CHAPTER 1

An Overview of SAP S/4HANA

SAP S/4HANA is the next generation of SAP business suite software. It is the digital core of your organization and is designed to run an intelligent enterprise. Many SAP ECC customers are planning their transitions to SAP S/4HANA. Many SAP ECC customers aren't sure which deployment option to use in order to move to SAP S/4HANA. There are three different approaches for moving to SAP S/4HANA. You must consider the different scenarios and choose from the three deployment options—on-premises, cloud, and hybrid.

This chapter covers two broad deployment options—cloud and on-premises. These two options differ in terms of the degree of standardization and the degree of flexibility. The on-premises option is not as flexible and the level of standardization is higher with the cloud version. Every customer has to decide based on their own preferences and their flexibility and standardization needs. SAP recommends more standardization, as it reduces the total cost of ownership in the long run.

Cloud Options

This section covers the SAP S/4HANA cloud options.

RISE with SAP S/4HANA Cloud

This "public cloud" solution (previously called SAP S/4HANA Cloud, Essentials Edition) is highly standardized. Services are delivered to customers over a network generated from a multi-tenant server. "Multi-tenant" means that two or more tenants (customers) share the bandwidth of one server. This multi-tenant server resides in an SAP data center. Your cloud provider (SAP) is responsible for maintaining the technical backend of

the system and for running your software service in the server where your tenant resides. RISE with SAP S/4HANA Cloud has the fastest innovation, meaning regular release cycles, where new features and enhancements are released. SAP maintains customers' systems with bi-weekly hotfixes and installs the release upgrades to customer systems on a defined release schedule.

RISE with SAP S/4HANA Cloud has the lowest total cost of ownership (TCO), due to its increased standardization. The solution is delivered with the RISE with SAP business transformation services. If you have subscriptions to multiple solutions in addition to SAP S/4HANA Cloud (e.g., SAP SuccessFactors, SAP Concur, etc.), you will have an individual tenant for each software server that may or may not reside in the same data center as your SAP S/4HANA Cloud ERP solution. An existing ECC system cannot be moved to RISE with SAP Public Cloud. This solution is suitable only for new implementations.

RISE with SAP S/4HANA Cloud, Private Edition

RISE with SAP S/4HANA Cloud, Private Edition is a cloud solution with the full SAP S/4HANA on-premises scope. It has the elasticity, resilience, and TCO of a cloud infrastructure. Existing SAP ECC customers can convert their SAP ECC systems to a RISE with SAP S/4HANA Cloud, Private Edition. New customers can also choose this option for their new implementation. RISE with SAP S/4HANA Cloud, Private Edition is suitable for new implementations and for system conversion.

Customers have full access to the extensibility framework; it also supports in-app and side-by-side extensions in addition to code enhancement and modifications. Expert configuration is possible with full IMG access, and the operating expense model is subscription-based. The solution is inherently deployed with SAP HANA Enterprise Cloud to provide a private cloud infrastructure and technically managed services. However, customers can choose where their solution is hosted: on an SAP data center or a hyperscaler data center. Hyperscaler data center providers include Alibaba Cloud, Microsoft Azure, Google Cloud Platform, and Amazon Web Services. SAP S/4HANA Cloud, Private Edition is delivered with RISE with SAP services in addition to the core ERP scope to support a customer's business transformation to the cloud. All services— from RISE to infrastructure management, to the core software—are delivered under one contract with SAP. Even if your solution is in a hyperscaler data center, all services are under one contract with SAP.

Key Features

Key features of the SAP S/4HANA Cloud, Private Edition, include the following:

- Full functional S/4HANA scope

- Existing ECC system can be moved to the Cloud Private Edition

- Safeguards prior investments into SAP systems

- Flexibility and extensibility

- Access to the S/4HANA extensibility framework

SAP S/4HANA Cloud, Extended Edition

SAP S/4HANA Cloud, Extended Edition is a cloud solution based on standardized business processes, but also includes the extensibility and geographical reach of the SAP S/4HANA on-premises solution. Services are delivered to customers over a private network protected by a firewall from a single-tenant server. "Single tenant" means that only one tenant (customer) uses the storage and bandwidth of one server. This single-tenant server can reside in your own data center, or in a data center owned by a vendor. SAP S/4HANA Cloud, Extended Edition has semi-annual (twice yearly) upgrades and is hosted in SAP's private, managed cloud, the SAP HANA Enterprise Cloud (HEC). SAP S/4HANA Cloud, Extended Edition is well-suited for customers that require specific functionality, broader extensions, and deeper configuration capabilities in a dedicated cloud environment. Additional capabilities are allowed, because a customer is the only tenant on the server. As a cloud solution, it is also easily scalable and has a low total cost of ownership (TCO).

Key Features

Key features of the SAP S/4HANA Cloud, Extended Edition include the following:

- Standardization, functional scope, and extensibility

- Semi-annual upgrades

- Configurable and customizable processes

- SAP S/4HANA Extensibility Framework and extensions via SAP Cloud Platform (SCP)

- All industries supported

- Low TCO and fast time to value

- Subscription licensing

On-Premises Options

SAP S/4HANA on-premises is suitable for customers that require maximum control of their SAP systems. It can be hosted usually in your own data center or with an IaaS provider. This solution is best for customers who want full control and ownership of their application and landscape. It provides a broad level of functionality with a maximum degree of flexibility in customization.

Customers can configure, extend, and modify their software, with full access to the SAP HANA database and development tools. SAP S/4HANA on-premises has an annual release cycle, where customers can choose to adopt new innovations on their schedule. Customers can choose to deploy the SAP S/4HANA solution in their preferred infrastructure, with varying degrees of maintenance responsibilities depending on the infrastructure selected. SAP S/4HANA has perpetual licensing when deployed on-premises in a customer's own data center. It's subscription-based or bring your own license (BYOL) when deployed on the SAP HANA Enterprise Cloud or a third-party hyperscaler (e.g., Microsoft Azure, AWS, and Google Cloud Platform).

SAP S/4HANA Hosted in the Customer's Data Center

This is the classic "on-premises" deployment option, where the customer has their own hardware and is responsible for maintaining its infrastructure, including purchasing, installing, configuring, and managing the software.

SAP S/4HANA Hosted by an IaaS Provider (Hyperscaler) Data Center

The SAP S/4HANA on-premises solution is hosted in a non-SAP infrastructure as a service (IaaS) provider data center (private cloud). We refer to these third-party IaaS providers as *hyperscalers*. They deliver a computing infrastructure, provisioned and managed through the Internet. The Infrastructure as a Service (IaaS) provider is

responsible for maintaining the infrastructure, and the customer is responsible for purchasing, installing, configuring, and managing the software hosted in the cloud (operating systems, middleware, and applications).

SAP S/4HANA Hosted in SAP HANA Enterprise Cloud (HEC) in an SAP Data Center

The SAP S/4HANA on-premises solution is hosted in a private, SAP-managed HANA Enterprise Cloud and deployed on an SAP data center. SAP HEC is an IaaS platform with managed services delivered by SAP to support SAP applications and solutions. The managed services include coordination and management of the entire cloud solution landscape, including infrastructure, systems, technology, and applications.

SAP S/4HANA Hosted in SAP HANA Enterprise Cloud (HEC) in a Hyperscaler Data Center

The SAP S/4HANA on-premises solution is hosted in the private, SAP-managed HANA Enterprise Cloud, which is deployed on a hyperscaler data center. SAP provides customers who choose this option with the same comprehensive managed services for HEC in a non-SAP data center as HEC in an SAP data center. SAP operates and manages the customer's SAP systems in the HEC private, managed cloud with the IaaS provider of their choice. This is all under one contract with comprehensive responsibility.

Choosing a Deployment Option

The path/approach you choose to move to SAP S/4HANA is one of the key factors that influences your choice of deployment. There are three different approaches to moving to SAP S/4HANA:

- New implementation
- System conversion
- Selective data transition

Which approach is right for you?

System conversion should be considered when:

- The business is focused on incremental innovation projects.

- The IT software landscape requires the retention of past customizations.

- All data needs to be retained.

A new implementation should be considered when:

- When existing business processes do not support long-term strategies.

- The business wants to standardize on SAP Best Practices packages.

- The existing system does not meet the SAP S/4HANA conversion prerequisites. (The system is not technically and functionally fit for conversion.)

Organizations using other than SAP will consider this option to move to SAP S/4HANA. Customers running SAP ECC Business Suite and want to move to SAP S/4HANA can also consider this option in order to completely redesign their processes.

The selective data transition option should be considered when:

- The business needs to go live in phases.

- Existing SAP ERP instances need to be split or merged.

- You want to migrate only specific years of data or specific company codes.

SAP S/4HANA Move Planning Tools

There are different tools that simplify your journey to SAP S/4HANA:

- SAP Readiness Check for SAP S/4HANA

- Process Discovery Transformation (SAP Business Scenario Recommendations)

- SAP Transformation Navigator

- SAP Fiori App Recommendation Report

SAP Readiness Check for SAP S/4HANA

The SAP Readiness Check is one component of the RISE with SAP services for a system conversion to RISE with SAP S/4HANA Cloud, Private Edition. It assesses the functional and technical aspects of the existing SAP ECC system to convert it to SAP S/4HANA. This assessment provides insight into mandatory application changes, and potential impacts are detailed in relevant simplification items along with conversion prerequisites, such as the compatibility of existing add-ons and business functions. The tool assesses the many functional and technical aspects to identify system readiness for conversion. For example, custom-code compatibility, system sizing and data volume management, inconsistencies in financial data, and so on.

Process Discovery Tool

The Process Discovery Transformation tool has replaced SAP BSR (Business Scenario Recommendations). Process Discovery is a free analysis tool. This helps SAP ECC customers and partners drive innovation and adoption.

Process Discovery consists of two components

- Process Discovery summary

- Process Discovery solution (Spotlight)

Customers can request their own Process Discovery. Refer to SAP Note 2758146 and SAP Note 2745851. The analysis in the online solution will be delivered to customers along with a PDF document as an executive summary.

SAP Transformation Navigator

This is a self-service tool that provides guidance for your digital transformation. It assesses the existing landscape and industry trends. It delivers a report that contains recommendations of the SAP products and solutions required to plan and realize your digital strategy.

SAP Fiori App Recommendation Report

This tool provides the SAP Fiori apps that you need on an SAP S/4HANA system.

Conclusions

Every customer has a unique set of goals and challenges when considering their move to SAP S/4HANA. The SAP Move program is designed to support customers in moving to SAP S/4HANA in the most non-disruptive way possible. SAP Partners also offer guidance to tackle critical moments and offer customers complete control over their transition.

Overview of SAP S/4HANA

SAP S/4HANA is an integrated business suite that supports end-to-end business processes. It helps manage employees, vendors, customers, products, accounting, finance, logistics and more. This new business solution provides a 360-degree view of any line of business with the support of embedded analytics; it enables users to make faster and smarter decisions using the functionalities and capabilities of this new next-generation business solution.

Based on the business process, customers can implement robotic process automation and gain benefits of that in business processes. Predefined SAP content helps reduce the effort in customizations of ML (machine learning) models. This helps customers jump-start intelligent technologies in almost all business processes.

In SAP ECC, the FI/CO applications were separated into two components as Finance and Costing (Controlling/Management Accounting—CO). In SAP S/4HANA, these two components are brought together and called SAP S/4HANA Finance.

In SAP ECC, every component had its own data model, which leads to inefficiencies as there are integration issues. But using SAP S/4HANA, SAP S/4HANA Finance is completely redesigned, with the inefficiencies removed. SAP S/4HANA delivers new experiences to users with Fiori apps. This improves the efficiency and productivity and leads to job satisfaction for the users. The data model of SAP S/4HANA has been simplified comparatively to SAP ECC. This simplifies the application configuration, design, and extensibility. This new solution helps with digital transformation.

SAP S/4HANA sits on SAP HANA and inherits the following capabilities:

- In-memory databases
- Data compression
- Real-time processes
- Dynamic analysis

- Integration reporting

- New user interface, called SAP Fiori

It has a simplified data model that avoids redundancy and helps reduce the data footprint by removing unnecessary tables. It supports both OLTP and OLAP processing from a single data model and, therefore, ETL to a separate system not needed for reporting.

Capabilities of SAP Accounting Powered by HANA (SAP S/4 HANA Finance)

SAP S/4HANA Finance, formerly known as Simple Finance, is a reworked application code of SAP ERP Financials, primarily released around 2014. It comes with a diverse classification of "simple" that pinpoints not only an automated but a well-structured database and architecture. This new solution helps Finance and Accounting teams lead the digital transformation.

In SAP ECC, SAP FI&CO was divided into two components:

- Financial Accounting (FI)

- Controlling Management Accounting (CO)

Finance and Costing have subcomponents. For example, Asset Accounting. Every subcomponent had its own database tables and data model architecture. The SAP ECC data model led to inefficiencies in integration and reporting. SAP S/4HANA has a simplified model and lightweight architecture that works on such incompetence.

For instance, with SAP S/4HANA, the legal/local/internal/consolidated reporting has been simplified. You can maintain multiple accounting principles, like US GAAP (the United States Generally Accepted Account Principles) and IFRS (International Financial Reporting Standards), along with local legal reporting for any country. Accounting and Finance teams can therefore save a lot of time in maintaining books when using multiple accounting standards.

Converting an SAP ECC System to SAP S/4HANA

Existing SAP ECC customers can convert their ECC and move to SAP S/4HANA with the following advantages. In fact, customers can change the current system into an SAP S/4HANA system. (Database, NetWeaver, and Application Transition) in one step and then benefit from the following:

- Conversion without re-implementation

- No disruption for existing business processes

- Revaluation of customization and existing processes

Advantages of the SAP HANA Technology

SAP HANA helps your business grow seamlessly in the digital economy. It provides key benefits, not limited to simplification and centralization. These include ease of use, improved speed, transition, innovation, and a cloud experience. SAP S/4HANA can transform business and IT functions using intelligent automation, with remarkable results:

- Reduce your data footprint

- Choice of deployment

- Large data sets can be worked on at one time

- Increased performance

- Simplified infrastructure

- Embedded analytics

Advantages of SAP S/4HANA

Improvements in the Data Model

Modeling refers to an activity of filtering or cutting data in database tables by forming information that portrays a business scenario. You can use this information for any reporting and decision-making purposes in your management and integrated business

departments. A data model is a relation between the set of tables and the tables that are used. A simplified data model means that the tables and their sets are simplified. Further, a few improvements in S/4HANA data model are

- Use of columnar tables

- Fewer indices and aggregation tables

- ACDOCA – universal journal entry table

The concept of UJE was first launched with SAP S/4HANA Finance. With every product, it gets better. With eliminated data, it has reduced footprints and table designs.

It is one database table that includes fields from submodules. For example, CO, AA, ML, COPA. It has more than 360 fields related to such submodules, making integration simpler for multi-dimensional reporting.

It stores old data from FAGLFLEXT and FAGLFLEXA and Index Table values are stored in ACDOCA. It stores actual data.

Advantages of the New Data Model

- It is a single source of truth for all accounting-integrated components.

- It is a simple but complete data model.

- It combines and complements the best qualities of all accounting components.

- It provides a non-disruptive simplification.
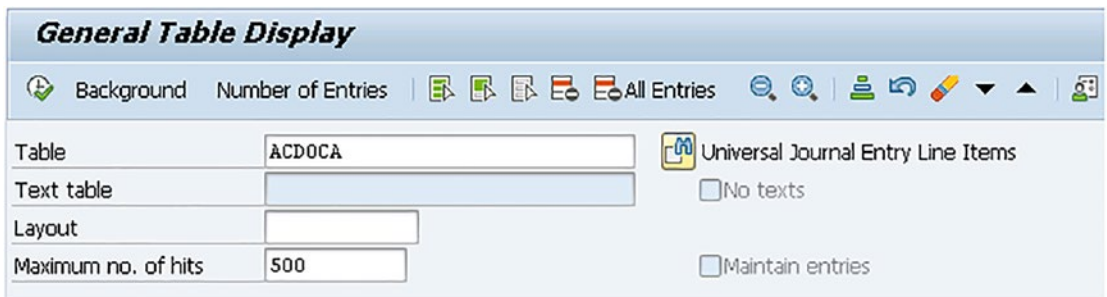
Figure 1-1. *The ACDOCA table*

Planning Table

ACDOCP is for planned data. (See Figures 1-1 to 1-3.) Planning is one of the key processes in Controlling. Since Version 1610, it has been possible to store the plan results in the ACDOCP table. ACDOCP has the same structure as the ACDOCA table.

Transactions that have been removed but are frequently used can still be used in SAP S/4HANA:

- KP06/KP07 (cost center planning)

- CJ40/CJ42 (overall planning on projects)

- CJR2/CJR3 (project planning)

- KPF6/KPF7 (order planning)

While you can still use old transaction codes for planning purposes, such as project planning/cost center planning/order planning, the plan data will be stored in the old tables, not in ACDOCP. Analytical apps that come from recent releases do not read plan data from the classical tables, only from ACDOCP.
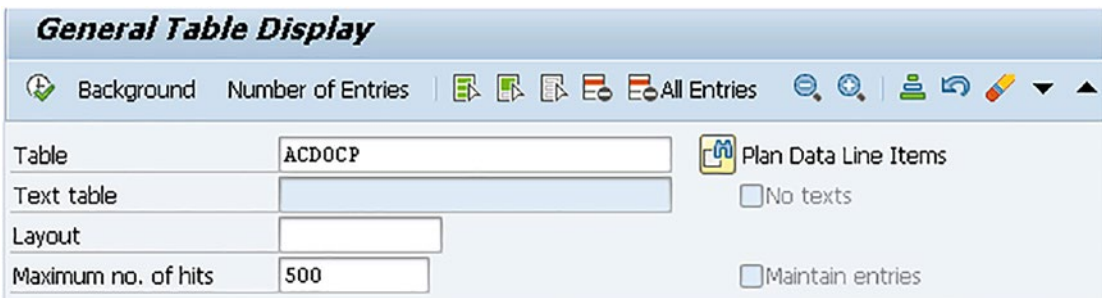
Figure 1-2. *The ACDOCP table*

Similarly, ACDOCAU is a central table for group reporting,
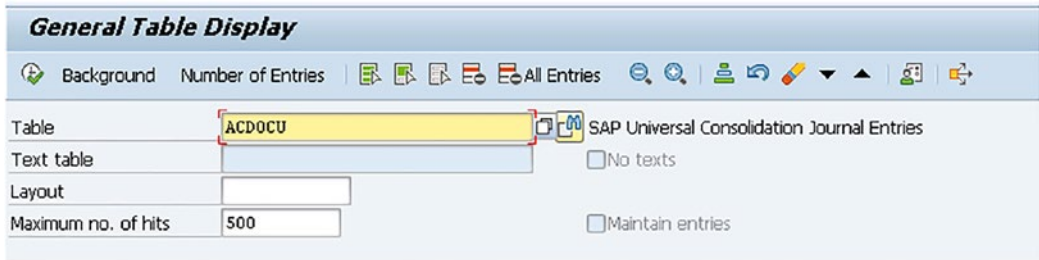
Figure 1-3. *The ACDOCU table*

Fixed Asset Accounting

Asset Accounting is a significant area of Finance. Fixed Assets represent the largest part of the balance sheet for capital-intensive companies/industries.

Creating synergy between asset management and the general ledger is better for the company's balance sheet accuracy. So FI-AA Integrated Asset Accounting data is stored in the ACDOCA table. This has eliminated many index and total tables and reduced data redundancy. With the FI-AA integration table design, there is no need for reconciliation between the general ledger and Asset Accounting.

After migrating from ECC to SAP S/4HANA, customers can view their data and all the old reports will work. Previous fiscal years' reporting is possible, as old tables become available as compatibility views.

As a part of a period end activity, Reconciliation with Asset Accounting is not needed any longer (see Figure 1-4).
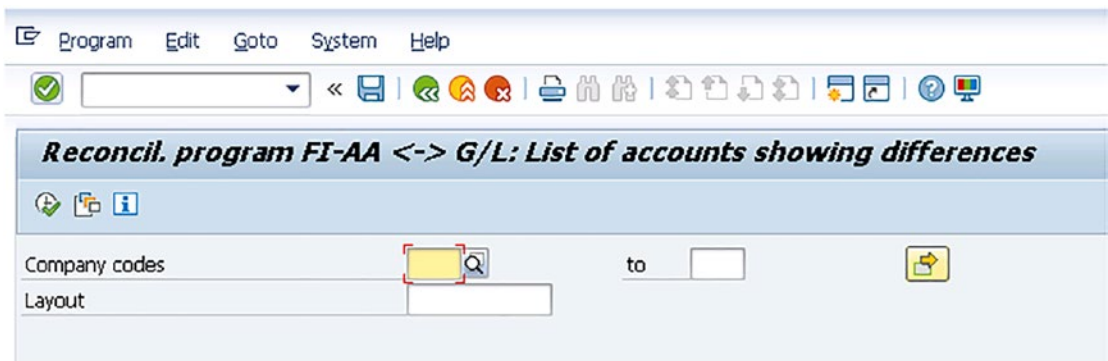

Figure 1-4. *Tcode ABST2, reconciliation for FI and AA*

As GL and AA post to the ACDOCA table, the ABST and ABST2 transaction codes are no longer needed (see Figure 1-5).

Figure 1-5. *Consistency check for GL and AA*

Transparent Depreciation Areas

One depreciation area per valuation is needed and delta areas are no longer needed (see Figure 1-6).

Figure 1-6. *Depreciation areas*

One Document per Valuation

Accounting principles are assigned to separate ledgers, so accounting principle-specific documents will be posted for each accounting principle (see Figure 1-7).
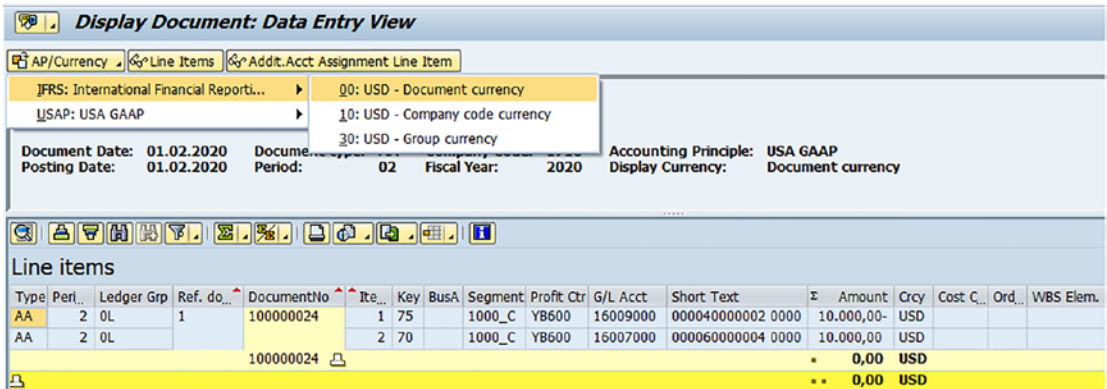
Figure 1-7. *Accounting principle-specific documents display*

Ledger and Accounting Principle Postings

Transaction code AB01L can be useful for ledger/accounting principle postings (see Figure 1-8).
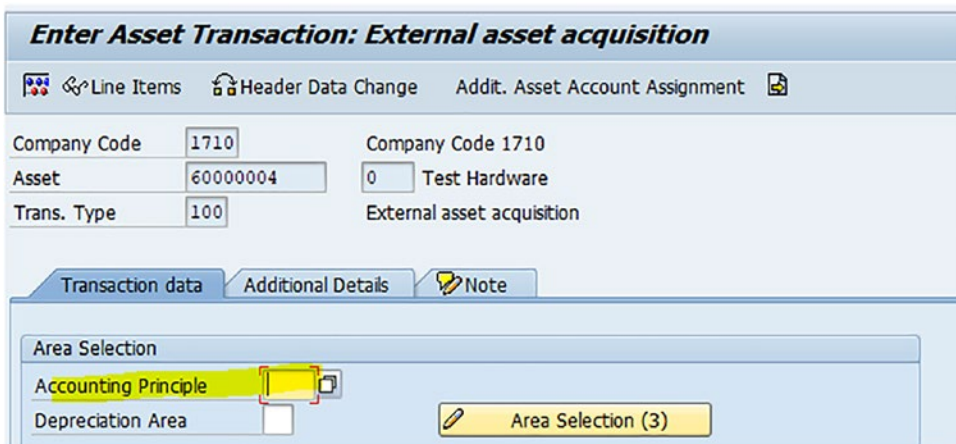

Figure 1-8. *Transaction AB01L*

S/4HANA Cash Management

S/4HANA Cash Management helps to manage cash and liquidity. This new solution includes Bank Account Management (BAM) and Cash Management. This application is a big improvement over ERP. It offers a better user experience, which is based on Fiori.

It includes:

- Business processes related to manual memo records

- Business processes related to check management

- Electronic bank statements

- Business processes related to bank account management

- Cash operations

- Liquidity management

Bank Relationship Management

Bank Account Management had typical pain points. For example, lack of transparency resulting in encounters during governance and a compliance audit, unmanageable manual management, lack of integration, and decentralized bank relation processes. But with SAP S/4HANA, it delivers simplified regulatory reporting, shortened audit processes, bank account rationalization resulting in reduced costs, and more.

It aids central bank accounts management. For example, workflow processes such as bank account opening, closing, and adjustment, and analysis of cash position of bank accounts.

Transfer Prices

A *transfer price* is a price that is determined when a good or service is transferred between units of two independent organizations. The price can be market price, or cost of goods manufactured plus markup, or a negotiated price. SAP S/4HANA introduced the Transfer Price Solution in the core S/4HANA.

Business Partner Approach Now Mandatory

The customer/vendor master creation in XD01 and XD01 is obsolete. The business partner approach is now mandatory in SAP S/4HANA. To maintain customer and vendor master data, there is a single transaction code that can be cast off. The relations among business partners and customers/vendors are mapped through different business roles and the account group is mapped through grouping. The number range can be set as per the requirement of the client.

Accrual Engine

The accrual engine enables you to automatically calculate accruals in the general ledger. As of SAP S/4HANA 1809, this functionality is included (see Figure 1-9).
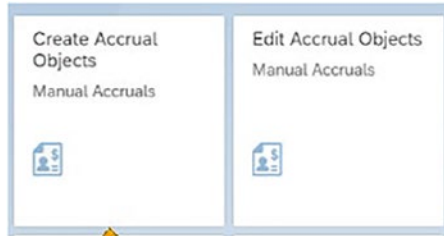

Figure 1-9. *Monitor GR/IR account reconciliation – SAP Fiori app*

Monitor GR/IR Account Reconciliation is an analytical app that you can use to analyze the GR/IR open items. For purchasing documents, such as Purchase Orders and Delivery Notes, KPIs are displayed. When deeper analysis is needed, you can navigate to a list of GR/IR clarification items and investigate the details or even start with processing purchase order items that don't match goods receipts and invoice receipts (see Figure 1-10).

Figure 1-10. *Monitor GR/IR Account Reconciliation*

Flexible Workflow

This functionality that allows you to define condition-based workflows for a one-step or multi-step approval process according to the customer's requirements for purchase requisitions and orders.

MRP Live

The MRP Engine, also known as MRP Live, is MD01N. The MRP Engine reads all the required elements and helps you take necessary actions. For example, it reads the Purchase Order or the Stock Transfer Order and helps you procure purchase requisitions in a single database procedure. This way, the transfer of data from the database to the application server is reduced.

Lean Service Procurement

Lean Service Procurement simplifies the service procurement process by simplifying the process of booking service entry sheets. There is no longer a need to create a service master with the introduction of a new material type SERV in the material type configuration.

OLAP and OLTP Together

These are now core business processes. They help make the processing more competent (see Figure 1-11).

Figure 1-11. *Example of SAP Fiori Analytical apps*

SAP S/4HANA Financial Closing Cockpit

The Financial Closing Cockpit application is a part of complex closing processes; it's available in SAP S/4HANA (see Figure 1-12).
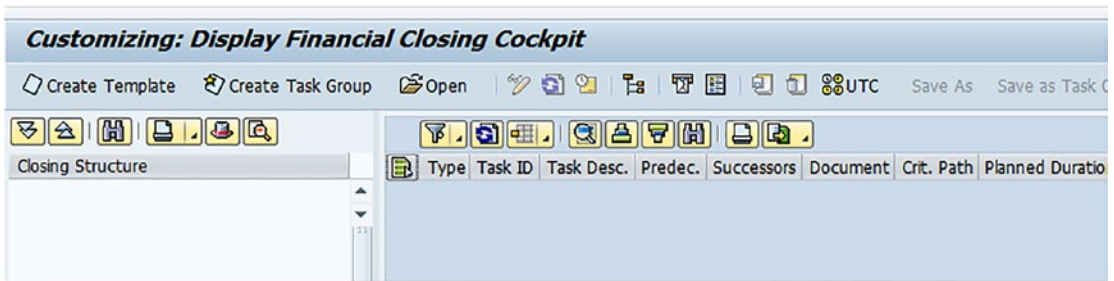
Figure 1-12. *Financial Accounting Closing Cockpit screen*

New Depreciation Run

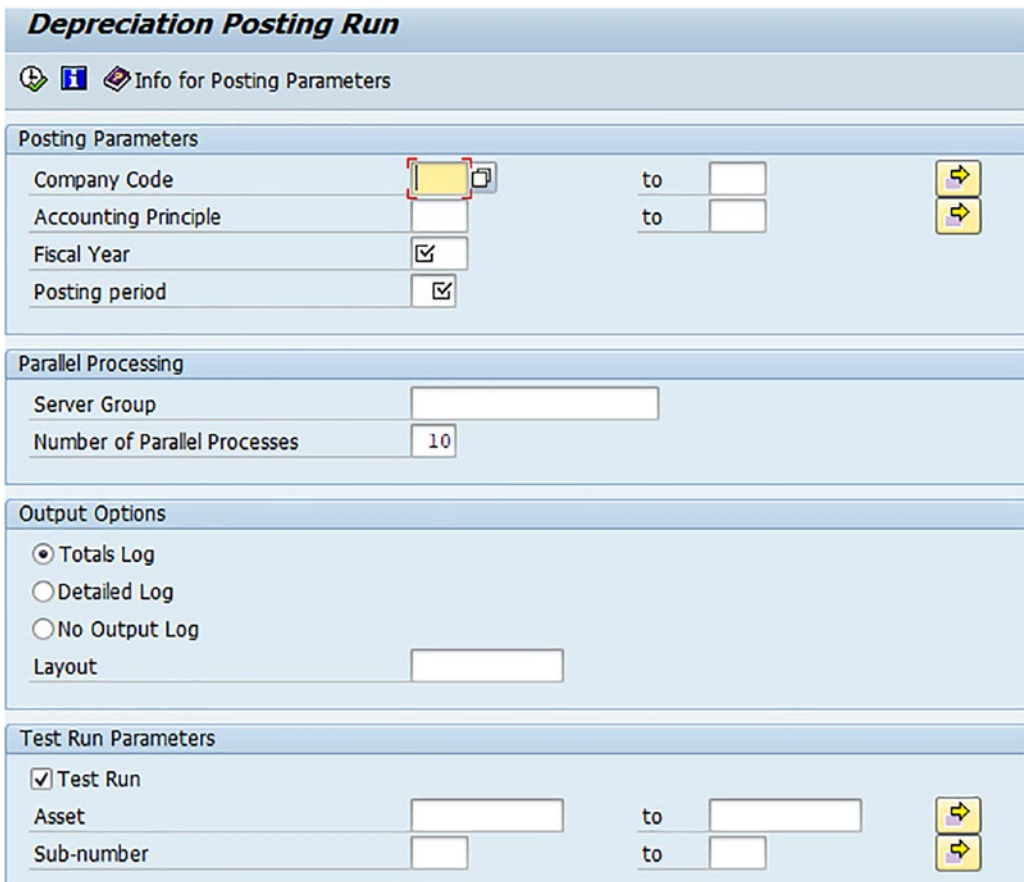In SAP S/4HANA, the depreciation screen has been simplified (see Figure 1-13).

Figure 1-13. *Depreciation Run screen*

FI-AR Based Credit Management Is No Longer Recommended

In SAP S/4HANA, the FI-AR-CR function (Classic Credit Management) is no longer available. It has been replaced with the functional SAP FSCM-based Credit Management (FIN-FSCM-CR).

SAP S/4HANA Sales

Before SAP S/4HANA, there were many pain points in the ERP platform, including the lack of real-time reporting, visibility through the entire process, and efficient and effective work. But with the flexible data model simplification, the document flow has been simplified.

Simplified Areas in SAP S/4HANA Sales

- The Business Partner approach replaces the ECC (ERP) SD customer master.

- FI-AR-CR Credit Management has been replaced with SAP S/4HANA Finance Credit Management.

- SAP SD Foreign Trade has been replaced with SAP S/4HANA International Trade Management.

- Financial Documents have moved from SD-FT to Trade Finance in Treasury and Risk Management.

- ERP SD Rebates has been replaced with SAP Condition Contract Settlement.

- SD-BIL-RR Revenue Recognition has been replaced with SAP Revenue Accounting.

- ERP LIS/ODP has been replaced with SAP S/4HANA Analytics: ODATA and Open CDS views.

Foreign Trade

The areas that were covered in GTS include

- Document payment

- Compliance for export procedures

- Preference management

SAP GTS should be used instead of the classical Foreign Trade functionality, which is not available in SAP S/4HANA. The functionalities that are covered in SAP S/4HANA are:

- International trade compliance
- International trade classification
- Integration with SAP global trade services
- Integration with SAP watch list screening
- Intrastat

Revenue Recognition

SD Revenue Recognition is not available in SAP S/4HANA. It has been replaced with the new functionality—SAP Revenue Accounting and Reporting (RAR).

Financial Consolidation Through Group Reporting

This new functionality supports Financial Consolidation. As different ERPs, local accounting standards, currencies, and so on, play a significant role in large companies/industries that have several objects, this is a compulsory exercise. Group Reporting supports computation and disclosure of consolidated reports and gives you data regarding the company performance and its corporate compliance.

SAP Fiori Apps

SAP Fiori is the user experience that replaces the classic SAP GUI. It provides capabilities to users to customize and adjust the screens that are used regularly in business function workflows. Fiori apps can be accessed through mobile phones, desktops, and tablets. The types of Fiori apps are as follows:

- Transactional
- Analytical
- Factsheet

SAP S/4HANA Deployment Options

A simplified data model and a new user experience accompany the cloud and on-premises deployment models. You get cloud as a consistent solution, comparatively with the SAP S/4HANA on-premises solution via subscription model license. The SAP S/4HANA Cloud Public Option has standardized business processes and may not allow customers to do changes extensively. The Private Cloud option leverages the full functional scope and extensibility.

Conclusions

In SAP S/4HANA, the main and core processes have not changed much. Rather they are optimized to support the business operations. This change helps with digital transformation. This transformation brings changes in the way they are executed. This brings improvement and efficiency of all lines of business operations.

Nowadays companies are keen to improve and optimize core processes and want to explore new business models. SAP S/4HANA supports this very easily. With SAP S/4HANA, top management can focus on core operational processes and need not worry about day-to-day operations.

The simplifications and innovations in the core business processes help management with critical business processes in all lines of business, including finance, sales, service procurement, manufacturing, supply chain and asset management, research and development, human resources, and so on. SAP S/4HANA provides a better view of any line of business with real-time data.

The important areas of simplification are inventory management, material requirements planning, capacity planning, sales and distribution, and procurement. This new version supports digital trends such as the IoT and business networks.

Logistics areas have been simplified, especially in three core areas: Plan-to-Product, Order-to-Cash, and Procure-to Pay.

Some of the components have been rearchitected;

- Material Requirements Planning

- Inventory Management

- Material Valuation (integrated to FI)

Last but not least, a unified core helps customers in many areas.

Cloud computing provides different services, such as data storage, networking, security, software applications, and BI, through the Internet and based on the subscription. This provides beautiful response times, data storage, reliability, security, flexibility, and lower IT costs.

Advantages of Cloud Computing

- Reliable

- Flexible

- Low investment

- Up-to-date technologies

Types of Cloud Computing Services

- Software-as-a-service (SaaS)

- Platform-as-a-service (PaaS)

- Infrastructure-as-a-service (IaaS)