



SAP S/4HANA Cloud Public to Private Edition Upgrade: Strategy to Implementation

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ABSTRACT

An efficient SAP S/4HANA data architecture eliminates redundancy and improves data integration, therefore data mapping from legacy systems to new systems is necessary. This is since data is often stored in legacy systems in a manner that is incompatible with SAP S/4HANA initiatives, and another issue is data quality. In legacy systems, a large amount of erroneous, outdated, or irrelevant data can accumulate over time. The purpose of this article is to provide an overview of the SAP S/4HANA public to private upgrading procedure before evaluating how companies may employ real-time analytics, boost operational effectiveness, and ensure business continuity with a more flexible and secure cloud platform. Case studies and insights from Cikarang polymer companies serve as the foundation for the study technique. The SAP Activate methodology is an official framework from SAP that covers project phases, tasks, and deliverables to ensure that upgrading is efficient, well-organized, and in line with business objectives. By recording best practices and lessons gained from real upgrading initiatives, this research primarily contributes to the corpus of knowledge on enterprise systems migration and digital transformation. This study offers a framework for planning, executing, and monitoring SAP upgrades and evaluates how moving to SAP S/4HANA improves productivity, analytics, and compliance.

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1. Introduction

In today's dynamic business landscape, organizations continuously seek ways to innovate, adapt, and maintain a competitive edge [1]. SAP S/4HANA is presented as a transformative technology designed to revolutionize business operations by providing real-time data, optimizing processes, and enabling faster decision-making [2]. As the latest iteration of SAP's business suite software, SAP S/4HANA serves as the digital core for an intelligent enterprise. Consequently, numerous SAP ECC users are planning their transition to SAP S/4HANA [3]. The transition to S/4HANA represents a significant transformation of enterprise resource planning systems, going beyond mere technical enhancement [4]. To effectively implement this advanced platform and leverage its capabilities, such as real-time analytics, simplified data structures, and improved user interfaces, businesses must migrate their data from older systems [5].

Businesses are attempting to expand their clientele by offering prompt and reasonably priced service in an increasingly complex business environment [6]. Businesses must therefore see this as an opportunity

rather than a threat. Making the most use of information technology can improve accuracy, save time, and save energy in processes and operations [7]. There are a few difficulties with migrating data to SAP S/4HANA, mostly because of the distinctions between the new platform and legacy systems. Data compatibility is one of the biggest obstacles [8]. Extensive data transformation is required because legacy systems frequently store data in forms that are incompatible with SAP S/4HANA endeavors [9]. Furthermore, thorough data mapping from the old system to the new one is necessary due to SAP S/4HANA's streamlined data model, which removes redundancy and combines data more effectively. An additional challenge is data quality. Legacy systems may accumulate significant amounts of redundant, out-of-date, or erroneous data. Moving such data to SAP S/4HANA without sufficient purification could lead to mistakes and inefficiencies in the new system. Thus, data purification is an essential step in the migration process. Procedure, guaranteeing the delivery of only pertinent, high-quality data [10].

This next-generation ERP platform increases efficiency and agility by delivering real-time insights and automation using in-memory computing and sophisticated analytics. SAP S/4HANA Cloud Private Edition and SAP S/4HANA Cloud public edition (part of RISE with SAP) are the two main cloud deployment choices for SAP S/4HANA. It's also crucial to comprehend the distinction between SAP S/4HANA and SAP S/4HANA Cloud. There are important differences in terms of pricing, control, flexibility, and customization, even though both the public and private editions are meant to help businesses digitally transform their operations [11].

Research by [12] looked at the process and complexities of moving to the cloud using SAP S/4HANA. The comprehensive system considers an ERP strategy that integrates analytics, procedures, and data. Key migration criteria including efficiency, real-time analytics, and use of the newest technology are highlighted. Later research by [13] focused on interoperability, governance, and human-centered change while examining a hybrid cloud approach that connects SAP S/4HANA with legacy ERP platforms. Technical reference architectures, industry whitepapers, and firm case studies were all subjected to secondary analysis using a mixed-methods methodology. The transfer of SAP success factors learning apps from Oracle DB to SAP HANA DB is the subject of another study by [14], which focuses on the difficulties, performance improvements, and results of this change. A direct conversion to SAP HANA, an in-memory columnar database, is difficult and requires high performance because the application architecture is strongly linked to Oracle's SQL syntax and transactional processes.

To ensure that the new system operates smoothly and poses no significant risks to data security or business continuity, this research makes a significant contribution by outlining the steps of the upgrade process from public cloud to private edition cloud without negatively affecting the user or creating a bad impression. This post will outline an effective method for upgrading SAP, which has been in use for three years, from SAP S/4HANA cloud essential edition to private edition by outlining the quantifiable processes in each adopted module, with a successful approach to ensure the successful completion of all database transfer procedures, and transactions.

2. Research Method

The methodical, theoretical examination of the techniques used in a field of study is known as methodology. It encompasses the theoretical analysis of a group of concepts and practices related to a topic of study. Stages, theoretical models, paradigms, and quantitative or qualitative methodologies are typically included. [15]. A methodical approach to resolving the research challenge is research technique. It can be thought of as a science that examines how scientific research is conducted [16]. The case study was carried out at two polymer companies in cikarang, namely a polymer-based company that produces PVC and a polymer-based company that produces pipes and household appliances. The research method is based on complete participant observation, in which the researcher fully engages in the day-to-day operations of the object under observation. Figure 1 shows the steps taken to finish this project as follows:



Figure 1. Methodology upgrading sap s/4hana private edition [17],[18].

2.1. Project preparation

Careful planning, system inspections, and stakeholder alignment are necessary to get ready for an SAP upgrade. Before proceeding to the realization phase, the preparation phase makes sure that the data, business procedures, and infrastructure are prepared. Determining whether an upgrade is functional (new features, improved business processes) or technical (performance, compatibility) is the aim of planning and scope determination. Explain the scope while considering the modules, integrations, and modifications that will be affected. Establish deadlines and resources to specify the project's budget, team roles, and milestones. The objectives of the infrastructure evaluation and system requirements are to confirm the supported start releases and make sure you can upgrade from your existing SAP version. Verify the hardware and software readiness of servers, databases, and operating systems. Check connectivity and bandwidth for tasks linked to migration [19]. Some important points in this stage include initial meeting to establish goals, parameters, deadlines, and roles. Process owners (finance, logistics, HR, etc.) will be included in business workshops to identify the crucial processes that the upgrade would affect. IT teams will align through technical training on system landscape, infrastructure readiness, and upgrade tools (SUM, Maintenance Planner). Risk workshops to identify possible risks and mitigation techniques, such as downtime, conflicts with custom code, and problems with data migration. To lessen the burden of migration, data cleansing is used to archive or remove outdated data.

Master data validation plays a critical role in ensuring the accuracy, consistency, and reliability of material, financial, vendor, and customer master records before a system migration or upgrade. Transaction data should be thoroughly reviewed to identify and close open items, such as purchase orders, sales orders, and outstanding invoices, thereby minimizing the risk of processing errors and data inconsistencies during migration. Interface data checks are also essential to verify that integration points with external systems, including CRM platforms and third-party applications, function correctly after the transition. Additionally, implementing a comprehensive backup strategy ensures a complete system backup is available, preventing potential data loss.

2.2. Explore and template define

Based on [20], The explore phase, which is often included in the larger SAP Activate Methodology, is crucial for understanding the functional and technical consequences of an SAP upgrade (such as to S/4HANA) before starting the execution phase. Basic knowledge transfer training is an organized activity used in SAP upgrade projects to make sure that the project team and business users comprehend the upgrade procedure, new features, and modifications from the current system. Training becomes more uniform, effective, and scalable across teams when an existing template is used. The activities include an introduction and an overview of the upgrade's goal (technical vs. functional). Modules affected include FI, MM, SD, HR, and others. high-level schedule and benchmarks. The SAP system environments (Sandbox, Development, Quality, Production) are explained using the system landscape and tools. Describe the procedures used to prepare enterprise data (archiving, cleansing, validation). managing transactional data versus master data. techniques for backup and rollback. To guarantee unit testing, integration testing, and regression testing, testing and validation are carried out and checks for data reconciliation.

2.3. Realization.

The actual technical and functional work of an SAP update takes place during the realization phase, following planning and investigation. In essence, this is the project's execution phase, where plans are implemented and systems are modified. System customization in SAP refers to the practice of altering the basic SAP system to meet the business requirements of a company. Even while SAP provides a lot of standard functionality, every company has unique policies, rules, and reporting needs that often require modifications that go beyond configuration. The test preparation and development items migration and fix phase of a SAP upgrade project is crucial to ensure that the system's technical and functional aspects are stable before go-live. By ensuring that improvements and customizations are appropriately matched to the new release, this stage closes the gap between development and quality assurance. User access and authority and master data collection by complete participant observation are fundamental duties in an SAP upgrade project that guarantees data integrity and security prior to, during, and following the upgrade. As part of the realization and validation stages of an SAP upgrade project, the master data import and cost run activity makes sure that the upgraded system is filled with accurate financial calculations and clean, consistent data. Business readiness is verified during the key users training and user acceptance testing (UAT) phase of an SAP upgrade project. Before going live, it guarantees that the improved system satisfies business needs and that those who will use it are aware of the changes.

2.4. Deployment

Production system preparation is the last level of technical preparedness prior to cutover and go-live in an SAP upgrade project. For the upgraded system to function properly, it guarantees that the production environment is secure, stable, and in line with business needs. The broader workforce (beyond critical users) is trained to use the improved system during the End User Training stage of an SAP upgrade project. This reduces disturbance, guarantees seamless adoption, and boosts confidence among staff members who depend on SAP daily. Cutover strategy confirmation and open data collection is a final step before go-live in an SAP upgrade project. It guarantees a seamless, controlled, and data-driven transition from the outdated system to the improved production environment.

2.5. Run, Go Live and Support

The system cutover is the crucial stage in an SAP upgrade project where the company switches from the outdated system to the improved production environment. To reduce downtime and guarantee company continuity, it is essentially the go live moment and calls for meticulous preparation, coordination, and execution. The immediate post-go-live support period in an SAP upgrade project is referred to as the production hypercare support on site phase. During this time, the project team offers extensive, hands-on assistance to stabilize the improved system and guarantee seamless business operations. It is essentially the safety net following cutover, intended to promptly resolve problems and foster user confidence. The Production Hypercare support-remote phase of an SAP upgrade project is the continuation of the post-go-live stabilization phase, although it is provided online rather than in person. It guarantees the stability of the upgraded system while offering IT teams and users flexible remote support.

3. Results and Discussion

The process of defining and preparing a project for execution is known as project scope definition. Planning about whether to move forward with the project is helpful. One of the most frequent causes of problems in the construction project development process is an incomplete scope definition in the early phases of the project's life cycle. In the meanwhile, several interests may be positively or negatively impacted by the project's development [21]. The project's scope is to apply industry best practices for Indonesian businesses that use company codes. Additionally, it will increase the organization's understanding of business processes. Install S/4 HANA cloud, private edition, the most recent version of SAP. SAP finance (FI), SAP controlling (CO), SAP sales and distribution (SD), SAP material management (MM), and SAP production planning (PP) are the five modules that encompass every aspect of the current SAP S/4 HANA ES system.

There are difficulties in any migration procedure. Among these difficulties is the requirement for meticulous resource planning, which includes time, infrastructure, and human resources. Avoiding service interruptions during relocation is crucial since they might negatively affect customer experience. In addition to these difficulties, there's a chance that improperly designed private environments could reveal vulnerabilities. Large data volumes that are challenging to migrate effectively and incompatible public cloud data formats with private cloud databases are two more data mapping problems that may occur. As a strategy to overcome the issues, a thorough plan that prioritizes important tasks and moves them gradually is required. Clear phases, testing milestones, and rollback strategies should all be included in this process.

3.1. Preparation

Stakeholder alignment, comprehensive system readiness assessments, and well-structured planning are essential to ensuring a smooth SAP upgrade with minimal disruption to business operations. Effective preparation enables organizations to identify potential risks, allocate resources efficiently, and establish clear communication among all project participants. This phase serves as the foundation for maintaining data integrity, ensuring regulatory compliance, and supporting a successful system go-live. By engaging key stakeholders early in the project, organizations can align business objectives, define responsibilities, and secure commitment to critical project activities.

In addition, system readiness assessments help evaluate the current technical environment, infrastructure capacity, custom developments, and integration points to determine whether they are prepared for the upgrade. Proper planning also includes developing migration strategies, testing schedules, training programs, and contingency plans to address potential issues during implementation. These activities reduce uncertainty and increase the likelihood of achieving project objectives within the planned timeline and budget.

Table 1 presents the milestone plan for the SAP upgrade project. A milestone plan acts as a project roadmap that outlines major phases and key deliverables from the initial planning stage through system deployment and post-go-live support. It provides a structured framework for tracking progress, monitoring project performance, and ensuring accountability among team members. Furthermore, the milestone plan facilitates stakeholder alignment, supports informed decision-making, and helps ensure that critical tasks are completed on time, ultimately contributing to a successful and efficient SAP upgrade.

Tabel 1. Milestone plan

Milestone	Progress	Status	Start date	End Date
Preparation	100%	Completed	12-Jan-25	31-Jan-26
Explore	100%	Completed	1-Feb-26	1-Mar-26
Realization	80%	Open	1-Mar-26	30-Apr-26
Deploy	0	Open	1-Apr-26	1-May-26
Run	0	Open	10-May-26	30-May-26

The division of labor between the business and IT teams is shown in a project organization chart for an SAP upgrading project. It ensures clear accountability throughout the planning, implementation, deployment, and support phases.

Table 2. Project organization

Project Management	Project management team		CEO, CFO					
	Project manager		Manager all Dept					
Function team	Team	Customer Service	Master Data	SCM	PUR	FIN	Costing	PPIC
		SD	MD	MM	MM	FI	CO	PPIC
	Bussines Process Owner							
	Bussines Process User							
Master data	Cosultant		Consultant Name					
	Master Data Key User							
	master Data Owner							
	Consultant		Consultant Name					

3.2. Explore and template defined

Explore and template define are the first two phases of the SAP upgrading project execution plan. They set the foundation for how the upgrade will be implemented and ensure alignment between technical design and business needs. Basic knowledge transfer training is a planned activity utilized in SAP upgrade projects to guarantee that the project team and business users comprehend the upgrade process, new features, and modifications from the current system. Training becomes more uniform, effective, and scalable across teams when an established template is used. The activities comprise an introduction and a synopsis of the upgrade's goal (technical vs. functional). Risks, gaps, or unresolved problems discovered during lifecycle upgrades that must be tracked and remedied either before or after go-live are known as open issues in SAP upgrading projects. The project team often closely monitors them and records them in an issue register.

Table 3. Open issue list

Module	Description	Record date	Dedline	Status	Question By	Owner	Solution
MM	PO print out not Complete	2/1/2026	2/11/2026	In progress	Kelly	Audi	Check in system
MM	PO print out has chinese	2/4/2026	2/9/2026	Completed	Andri	Johny	ABAP Modification
SD	Delivery Performance (OTIF Report)	2/7/2026	2/12/2026	Completed	Kelly	Audi	Check data Logic
SD	Combine several SO in one billing document.	2/4/2026	2/9/2026	Completed	Joni	Johny	Customizing certain data code

3.3. Realization

The realization step of SAP's active approach is where the real system setup and development work is done. After requirements and design have been clarified during the explore and template define phases, realization focuses on developing, testing, and validating the better solution.

3.3.1. Finance and Controlling

The process of configuring the finance (FI) and controlling (CO) modules in an SAP upgrade project to align with the updated version and the business requirements of the organization is known as FICO system configuration. This is one of the most crucial duties since it directly impacts financial reporting, compliance, and cost management.

The general ledger (GL), which describes the posting periods, field status fluctuations, account groups, and chart of accounts, will make up financial accounting (FI). In accounts payable (AP) accounting, set up vendor groups, terms of payment, invoicing procedures, and automated payment plans. Accounts receivable (AR) Accounting will create customer groups, credit management, and billing protocols. GL integration, depreciation zones, and asset classifications are all described using asset accounting (AA). Typically, bank accounting will assign banks, create internal banks, and handle electronic bank statements. Cost center accounting, which is used to create cost centers, hierarchies, and allocation rules, is a component of managing (CO). Explain profit centers and the profit center accounting reporting systems. Internal orders normally will set up budgets, settlement guidelines, and order types. While product costing to establish bill of material and routing integration, valuation areas, and costing variations. Finally, profitability analysis (CO-PA) is used to describe operational problems and traits.

The configuration list update is a crucial operation in the production hypercare phase of an SAP upgrade project, which comes after the system cutover. This process guarantees that every configuration modification performed throughout the project is appropriately recorded, verified, and compatible with the updated production system. FICO unit testing is the stage of an SAP upgrade project when certain processes and functionalities within the controlling (CO) and Finance (FI) modules are tested separately. Before proceeding with integration and UAT, the objective is to ensure that every configuration and development object functions properly.

The technical team finalizes the adaptation, migration, and validation of custom developments (enhancements, reports, interfaces) in the updated system during the development plan and logic confirmation stage of an SAP upgrade project. It guarantees that every development's logic complies with business needs and functions properly in the latest release. The master data collection status is displayed in Figure 2. FICO stands for monitoring the preparedness of all financial master data and controls prior to system migration. After the system launch, this status check guarantees that the data is correct, comprehensive, and in line with company needs, resulting in seamless financial operations.

Table 4. Status of master data collection: FICO

Module	Category	Code of Company	Factory Location	PIC	Date of Confirmation & status	Deadline	import to the system
FICO	Material master	0001	2567	Technical team	Template Define	5-Jan-26	Tba
FICO	GL Account	0001	2567	Finance	Template Define	5-Jan-26	Tba
FICO	Vendor master data	0001	2567	Finance	Confirmed	5-Jan-26	Tba
FICO	Asset Master data	0001	2567	Finance	Collected	5-Feb-26	Tba
FICO	Cost Centre	0001	2567	Finance	Not Started	5-Feb-26	Tba
FICO	Profit Centre	0001	2567	Finance	Not Started	5-Feb-26	Tba
FICO	Activity Rate	0001	2567	Finance	Not Started	5-Feb-26	Tba
FICO	Cost Centre Planning	0001	2567	Finance	Not Started	5-Feb-26	Tba
FICO	Vendor Bank Master	0001	2567	Finance	Not Started	5-Feb-26	Tba

3.3.2. Sales

System configuration for SD (Sales and Distribution) refers to the setup and adjustment of all sales and distribution processes to meet the current release and business requirements. This ensures that order administration, billing, and logistical processes will continue without hiccups after going live. Creating an organizational structure that outlines divisions, distribution routes, and sales organizations is part of this. Combining sales areas (distribution channel, division, and sales organization). establishing client master records (sales areas, business codes, and general data). Material master records (sales view, delivery, and

price). Condition master data (pricing conditions, surcharges, and discounts). preparing a variety of document kinds, including contracts, sales orders, and bids, to create sales papers. Next, designate items and schedule line categories. Establishing copy control between quotations, orders, shipments, and invoices. Assign sales areas to pricing procedures. Set up shipping costs, taxes, fees, and discounts. Define pricing rules and shipping points. Determine billing types using invoices, credit memos, and debit memos.

The configuration list update for SD (sales and distribution) task in an SAP upgrade project guarantees that all SD-related configuration modifications are appropriately recorded, verified, and synchronized with the upgraded production system. This stage establishes a baseline for upcoming maintenance, facilitates audits, and offers traceability. SD unit testing (sales and distribution) is the stage of an SAP upgrade project when individual SD processes are tested separately to ensure that every configuration and development object functions properly before going on to integration testing and UAT. In essence, it serves as the "first line of defenses" for confirming the functionality of sales and distribution.

Table 5. Status of master data collection: SD

Module	Category	Code of Company	Factory Location	PIC	Date of Confirmation & status	Deadline	import to the system
SD	Material master	0001	2567	Technical team	Not Started	5-Feb-26	Tba
SD	Sales price	0001	2567	Customer Service	Not Started	5-Feb-26	Tba
SD	Cust Master data	0001	2567	Finance	Not Started	5-Feb-26	Tba
SD	Cust Credit data	0001	2567	Finance	Not Started	5-Feb-26	Tba
SD	Cust Payment Term	0001	2567	Customer Service	Not Started	5-Feb-26	Tba

The master data collection status is displayed in Figure 3. SD (sales and distribution) serves as a checkpoint to guarantee that all sales and distribution master data is finished, verified, and prepared for transfer to the updated system. This guarantees a seamless order-to-cash procedure after the system is put into place.

3.3.3. Purchasing and Logistic

The setup and modification of all procurement and inventory procedures to conform to the upgraded version and business needs is known as MM system configuration (materials management) in an SAP upgrade project. This guarantees the seamless operation of inventory management and procure-to-pay cycles following go-live. Plants, storage facilities, and purchasing organizations are all part of the organizational setup. Material master data, vendor master records, and information records are examples of master data. Configured purchase order types and release techniques are part of purchasing. Movement and valuation classes are managed via inventory management. The configuration and procedures that govern how materials are received, issued, moved, and valued within the system are referred to as inventory management (IM) in an SAP upgrade project. It guarantees accurate stock levels, movements, and financial posts and integrates with other modules such as FI, CO, SD, and PP. It is a fundamental component of materials management (MM).

The master data collection status is shown in Figure 4. In an SAP upgrade process, MM (Material Management) serves as a checkpoint to confirm that all master data pertaining to inventory and procurement is complete, validated, and prepared for transfer to the upgraded system. This guarantees that following system launch, inventory management and the procurement-to-payment cycle function properly.

Table 6. Status of master data collection: MM

Module	Category	Code of Company	Factory Location	PIC	Date of Confirmation & status	Deadline	import to the system
MM	Material master	0001	2567	Technical team	Not Started	15-Feb-26	Tba
MM	Material master Purchasing	0001	2567	Purchasing	Not Started	15-Feb-26	Tba
MM	Vendor Master	0001	2567	Purchasing	Not Started	15-Feb-26	Tba
MM	Purchase Info Record	0001	2567	Purchasing	Not Started	15-Feb-26	Tba
MM	Payment term	0001	2567	Finance	Not Started	15-Feb-26	Tba

3.3.4. Production and planning

A production planning unit test in the context of an SAP upgrade is the process of testing certain features and procedures inside the SAP PP (Production Planning) module to make sure they continue to function

properly following the update. Changes made to the system settings, parameters, and master data configurations that govern the operation of production planning procedures are referred to as a production planning system configuration update in SAP (or any ERP system). These changes are frequently necessary for an optimization project, business process modification, or SAP upgrading. Several tasks are involved, such as the BOM (Bill of Materials), routing or work center, and master data alterations in the material master field (planning strategy, lot size, MRP type).

The planning approach update is the next method for controlling demand (production to inventory versus production to order). The forecasting model and PI (Planned Independent Requirements) are included. The MRP setup includes the MRP controller, planning horizon, lot sizing procedure, safety stock, and reorder point parameters. Capacity planning settings include things like work center capacity, shift definition, and scheduling criteria. The planning guidelines for restricted or limitless capacity have also been updated. Integration points are implemented between PP and MM (procurement), SD (sales order), and FICO (costing) to ensure configuration alignment across modules after an upgrade.

The master data collection status in SAP production planning (PP) refers to the preparedness and completeness of crucial master data needed for planning and execution, as Figure 5 illustrates. Because MRP procedures, production orders, or capacity planning may fail because of missing or inconsistent master data, this state is especially crucial during configuration upgrades or updates.

Table 7. Status of master data collection: PP

Module	Category	Code of Company	Factory Location	PIC	Date of Confirmation & status	Deadline	import to the system
PP	Material master Basic Data	0001	2567	Technical team	Data Collection	17-Feb-26	Tba
PP	Material master MRP	0001	2567	Logistic	Data Collection	17-Feb-26	Tba
PP	Material master Work Scheduling	0001	2567	Logistic	Data Collection	17-Feb-26	Tba
PP	Bill of material	0001	2567	Technical team	Data Collection	17-Feb-26	Tba
PP	Routing	0001	2567	Technical team	Data Collection	17-Feb-26	Tba
PP	Work centre	0001	2567	Technical team	Data Collection	17-Feb-26	Tba
PP	Routing	0001	2567	Technical team	Data Collection	17-Feb-26	Tba

3.4. Deployment

The deploy step is the last phase in SAP's Activate approach before the solution is completely functional. It is where all the planning, implementation, and testing come together to support business users during the transition and put the improved SAP system into production.

In an SAP upgrade project, the completion of the FICO unit tests and the verification of the configuration list frequently signify the achievement of two objectives, completion of the FICO unit test and the unit tests for SAP FI (Financial Accounting) and CO (Controlling) have been finished. Every test case after the upgrade confirms the necessary processes, such as general ledger recording, transactions pertaining to accounts payable or receivable, as well as calculations for asset accounting depreciation, allocations to profit and cost centers. Integration with MM (procurement) and SD (sales). Second, the completion status indicates that all planned test cases have been finished or that issues have been identified and resolved.

The sales and distribution (SD) module have successfully completed the unit testing phase, and the baseline configuration has been verified when you state that the SD unit testing is finished, and the configuration list is confirmed in an SAP upgrade project. SD Unit Testing Completion SD unit testing guarantees that, following the update, all essential processes are operating as intended. Sales order processing, which entails generating, altering, and canceling sales orders, is a common test case. The process of establishing shipments, selecting, packing, and issuing items is known as shipment processing. Creating invoices, credit and debit memos, and posting to FI are all part of billing. Condition notes, discounts, surcharges, and tax calculations are all part of pricing. During order creation, credit checks are part of credit management. SD with MM (availability check), SD with FI (billing posting), and SD with PP (production to order) are examples of integration testing.

The statement MM unit test complete and configuration list confirmed, in an SAP upgrade project, it indicates that the material management (MM) module has successfully completed the unit testing stage and that the fundamental configuration has been verified. Unit testing in MM guarantees that, following the upgrade, all essential inventory and procurement procedures operate as intended. The Procurement Cycle (purchase requisition versus purchase order versus items receipt versus invoice verification) is an example of a typical test case. Inventory management (stock changes, transfer posting, and goods issuance). Material master update (MRP field validation, material creation or modifications). Vendor master data (FI integration, vendor creation, and changes). Pricing and terms (contracts, terms, kinds, and purchase information records).

Integration tests, MM versus PP (material requirements planning), MM versus SD (stock availability), and MM versus FI (invoice posting).

The production planning (PP) module has successfully completed the unit testing phase, and the baseline configuration has been validated when you state that PP unit testing is over, and the configuration list is confirmed in an SAP upgrade project. PP's unit testing guarantees that all essential planning and execution procedures function properly following the upgrade. Material requirements planning (MRP), which executes MRP and confirms anticipated orders, purchase requisitions, and stock levels, is an example of a typical test case. Planned independent requirements (PIR) are tested by demand management and then sent to MRP. Rescheduling, overload checks, and work center capacity validation are all parts of capacity planning. The process of creating, releasing, scheduling, verifying, and releasing goods for production orders is known as production order management. Lot sizing and scheduling, which includes scheduling lead times, backtracking or forward scheduling, and verifying lot size regulations. Integration testing compares PP to MM (procurement), PP to SD (sales orders), and PP to FI or CO (costing).

3.3.5 Run, Go Live and Support

The run, go-live, and support phases are the last steps in SAP upgrading projects that guarantee the improved system is stable and fully functional for business use. They concentrate on execution, stabilization, and long-term support while adhering to the deploy step. Figure 2 shows accessing the SAP system (systems, applications, and products in data processing), which is frequently utilized for enterprise resource planning (ERP), is typically referred to as logging in to SAP.

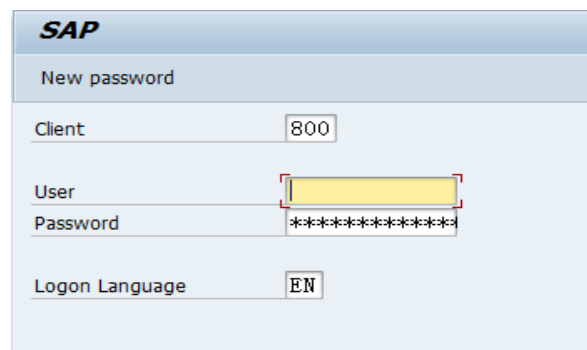


Figure 2. Login to SAP

Go-live support, also known as hypercare [22], is the crucial stage that occurs just after the system goes live in an SAP upgrading project. ERP system implementation is examined from the perspectives of organizational learning and knowledge management as well as process [23]. Difficulties implementing ERP systems, especially when it comes to effectively and efficiently managing inventory [24]. There is still not much discussion about SAP ERP post-implementation papers [25]. Its goals are to improve user confidence in the enhanced environment, stabilize operations, and swiftly resolve problems. A hypercare team, problem management, user support, system monitoring, knowledge transfer, and stabilization must be established during the go-live support phase.

Users have an incredible experience after moving from Public Cloud to Private Edition. Although the front-end access currently combines both SAP GUI and Fiori, the legacy version of SAP S/4HANA Cloud PE Private Edition still uses Fiori as its user interface (UI). The new edition offers an expanded line of business processes and a fully functional core ERP in terms of functional scope. This version enables unlimited customization, modification, and extensibility in contrast to previous editions. SAP's Service Level Agreement (SLA) has significantly improved from 99.5% to 99.7%, indicating that the most recent version offers a greater SLA guarantee. The most recent version now supports services for all industries, whereas the previous version only supported services for trading companies, financial management companies, service management companies, and simple discrete production companies.

Reevaluating the degree of data security established to shield digital data from theft, abuse, illegal access, and destruction during its lifecycle is essential after installation. This system uses several protection mechanisms, including encryption, access control, and backup, to guarantee that data stays safe. Disaster recovery plans include maintaining backup systems and failover procedures to reduce downtime and conduct business impact assessments. Identify and prioritize key workloads for migration as part of the business

continuity process. Capacity planning, which includes estimating compute, storage, and network needs before and after migration, is critical for measuring cloud infrastructure readiness.

4. Conclusion

The SAP ERP upgrade process and SAP S/4HANA, the most recent version of SAP's business suite software, are covered in detail in this article. Preparation, exploration, realization, deployment, and go-live are all steps in the SAP upgrade or implementation process. Every step of the procedure, including the first meeting to set goals, constraints, due dates, and roles, is covered in detail in this article. At this point, the project organization which includes a milestone plan outlining work stages, progress, and project status emerges.

Through training and the use of pre-existing templates, the exploration phase then gives users a thorough understanding of SAP. Members of the project can use the generated open issue list to address any problems. The cutover and go-live procedures in an SAP upgrade project come next, followed by realization, which entails importing master data, and lastly the go-live procedure. This change emphasizes the transition from "cloud-first" to "cloud-appropriate," which refers to the deliberate placement of workloads in environments that best meet performance, compliance, and cost needs. Private clouds are more important for governance, compliance, and data protection, making this an important field of study.

Particularly for mission-critical applications, private clouds can provide higher workload efficiency, reduced latency, and performance optimization as compared to public clouds. Additionally, if public cloud costs rise, private clouds may be just as efficient or even more economical, particularly for workloads that are ongoing. The authors' recommendations for future research include developing predictive models to compare the long-term financial impact of public versus private cloud adoption, as well as investigating the best workload distribution between public and private clouds to balance flexibility and control.

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