Plan and Deliver with Confidence a Move to SAP S/4HANA® Using Intelligent Tools from SAP
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The First Step to Becoming an Intelligent Enterprise

Today, we are excited to see how companies around the world are using SAP S/4HANA® to become intelligent enterprises. Our customers can access next-generation business applications to run with the agility, simplicity, and speed needed to stay competitive in today’s digital economy.

SAP has a portfolio of tools for both new implementations and system conversions for SAP S/4HANA to further reduce complexity while increasing automation and making new technologies easier to use. This brief has been created to for those who want to understand the SAP tools available for successful planning and execution of projects for SAP S/4HANA projects – such as system readiness, downtime, custom code adaptation, and data loading.

Recent advancements include:

- **ABAP® test cockpit:** Starting with SAP S/4HANA 1809, we offer automated custom code adaptation with quick fixes. Our goal is to achieve an automation rate of 80%.

- **Downtime-optimized conversion option:** The common cut-over window requirements become achievable for midsize and large systems with the standard toolset. For extra-large systems, SAP offers specialized services.

- **SAP S/4HANA migration cockpit:** This offering supersedes the SAP Legacy System Migration Workbench tool.

- **SAP Cloud Platform Integration Advisor:** This new tool can significantly reduce the integration efforts for new interfaces.

- **SAP Model Company:** Customers can request model company services for specific industries and lines of business or a custom edition of the services that blends multiple model companies.
The Essential Tools for System Conversions

SAP has introduced an efficient set of conversion tools to help smooth the conversion of the SAP® ERP application to SAP S/4HANA. This portfolio helps companies overcome common challenges with ease and minimal disruption, while allowing them to adopt additional digital capabilities as their needs evolve and business grows.

MAINTENANCE PLANNER
Our maintenance planner service is the cloud-based successor of our maintenance optimizer, landscape planner, and product system editor services.

The on-demand service simplifies the maintenance process by combining critical tasks such as definition of product maintenance dependencies, generation of configuration stack files, and downloading of software archives. It provides essential capabilities for planning a new implementation or a conversion to SAP S/4HANA.


SAP READINESS CHECK FOR SAP S/4HANA
The SAP Readiness Check tool for SAP S/4HANA assesses the functional and technical aspects of converting the SAP ERP application to SAP S/4HANA.

A functional assessment provides insight into mandatory application changes, and potential impacts are detailed in relevant simplification items. Furthermore, the analysis recommends relevant SAP Fiori® apps based on frequently used transactions in SAP ERP.
SOFTWARE UPDATE MANAGER
The Software Update Manager tool supports IT tasks such as software maintenance, SAP system migration to another database, and add-on installation. More importantly, the multipurpose tool converts a system running on SAP ERP into one powered by SAP S/4HANA. Customers can migrate to the SAP HANA* database, convert data into new structures, and upgrade software in a single procedure.

The option for downtime-optimized conversion drastically reduces the system outage necessary to complete a system conversion. Software Update Manager converts large parts of data from SAP ERP during uptime and uses record-and-reply technology to incorporate the changes. In return, the common downtime requirements also become achievable, with the standard toolset, for large systems. (See Figure 2.)

Please note this option is currently available on request to SAP.


MINIMIZED DOWNTIME SERVICE
The minimized downtime service offered by SAP Digital Business Services is designed for customers that have:
• Systems with data volumes of 20 TB or more
• A large data footprint in either finance or logistics organizations or both
• A high volume of application changes

The minimized downtime service also makes it possible to combine multiple maintenance events – such as Unicode conversion, a move to another data center, and system conversion – into a single system downtime. This service utilizes an advanced near-zero downtime technology (NZDT) to help meet the desired system downtime windows.

For more information, visit https://launchpad.support.sap.com/#/notes/693168.

Figure 2: Conversion Options in Relation to Downtime Requirements

<table>
<thead>
<tr>
<th>Achievable downtime</th>
<th>Typical effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard conversion</td>
<td>Generally available</td>
</tr>
<tr>
<td>Downtime-optimized conversion</td>
<td>Pilot phase</td>
</tr>
<tr>
<td>Near-zero downtime technology*</td>
<td>Minimized downtime service</td>
</tr>
</tbody>
</table>

* Downtime and standard conversion efforts cannot be reduced to zero.
ABAP TEST COCKPIT
With SAP S/4HANA, customers may need to apply corrections to custom code for compatibility to the new data models and APIs. The ABAP test cockpit and ABAP development tools in Eclipse are the tools of choice for this exercise of custom code adaption.

ABAP development tools enable automated refactoring of custom code through quick fixes. The first available set of quick fixes automatically resolves the most frequent findings in custom code. This alone can lower development effort by as much as 60%. Our goal is to achieve an automation rate of 80%.

The new custom code migration app built with SAP Fiori offers analytical capabilities that can help you understand the impact on the custom code and structure your work accordingly. It also helps you remove unused custom code upon system conversion. To accomplish this task, it loads code execution statistics directly from SAP ERP and excludes custom code that has not been used within the monitored time period. To benefit from this feature, SAP advises customers to activate the ABAP call monitor in the production system to start collecting these statistics as soon as possible.

Note that the above features are part of SAP S/4HANA and do not require a separate license. (See Figure 3.)

For more information, visit: https://www.sap.com/community/topics/abap-testing-analysis.html.
**SQL MONITOR**

The ABAP test cockpit offers performance checks to reveal poorly performing custom code developed in ABAP. However, optimizing the entire body of custom code may often be unachievable. Fortunately, with our SQL monitor tool and SQL performance tuning worklist, customers can achieve significant performance improvements with only a fraction of effort.

The SQL performance tuning worklist combines the results of static code checks performed by the ABAP test cockpit with runtime and performance data supplied by the SQL monitor tool. Together, they detect critical performance hot spots and prioritize opportunities for optimization.

**OBsolete Data Handling**

When converting SAP ERP to SAP S/4HANA, data structures copied from the source system and transferred to the new data model can become obsolete. They are no longer used by applications that support functions such as material management, financials, sales and distribution, and environment and health science.

After customers have successfully tested and validated their conversion results, they can clean up a subset of outdated data with the obsolete data handling tool, which reduces the memory footprint of SAP S/4HANA.

For more information, review the conversion guide for SAP S/4HANA at [https://help.sap.com](https://help.sap.com).
The Essential Tools for New Implementations

Customers who have been using SAP ERP for many years have heavily customized and localized their applications to cater to organic and inorganic growth. They are at the point where existing ERP constraints are hindering their ability to launch new business models and to reach their customer base more quickly compared to the competition.

Customers often consider a new implementation of SAP S/4HANA to return to standardized business processes and adopt leading best practices. For our customers, the suite presents an opportunity to perform at a higher level and address future needs with greater ease.

SAP BEST PRACTICES

SAP Best Practices packages capture the experience of more than 35 years of implementation projects carried out by SAP around the globe for companies of all sizes and various industries.

The packages give our customers access to a detailed description of best practices designed for defined industries and lines of business. Detailed guides can help customers configure SAP software and implement best business practices including predefined master data and configuration settings, which can be imported into SAP S/4HANA.

No matter the size of the business, SAP Best Practices can help customers achieve record time to value – on premise, in the cloud, or in a hybrid environment – by enabling them to:

• Rely on proven software deployment plans, methodologies, and implementation strategies
• Use best practices based on thousands of successful software deployments
• Implement functionality with ease, and focus on their line of business or industry
• Accelerate the deployment of the latest technologies to maintain a competitive edge

For more information, visit https://rapid.sap.com.
**SAP MODEL COMPANY**

SAP Model Company services are ready-to-run solutions serving as a market standard for implementations of SAP S/4HANA, including both best practices and next practices. The services are delivered by SAP Digital Business Services and require a signed contract scope document.

A wide variety of industries (such as oil and gas, utilities, and retail) and lines of business (including finance and R&D) are covered. Also, depending on the country, customers can mix and match multiple services to address their unique needs through SAP Model Company, custom edition. The complete list of SAP Model Company services and compatibilities are available at [http://www.sap.com/modelcompany](http://www.sap.com/modelcompany).

SAP Model Company is essential for new installations as well as very helpful for conversions. You can use the services during the project’s preparation and exploration phase to:

- Demonstrate the functionality and process in show-and-tell sessions
- Have your key users study preconfigured scenarios with test scripts
- Build prototypes by using or extending the existing configuration
- Use the services as a reference when conducting fit-to-standard analysis

The services are built on top of the latest SAP Best Practices packages. The best-practice packages are available free of charge with SAP products and provide a solid foundation for each SAP software implementation. SAP Model Company builds on and extends these best practices based on the experience from the SAP Digital Business Services organization, stemming from successful real-life transformation projects.

SAP partners are allowed to extend the SAP Model Company services and offer them together with their portfolio. Common extensions include:

- Additional process models for specific industry segments
- Extended process models across multiple applications (for example, SAP S/4HANA as well as SAP Customer Experience and SAP BusinessObjects solutions)
- Process elements and capabilities showcasing innovative Big Data or Internet of Things scenarios

For more information, visit [http://www.sap.com/modelcompany](http://www.sap.com/modelcompany). You can also try a 30-day trial of the demo cloud for SAP Model Company.
SAP-QUALIFIED PARTNER-PACKAGED SOLUTION
An SAP-qualified packaged solution is built, sold, and supported by an SAP partner. Our library of over 800 preconfigured business processes enables our customers to customize and configure their systems and deploy applications and add-ons that complement their implementation of SAP S/4HANA.

SAP-qualified partner-packaged solutions are end-to-end, fixed-price, and fixed-scope offerings for either a new implementation or system conversion – tailored to the needs of small and midsize businesses. The solutions use SAP Best Practices and combine it with our partners’ industry expertise and regional requirements.

Each SAP-qualified partner-packaged solution includes an SAP software license, partner services, and the associated documentation necessary for a successful implementation. By choosing an SAP-qualified partner-packaged solution for your implementation of SAP S/4HANA, you can expect to receive a proven solution that offers rapid implementation, low risk, and a predictable outcome.

For more information, visit https://www.sap.com/partner/partner-package-finder.html.

SAP S/4HANA MIGRATION COCKPIT
The SAP S/4HANA migration cockpit helps make data migration fast and hassle-free for both new and current SAP customers moving to SAP S/4HANA. The cockpit comes built-in with SAP S/4HANA and SAP S/4HANA Cloud.

With the cockpit, our customers gain access to preconfigured migration objects to help them load the necessary master data and transactional data (open items) from a source system to SAP S/4HANA, while applying defined rules for data transformation. The migration cockpit supports the uploading of data through files and staging tables. The modeling environment allows customers to create additional migration objects and extend standard ones.

The SAP S/4HANA migration cockpit supersedes the SAP Legacy System Migration Workbench tool, which has been commonly used to upload data in new implementations for decades. SAP continues to work closely with our customers and partners to deliver more features and make data migrations simpler.

SAP DATA SERVICES

When migrating multiple legacy systems from various third-party vendors to SAP S/4HANA, our customers can face an increased level of complexity throughout the migration experience. The goal of data migration is more than just moving and transforming data; it’s also about improving data quality so all data is clean and valid and can be trusted.

SAP Data Services is an ETL (extract, transform and load) software designed for profiling, extracting, transforming, and improving data quality – which plays a vital role in a data migration project. (See Figure 4.)

Employing SAP Data Services for a migration project gives customers the ability to:
• Discover data-quality problems within source systems through simple technical profiling such as determining the number of records that miss a particular attribute and even more complex cross-table checks – for example, an assessment of vendors with no corresponding orders
• Extract source-system data efficiently and transform it into the target format and structure for SAP S/4HANA
• Apply data cleansing jobs
• Implement data validations against target system configuration to ensure technical alignment of the transformation logic
• Deliver data in the correct format (such as staging tables or files) to the SAP S/4HANA migration cockpit to reduce efforts

As data migration projects become larger, collaboration is required to manage how data is designed, transformed, and validated. For these projects, it is recommended that our customers use SAP Advanced Data Migration by Syniti.

Figure 4: Tools for data migration for new implementations
Midsize and large projects require extensive collaboration within the data team and with other stakeholders. A combination of the SAP Advanced Data Migration application by Syniti with SAP Data Services software provides the orchestration, extraction, transformation, and data-quality capabilities that will be essential for migrating complex data to SAP S4/HANA. (See Figure 5.)

SAP Advanced Data Migration by Syniti is built to automate a best-practice process for data migration and orchestrate the process of SAP and third-party data migrations to SAP S/4HANA. The application also offers a collaboration platform that enables all stakeholders to deliver their tasks in a guided, controlled, auditable, and secure environment. (See Figure 6.)

The key features of the application include:
- A single view into what your team is working on – from mappings and data cleansing to data construction and sign-off workflows – that provides the visibility you need to drive progress with measurable metrics and key performance indicators
- Automation of the creation of up to 80% of the code and reports needed to execute the data migration
- Ready-to-load data that is handed over to SAP/S4HANA migration cockpit either through files or staging tables
- Technical reconciliation capabilities to support comparison, review the source and target data, and receive approval for the migration process by business owners
- Reuse of business knowledge and assets created during the migration for both subsequent migrations and future information management initiatives – for example, post go-live data-quality initiatives

What’s in store for...

<table>
<thead>
<tr>
<th>Project Managers</th>
<th>Business Users and Subject-Matter Experts</th>
<th>Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated reporting of the exact status of the migration program</td>
<td>Elimination of spreadsheets to populate and manage</td>
<td>Autogenerated code for data extraction, transformation, validation, and reconciliation</td>
</tr>
<tr>
<td>Timelines and data-quality metrics</td>
<td>Web portal to design, view, check, and remediate data with minimal effort</td>
<td>Focus on the high-value business validation rules</td>
</tr>
</tbody>
</table>
Projects employing SAP Advanced Data Migration by Syniti indicate savings of 30%–40%, compared to traditional approaches.

For additional information on SAP Advanced Data Migration by Syniti (including an overview of functionalities and potential savings), visit https://www.sap.com/products/backoffice-data-migration-services.html.

SAP CLOUD PLATFORM INTEGRATION AND INTEGRATION ADVISOR SERVICES
The SAP Cloud Platform Integration service is a strategic platform for solution integration across cloud-based and on-premise environments. It provides features such as:

- Core runtime for message processing, transformation, and routing with tenant isolation
- Out-of-the-box connectivity support through adapters
- Flexible and powerful integration flows
- Predefined integration content
- Advanced security

The SAP Cloud Platform Integration Advisor service is a unique feature of the SAP Cloud Platform Integration service. Its design-time paradigm helps our customers simplify the creation and maintenance of integration content. Through a smart combination of machine learning and crowdsourcing, it generates proposals for interfaces and mappings tailored for a specific industry, country, and business context – ultimately saving the most labor-intensive part of integration projects.

For more information, visit https://cloudplatform.sap.com/integration.html.
A Faster, Less Resource-Intensive Path to SAP S/4HANA

With our optimized portfolio of tools, programs, content, and services, our customers get the insight and support they need to:

• Adopt technologies that are easy to consume and have a proven track record
• Accelerate the end-to-end transformation of their business with the latest technology
• Ease user adoption with a better understanding of employee needs and experiences
• Reduce significantly the time and effort required to deploy SAP S/4HANA
• Collaborate with a trusted partner committed to continuous improvement and their success

More importantly, our customers can confidently transition to SAP S/4HANA to meet their unique business needs with minimal disruption, less risk, and accelerated time to value.

LEARN MORE
For more information about the tools, programs, content, and services that support the SAP S/4HANA Movement initiative, visit us online.