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# SAP Migration Strategies

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**Abstract:** ***This is to help SAP Migration Strategies understanding based on organization size, based on their existing environment and needs, based on source version and targeted versions, homogenous or heterogenous migrations, whether premium support to be considered, SAP MaxAttention support, sizes of Database decrease based on approach Greenfield/Brownfield/Bluefield approaches. Infrastructure support, data extraction, transformation tools, Business values should be enhanced, involving corresponding verticals for approach. Customer SAP migration recommended on new digital workspaces adaption, embedding Artificial intelligence advancements, avoid challenges transition into future-friendly environments.***

**Keywords:** SAP Cloud Migrations, Greenfield, brownfield, Bluefield, hybrid strategies, Hyperscalors, public/private cloud considerations

## 1. Introduction

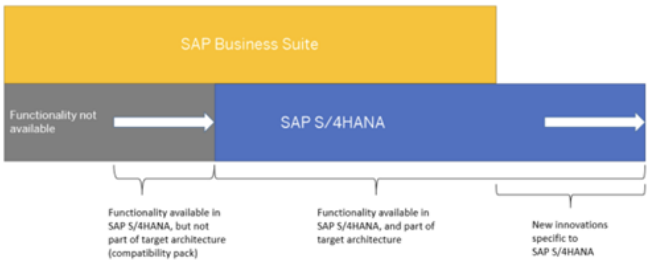
SAP stands for "Systems, Applications & products in data processing" businesses manage their operations, Supply Chain, Manufacturing, several horizontal alliances of a company including Finance, Human Resources, Customer Relationships using SAP ERP software. 85% of fortune 500 companies rely on SAP for their core business processes, Customers using SAP have reported 20% increase in operational efficiency.

SAP is being widely used across large/medium scale enterprises because of robust solutions & processes in one place.

SAP environment migrations to SAP S/4 HANA for customers coming from any legacy system. SAP S/4 HANA follow reliable migration approaches based on their current environment sizes. Consider scope to tune objects in the source or target based on predefined available migration objects of respective application scope to consider for final staging of tables. Database migration strategy is to simplify or facilitate migration of data from one platform to another which involves wide range of complications.

Customers SAP environment divided into Large/Medium/Small scale based on their SAP landscapes, database sizes, number of systems, business verticals, Regional/Geographical presence in such environments or backgrounds existing systems were already running their businesses, due to SAP keep bringing latest enhancements in sync to present fasting world, end of their existing mainstream versions of their SAP products, databases, application tiers to compete with multiple marketplace curves.

SAP products have multiple business verticals Oil & gas industry, Aviation, Pharmaceuticals, Biotechnology, Banking/Finance/Insurance.




**Semantic Changes**

SAP & Partner supported products should be compatible with target versions, this can be validated by Simplification items checklist for their data structures & scope, simplification list will list of all technical and semantic changes from current version to target SAP S/4 HANA, collection of single simplification items organized by application function area. Manufacturing, Retail almost in every vertical.

**Implementation & Conversion**

SAP provides support from Installations, Operations, Upgrades, Conversion, Security guidelines, For Migration standpoint SAP have their own recommended tools and strategies to enable data migration from any legacy into SAP S/4 HANA, one must follow reliable migration approach built into SAP S/4 HANA using pre-defined data migration objects.

**Migration/Conversion** resources are available for dependable guidance to follow right approach based on approach solution we consider, however must follow SAP provided Installation guide/Upgrade/Conversion guides which adheres to security and performance.

Optimizations, there are several Notes recommended to simplify before data migration activities kick-off.

**Data Volume Management**

Best practices for DVM during the conversion of a single SAP ERP system with a medium sized database to an SAP S/4

HANA System.

SAP S/4 HANA

**Migration Checklist**

Migration Readiness checklist plan to be followed for Migration context, setting up and performing SAP S/4 HANA Readiness checks.

**Code Checks**

Code checks with help of ABAP Test Cockpit and Code inspector check variants recommended to use, basically the Final result list shall empty or only list to be seen which are identified as false positives.

## 2. Methodology

**SAP Migration Cockpit**

- Facilitate migration projects for new implementations using SAP S/4 HANA Migration cockpit helps license costs which is already included with SAP S/4 HANA license shipment,
- Preconfigured migration content specific to SAP S/4 HANA
- Integrated into SAP Activate methodology
- Migration objects for custom requirements
- No additional developer skills required
- Automated mapping between source & target
- Simulation guidance for migration process

| Source Country key | Target Country key |
|---|---|
| Deutschland | DE |
| USA | US |
| Poland | PO |


- Using Fiori app migrate your data for process & content of data loads to SAP S/4 HANA Cloud private edition or SAP S/4 HANA, migrating of objects staging & Objects direct transfer

**SAP Migration cockpit challenges**

- Cannot or not data in sync across systems
- Continuous data exchange or flow will not happen
- Integration scenario complexities
- Data Cleansing
- Independent of deployment options is not support
- No migration objects for historical data in migration cockpit
- Only the data necessary for smooth business start is migration

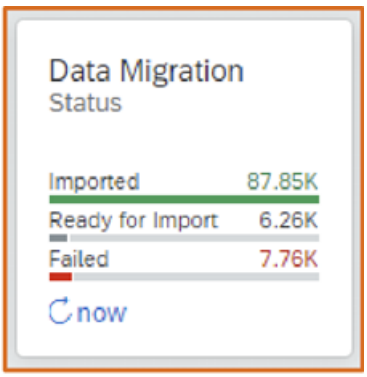
To cover above migration cockpit challenges – SAP products like SAP Master data governance, Central Finance, SAP Landscape Replication or Product Data replication server or SAP Data intelligence methodologies are available.

Comprehensive customer-specific evaluation solutions like Business Warehouse or side-by-side extensibility can be considered.
Migration data using Staging Tables.

Migration data using CSV files to fill staging tables

Migration data Data directly from SAP system are fair way.

In Migration Cockpit enhanced in 2023 version using Fiori App (F3280, F7829,) – Real time view cross migration projects/objects, audit functionality for migration data, included in standard business role for data migration.




## 3. Project Setup

### 3.1 Project (single/Multiple)

One project or several projects for mapping values based on migration objects in scope.

Mapping sync across projects – this requires more efforts but more reliable, there are several help guides provided by SAP for this approach.

Release in cycles after creating project cycles – there are pre-delivered objects by SAP

##Avoid upgrading to a latest release during this migration project to avoid more challenges.

Before creating a project recommended to follow Installation guide recommendations for Migration cockpit master Notes.

**Data cleansing** in source system is recommended before creating a project cycles.

Best Practices achieved via SAP Signavio process navigator – this is new tool SAP offering for new deals with RISE in SAP.

Mandatory add-on's DMIS, S4CORE.

Involving Architectural team makes it easier for Administrator, Operational activities for Migrations based on system complexity, database sizes.

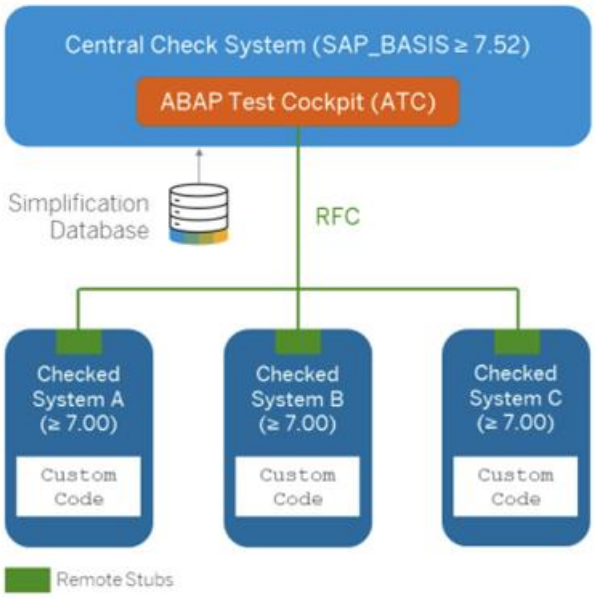
Industry specific solutions are ready to adapt based on upskilling for SAP S/4 HANA leveraging those solutions would make project deliverables achieve with error-free deliverables.

### 3.2 Custom Code analysis

Custom code analysis to identify custom code which must adapted in the context of system conversion to SAP S/4 HANA
Perform Function adaption for any data dictionary objects using SPDD/SPAU & SPAU_ENH,

### 3.3 ABAP test cockpit (ATC)

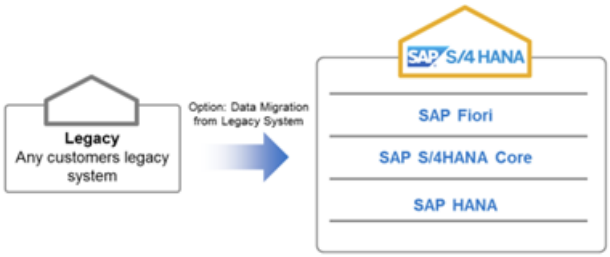
Which SAP S/4 HANA checks relate to SAP S/4 HANA simplifications referring to corresponding SAP Notes to solve the issues.




## 4. Implementation Approach

High-level below adaption criteria before choosing the approach;

- New installation of SAP S/4 HANA- this is when customer wants to move from legacy or SAP Business suite to SAP S/4 HANA, in this case SAP is installed and master & transactional data are migrated from legacy system to SAP S/4 HANA multiple solution can be used for this approach SAP SLT or SAP Data Services technology for data migration.




- Converting a system to SAP S/4 HANA – legacy data environment referred as a source system for migration using ODBC protocol or rapid data migration package comes with pre-built content for SAP S/4 HANA
- **Cleans, transform/configure, extraction –** data is extracted from source placed in staging area in SAP Data Services, cleansing to meet specific patterns for mapping and transforming the data per business context, finally configuration such that SAP S/4 HANA implementation, the system transformation and validations against the configuration & customization settings vs mapping of source data with SAP Configs.
- **Exported** using LSMW, IDOCs, Direct Input programs other load methodologies.
- Organizations have three main approaches to choose from **Greenfield, Brownfield, Bluefield & Hybrid** approaches, each of it their unique advantages & considerations.

### 4.1 Greenfield Method

This is vanilla fresh installation independent environment, greenfield sizing as platform independent requirements of the hardware resources, standard delivery SAP applications, can go with latest versions which has all required applications installed on On-Premise/Cloud or hybrid environments.

Depending on the organization requirement this can be resized at its flexibility, minimal impact on existing business processes, less risk-based approach achieved in significant of time faster turnaround

### 4.2 Brownfield Method

This is as-is approach based on current systems infrastructure built and migration/conversion activities to be performed. This approach takes times but allows to stimulate as-is business process, Organizations can prioritize on this incremental approach by leveraging data migration and re-implementation of business processes, along adapting if any new innovative solutions in target version post conversion/migration. Challenges like passable planning time & cost, technical complexity like data cleansing, ABAP code analysis, Collaboration with multiple 3rd party integration deployments, upgrades, compatibility issues, all these have to performed as pre-checks before considering this brownfield approach, can be single point of risk – if failed business & financial loss to re-perform the whole exercise, to be performed in Sandbox/Non-impact systems before planning for production environments.

### 4.3 Bluefield Method (hybrid)

This process is combination of both Greenfield and Brownfield methods, this is vanilla installation then adapting selective data migrating into this new build system. This must be performed initially in Sandbox/non-prod/non-critical environment to calculate precise timelines and to counter risks on migration process, through planning & testing before actual deployments, Data harmonization, alignment with process and multiple migration projects to be created phase by phase cycles to achieve final result.

Each process has their own advantages and cannot say disadvantages but their own challenges to achieve end desired results thorough planning with feasible options based on organizations costs, time and resources bandwidth.

Industry specific environments, N or N+1 or N+2 considering their retrofit change management processes to be aligned.

## 5. Conclusions & Recommendations

**Conclusive elements:**

**Business Requirements**: based on Business requirements choosing right migration method by assessing their current SAP systems/environment, classifying gaps, zones of enhancements, they must consider based on their future plans, upcoming target version features/functionalities in their new target SAP S/4 HANA systems whether its public or private cloud, corresponding infrastructures to be considered.

**Timelines**: it varies based on Greenfield vs Brownfield vs Bluefield approaches, it may not be applicable for all systems in the environment, it must be appraised based on S/4 HANA, BW/4 HANA, Portal, other solution based.

**Cost & Effort:** Organization must estimate about costs & resources required for migration projects concerning systems impacting, influence of budgets, customization involved.

Integration: SAP environment should have firm security to challenge current world of vulnerabilities, choosing right approach, with right infrastructure cloud provider is much, SAP systems with 3rd party integrations adds another effort to consider, as a pre-requisites their compatibilities, support must be measured before proceeding into actual planning, off course SAP certified vendors and their compatibility have to verified in SAP wiki or SAP Notes or help guided documents.

**In Conclusion:**

Migration is a complex process that requires careful planning and execution, organization have to choose right migration approach (Greenfield/Brownfield/Bluefield (Hybrid) based on individual's study several above conveyed aspects.

Choosing the best fit methodology safeguards successful migration project

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