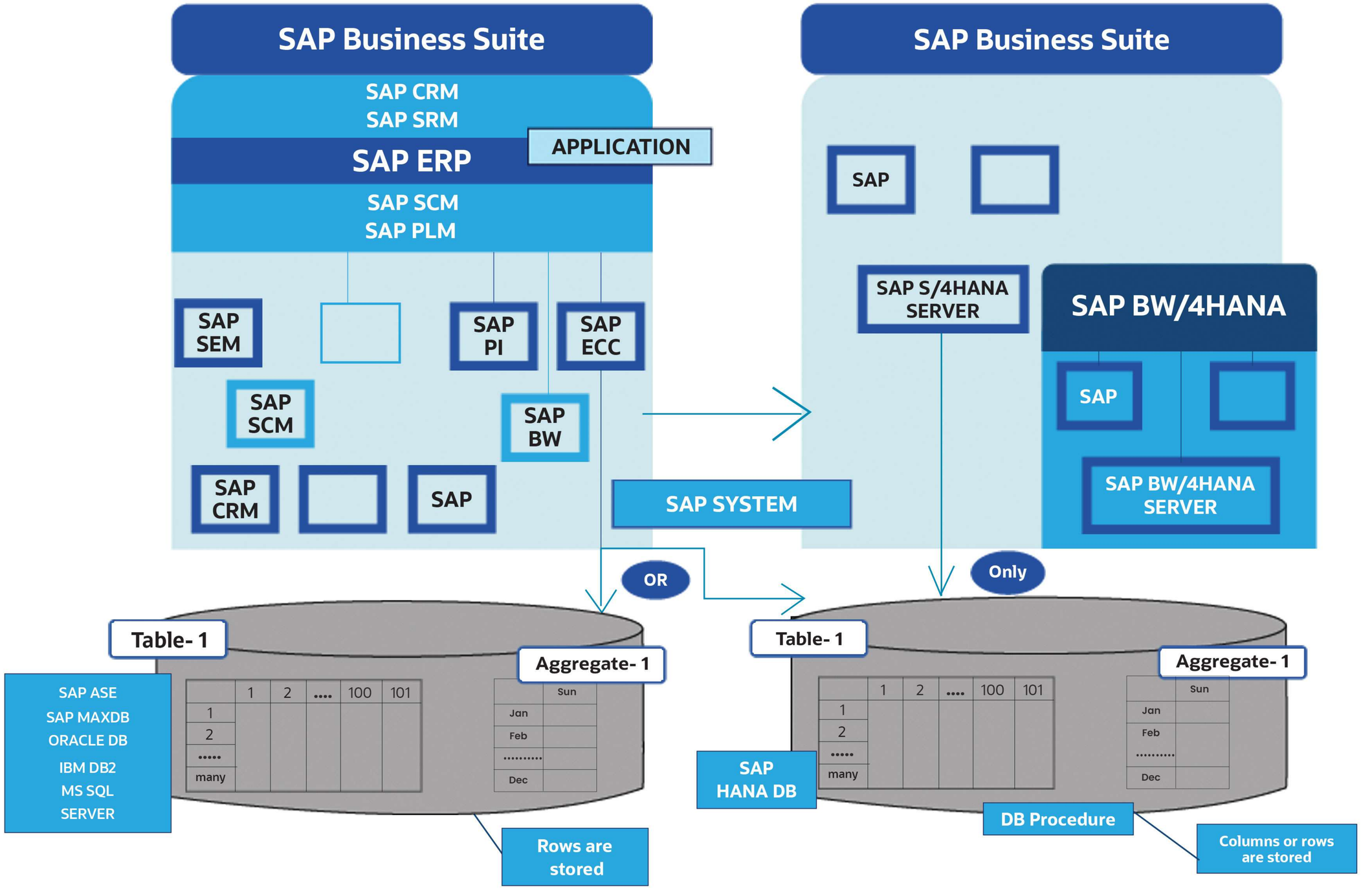
## Components of the SAP Business Suite:

- **SAP ERP (Enterprise Resource Planning):** A unified solution to manage finance, operations, and human resources across your organization.
- **SAP CRM (Customer Relationship Management):** Manages customer interactions, boosting sales and marketing efforts.
- **SAP SCM (Supply Chain Management):** Optimizes supply chain operations, improving overall efficiency.
- **SAP SRM (Supplier Relationship Management):** Streamlines procurement and supplier relationships.
- **SAP PLM (Product Lifecycle Management):** Manages the entire lifecycle of your products from conception to delivery.

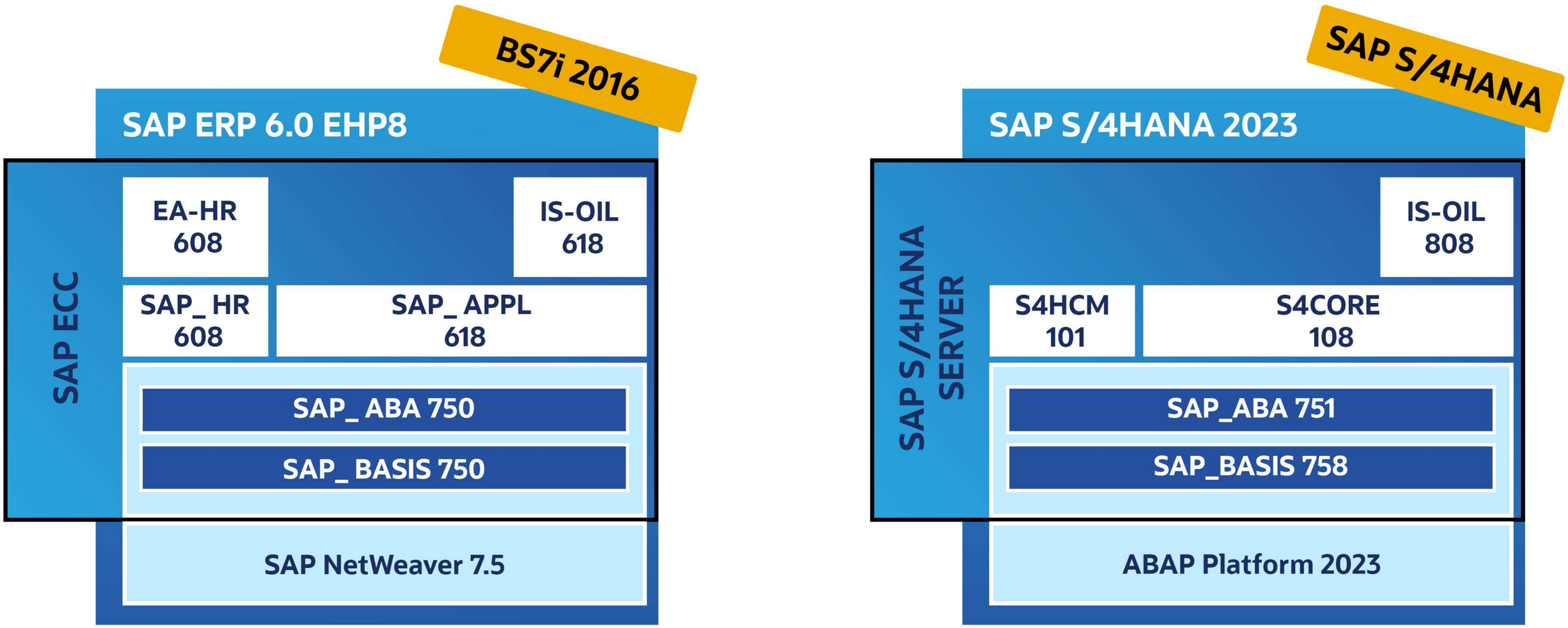
**Flexible Implementation with SAP:** SAP S/4HANA allows businesses to upgrade and implement specific components as needed. Instead of overhauling the entire ERP system, you can focus on upgrading parts of your existing setup, such as SAP ECC (ERP Central Component) or SAP BW, without disrupting day-to-day operations.

Formerly known as **SAP R/3, SAP ECC** serves as the foundation for traditional SAP environments, with its evolution into **SAP S/4HANA** offering increased speed and capability.

# The architecture of an SAP system



# The release of the software components of the newest SAP ECC system and SAP S/4HANA




The software components lists is not complete

# Key Components of SAP S/4HANA and ABAP Foundation 2023

## 1. SAP S/4HANA Server 2023 Overview

The **SAP S/4HANA Server 2023** is an integral part of the broader **SAP S/4HANA 2023** suite, delivering powerful capabilities for business process management. As a core component, it allows organizations to manage essential functions like finance, logistics, and operations with enhanced efficiency, all powered by the **SAP HANA database.**

This version provides businesses with real-time data processing and advanced analytics, which improves decision-making and ensures smoother operations across the enterprise.

## 2. ABAP Foundation 2023: SAP_ABA 751 & SAP_BASIS 758

The **ABAP Foundation 2023** includes key components such as **SAP_ABA 751** and **SAP_BASIS 758.** These are foundational for building and maintaining ABAP-based applications within the SAP ecosystem.

- **SAP_ABA 751:** Essential for ensuring smooth communication and integration within the SAP system, particularly for managing the ABAP runtime environment.
- **SAP_BASIS 758:** Provides the technical infrastructure and support for the entire SAP landscape, enabling seamless operation of SAP applications.

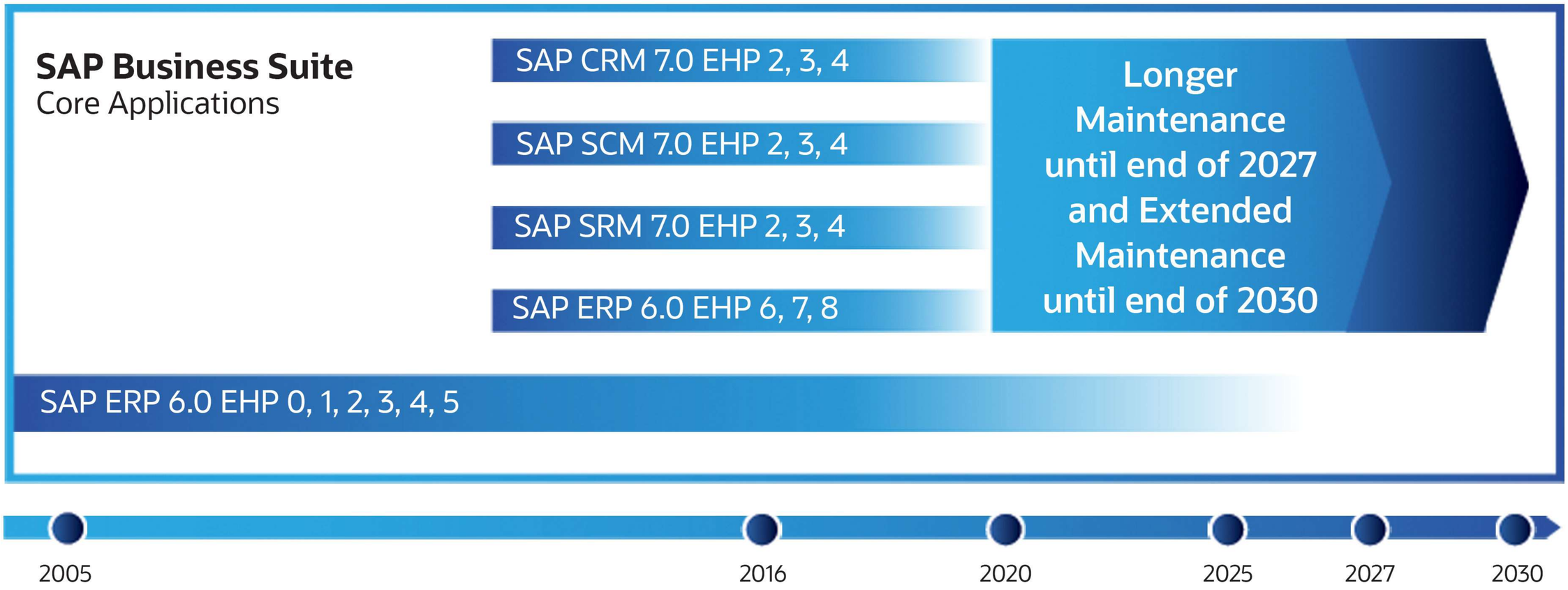
Together, these components form the backbone of the SAP system, ensuring stable and efficient application performance across SAP S/4HANA 2023.

# Upgrade Project Complexity Drivers

To support long-term business planning and align with SAP's Innovation Strategy and Roadmap, the standard maintenance period for SAP Business Suite core applications has been extended.

Mainstream maintenance is now available until December 2027, with an option for extended maintenance through December 2030.

This extension ensures businesses can continue to rely on SAP's core applications while adopting new innovations, offering stability and flexibility for future growth.




1648480- Maintenance for SAP Business Suite 7 Software including SAP NetWeaver

Check for restrictions and details

# SAP S/4HANA Conversion Process: A Comprehensive Guide

The SAP S/4HANA conversion process offers three key transition scenarios for existing SAP customers:

**1. New SAP S/4HANA System Implementation:** Implementing a fresh SAP S/4HANA server with an initial data load.

**2. System Conversion:** Performing a 1:1 conversion from the existing SAP ECC system to SAP S/4HANA.

**3. Consolidation & Selective Data Migration:** Merging regional SAP Business Suite systems into one global SAP S/4HANA system or migrating selected data.

The **System Conversion** scenario is the most common, and involves three critical phases:

## 1. Pre-Migration Phase

This phase prepares the SAP ECC system for migration to S/4HANA. Essential tasks include:

- **Applying SAP Notes and necessary updates.**
- **Setting up Customer Vendor Integration (CVI).**
- **Running upgrade checks and reports to assess system readiness for migration.**

## 2. Technical Migration Phase

This phase focuses on the actual conversion process, where BASIS consultants and ABAP developers manage:

- **Data migration to SAP S/4HANA.**
- **Adjustments to the system for compatibility with S/4HANA.**
- **System optimizations to ensure smooth functionality in the new environment.**

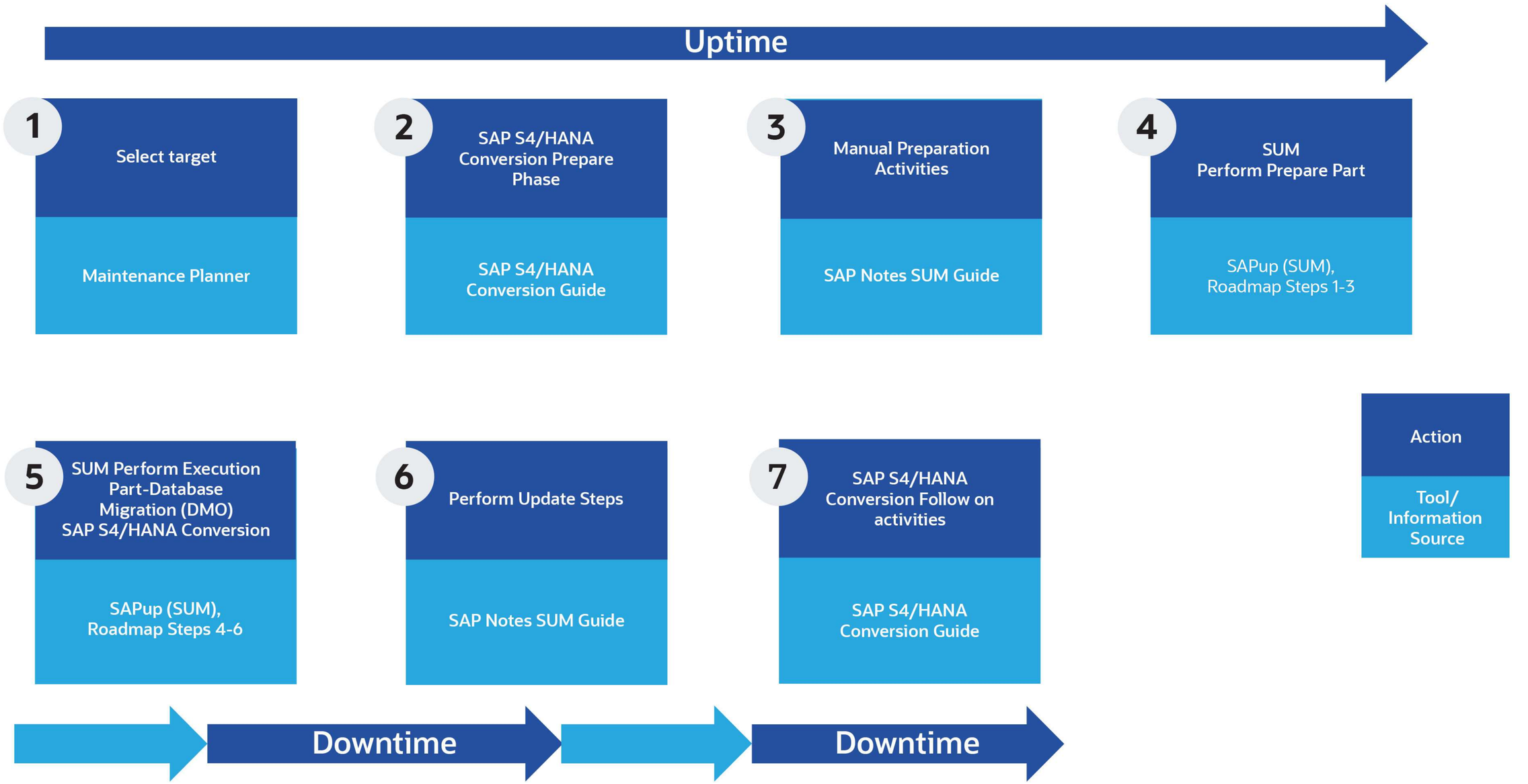
## 3. Post-Migration Phase

After conversion, this phase ensures that the system is fully operational in the new environment:

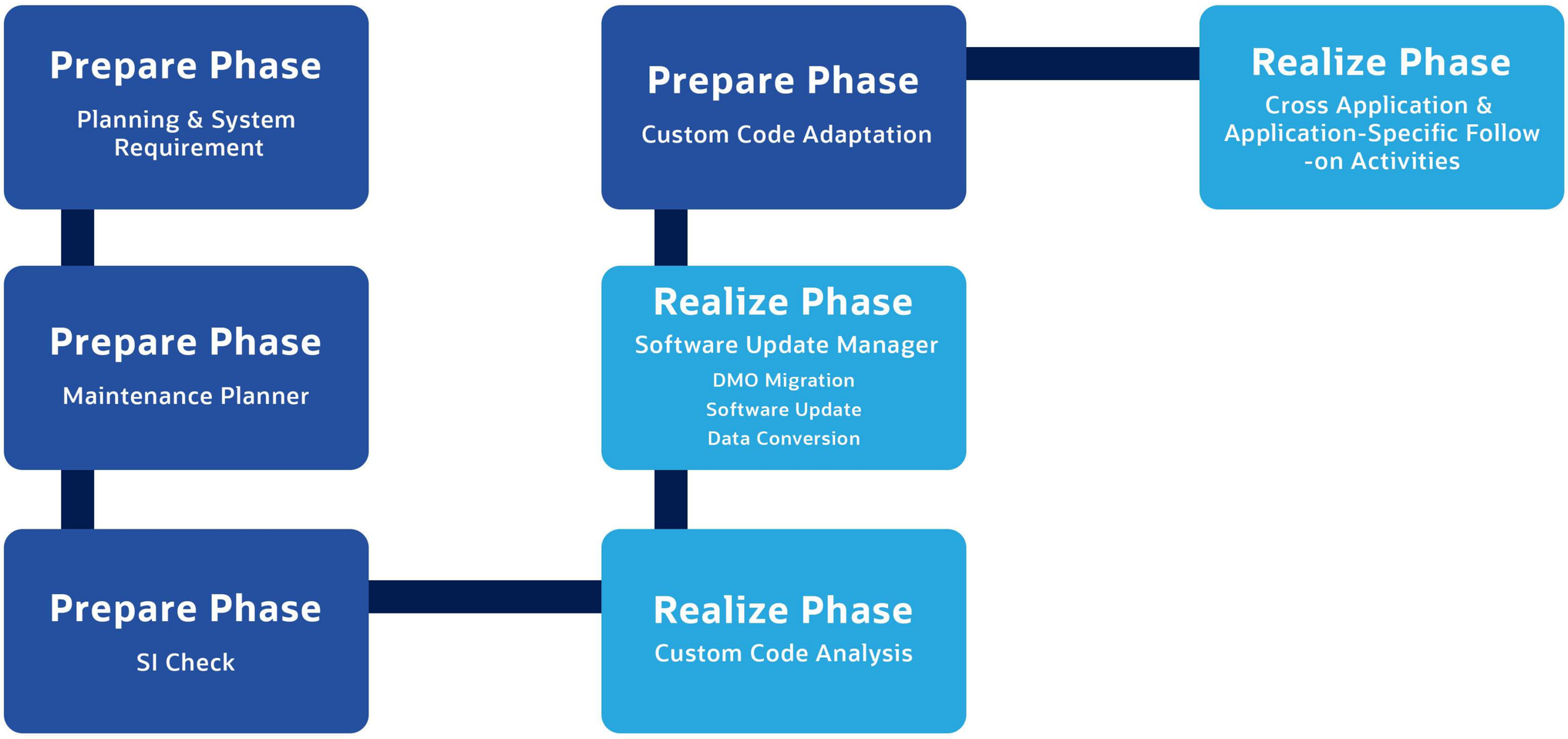
- **Verifying core configurations and functionalities.**
- **Migrating critical data such as credit management and master data.**
- **Fine-tuning the system to match business requirements.**

The **SAP Readiness Check** tool plays a crucial role throughout this process by assessing ECC system compatibility with S/4HANA, identifying prerequisites, and ensuring a seamless transition.

# Actions for Conversion



## Process Step for System Conversion




## Using the Software Update Manager (SUM) Toolbox

The SAP Software Update Manager (SUM) Toolbox is an ABAP-based transaction that centralizes essential tools and reports, simplifying system updates, upgrades, and migrations. Previously scattered across individual SAP Notes, these tools are now available through transaction code STBX, offering a unified access point for downtime-optimized tasks.

## Key Features of SAP SUM

**1. System Updates and Upgrades**
SUM enables seamless updates and upgrades to the latest software releases, ensuring systems remain up-to-date with new features and security patches.

**2. Database Migration Option (DMO)**
This feature allows for efficient migration from non-HANA databases to SAP HANA, a critical step in modernizing your SAP infrastructure.

**3. Zero Downtime Option (ZDO)**
For high-availability systems, ZDO ensures minimal disruption during updates, making it ideal for environments where continuous availability is essential.

**4. Enhanced User Interface**
The latest versions of SUM include an improved, user-friendly interface with guided procedures, streamlining the update process and making it more intuitive.

**5. Pre-Checks and Custom Code Checks**
SUM conducts pre-checks to verify system compatibility and provides tools for analyzing and adjusting custom code, ensuring a smooth and seamless update experience.

### Application Conversion Assistant (ATACA)

**ATACA** is a tool designed to streamline SAP application migrations, particularly for **SAP S/4HANA** transitions. It automates key aspects of the conversion process, such as:

- **Readiness checks to assess system compatibility with S/4HANA.**
- **Guided workflows for efficient planning and execution.**
- **Recommendations for custom code adjustments to ensure compatibility.**
- **Optimization suggestions to enhance system performance.**
- **Detailed reports to track conversion progress.**

When integrated with tools like **SUM** and **SAP Transformation Navigator,** ATACA reduces risks, accelerates the migration process, and ensures a successful transition to SAP's modern system environment.

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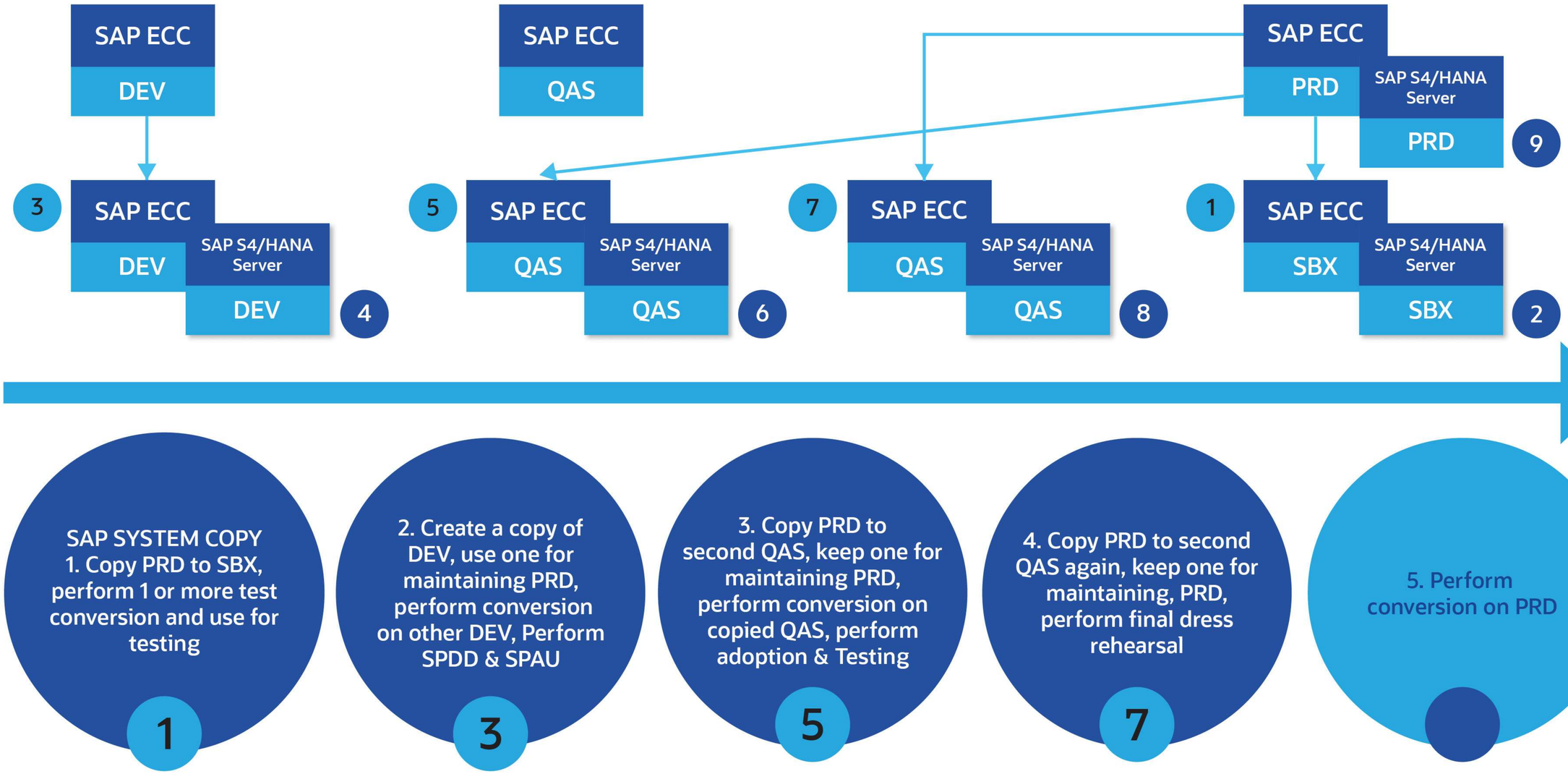
# Convert 3-System Landscape

## Process Step for System Conversion



## Conversion Cycle

### Cycle - 1

**PRD to "SANDBOX"**

**Purpose:**

- Upgrade and test migration steps from production
- Create cookbook
- Execute multiple iterations to refine the process

Check business process requirements for execution.

Analyze ABRAP code before migration

### Cycle - 2

**DEV Conversion**

**Purpose:**

- Establish SAP DEV environment
- Refine cookbook

Upgrade and conversion steps differ from production.

Perform mandatory code adaptations and post-conversion steps for business process alignment.

### Cycle - 3

**QA Conversion**

**Purpose:**

- Establish SAP HANA QA environment
- Enhance cookbook
- Testing environment:
  - Integration
  - Functional regression
  - Operational readiness
  - UAT
- Business function testing of new/adapted processes

### Cycle - 4

**PRD to "SANDBOX"**

**Purpose:**

- Mock cutover
- Final dress rehearsal
- Validate end-to-end business downtime
- Finalize cookbook and cutover plan

**Testing Environment:**

- Infrastructure testing
- Post-cutover performance testing

### Cycle - 5

**PRD Conversion**

**Purpose:**

- Establish new PRD environment
- Utilize downtime-minimized approach

Plan code optimization projects

## Lessons Learned: Project Management

**1. Early Sandbox Experience:** Hands-on experience in the sandbox system helps identify potential issues early in the process.

**2. Technical Conversion Procedure:** Execute each technical step of the conversion process carefully to avoid errors during migration.

**3. Modification Adjustments:** Address system modifications early and adjust them as needed to align with the new system environment.

**4. Customer Development Testing:** Test all customer-specific developments to ensure compatibility with SAP S/4HANA.

**5. Customization:** Ensure the system is customized according to your business needs for optimal performance.

**6. Process Functionality Check:** Thoroughly test all processes to confirm they function correctly in the new environment.

**7. Core Business Processes Testing:** Focus on testing core business processes to ensure that critical operations remain uninterrupted.

**8. Dual Maintenance Period Reduction:** Minimize the period when both legacy and new systems need to be maintained to reduce overhead.

**9. Additional Sandbox Effort:** Perform additional sandbox activities before converting the system to better prepare for the transition.

**10. Conversion Timing:** Shorten the time window between the conversion of the Development (DEV) and Production (PRD) systems for faster deployment.

**11. Involvement and Commitment:** Engage key users early and secure management commitment to ensure project success.

**12. Code Freeze Planning:** Plan and communicate the code freeze period effectively to avoid last-minute changes.

## Lessons Learned: Functional Aspects

**1. Efficient Housekeeping:** Regular system housekeeping helps drive conversion efficiency and reduces complexity.

**2. Archiving and Cleansing:** Archive and cleanse unused custom code and SAP modifications to simplify the migration process.

**3. Thorough Documentation:** Document table changes and their usage in custom programs to ensure accuracy and future reference.

**4. Training Costs:** As the system release ages, training costs increase. Plan training efforts accordingly to minimize disruptions.

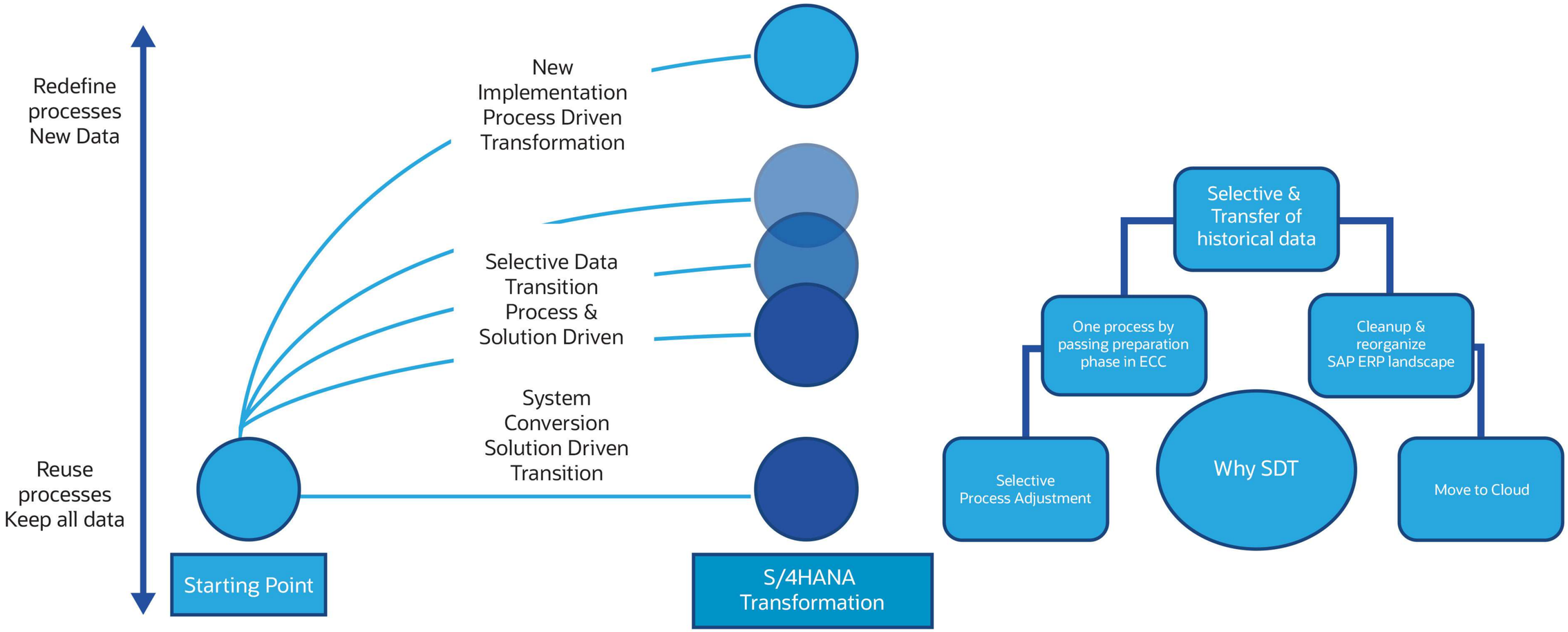
**5. Computer-Based Training:** Utilize computer-based training for easier distribution and better user adoption.

**6. Industry Solutions Review:** Review specific information for industry solutions to ensure they are fully compatible with the new system.

**7. Early Custom Development Addressing:** Tackle custom development early to resolve business process issues quickly.

**8. Modification Adjustments and Testing:** Better documentation and existing test procedures can ease and reduce the time required for modification adjustments and testing, which are significant cost drivers.

## Selective Data Transition (SDT)




The migration strategy follows five key phases: Analysis defines the scope by scanning organizational structures, data objects, and custom tables. Extraction selects relevant data based on scoping rules without altering the source system. Transformation adjusts data through field mappings, renaming, and complex rule-based changes. Loading writes transformed data into the target system, while Validation ensures accuracy through automated checks and project-specific validations.