

ERP & SAP S/4HANA Overview



Lesson Objectives

- Need for ERP
- What is ERP?
 - Example Scenario
- Business Challenges
- Examples of ERP
- ERP Software Package(SAP)
- History and Evolution of SAP
- SAP R/3 Architecture
- Introduction S/4HANA
- Advantages of S/4HANA
- What Makes S/4HANA so fast?
- S/4HANA Capabilities
- S/4HANA Platform and Deployment Option
- SAP Fiori- NEW User Experience
- SAP Fiori Design Paradigm

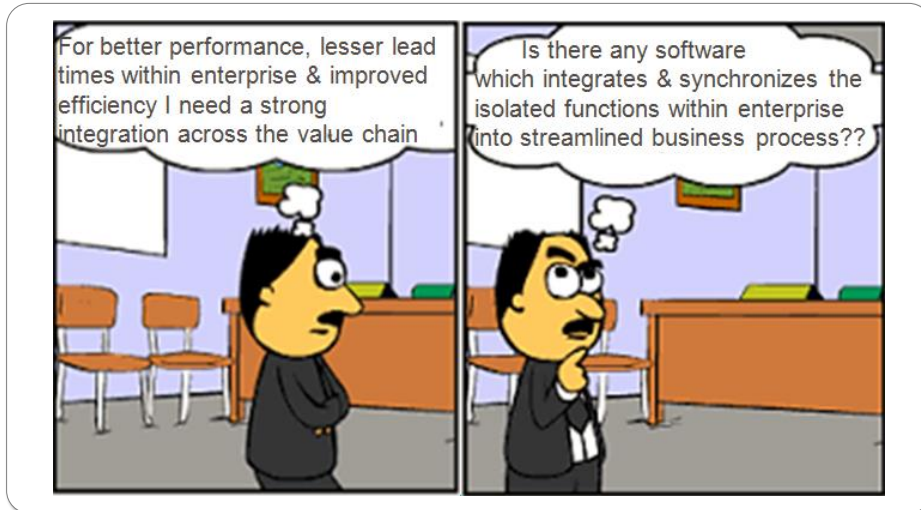
Lesson Objectives

- Different Types of Fiori Apps
- Transition to S/4HANA
- S/4HANA Enterprise Management
- Businesses on SAP
- Common Client Roles
- Additional Client Roles
- Sample SAP Landscape
- Transport Request
- Transport Migration
- Enhancement & Support Packages
- Different Types of SAP Packages
- Testing Phases in SAP Projects
- Customization
- Transaction Code/Fiori Tiles
- Ways of accessing an application

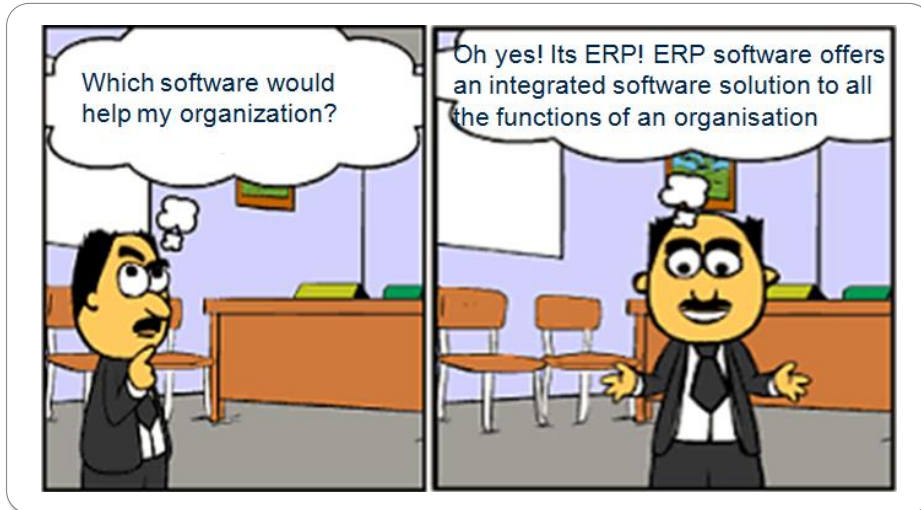
Need for ERP



Need for ERP (continued...)



Need for ERP (continued...)



What is ERP?

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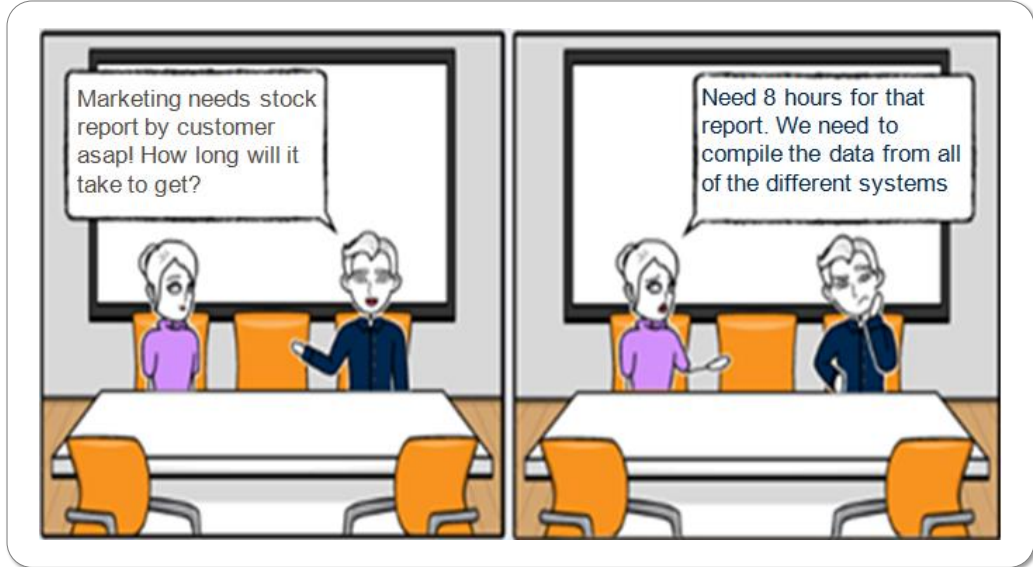
- ERP stands for Enterprise Resource Provides an integrated information storehouse where information needs to be stored only once & can be further processed & reported to anyone in the value chain
- A high-end sophisticated software that provides accurate, timely information for taking appropriate business decisions. Traditional application systems treat each transaction separately. They are built around the strong boundaries of specific functions that a specific application is meant to cater
- ERP stops treating these transactions separately as stand-alone activities & considers them to be the part of the inter-linked processes that make up the business



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Example Scenario

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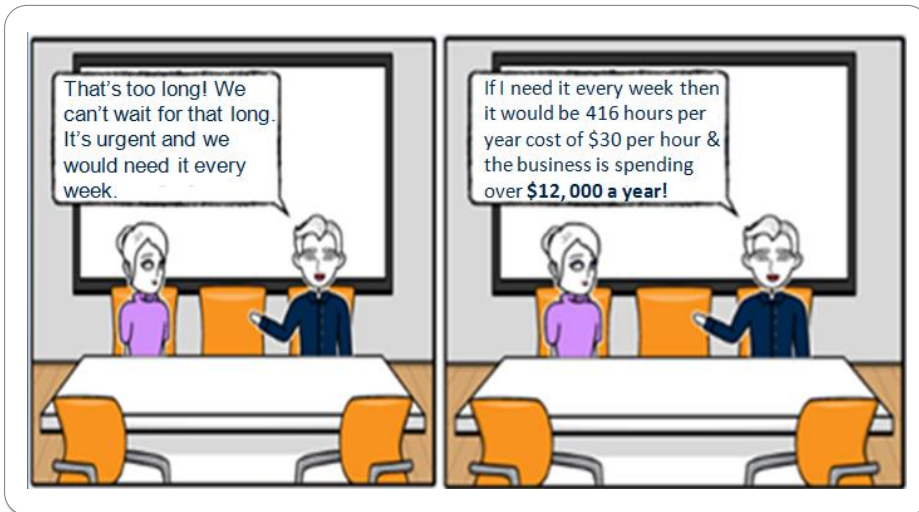


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Add the notes here.

Example Scenario (continued...)



What is ERP? (Continued...)

Add instructor notes here.

These long reporting hours and huge costs could be avoided with ERP In summary, in its most basic form an ERP system will bring core business functionality into one concise, integrated system that will save time, money and stress for you and your business



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Add the notes here.

Business Challenges



Spreadsheet Management



Remote Access



Complex & Time Consuming Processes



Slow System



Duplicate Data Entry



Inaccurate Reporting



Examples of ERP



ERP Software Package (SAP)



- SAP AG (a German Company) has developed an ERP package called SAP
- The company has over 437,000 customers in over 180 countries and 18,000+ partner companies globally
- SAP looked at the entire business as a single entity when developing this software has a number of Application Modules in the package
- Each of the modules has a number of components, each taking care of specific functionalities of any normal business

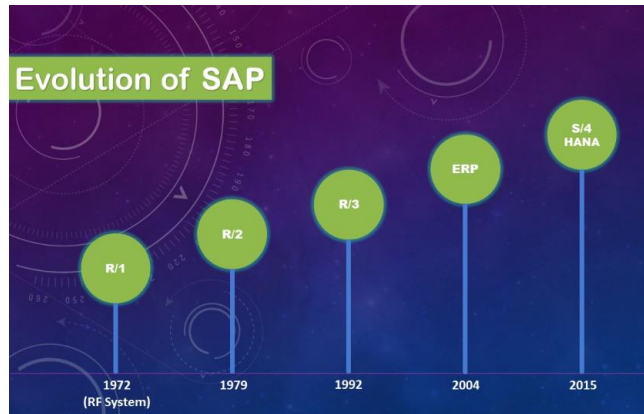


S - Systems
A - Applications
P - Products

History and Evolution of SAP



- SAP was started in 1972 by five former IBM employees with a vision of creating a standard application software for real-time business processing
- SAP stands for Systems Applications and Products in Data Processing. Since its inception SAP has issued several releases, such as SAP R/1, SAP R/2, and SAP R/3. The R in these releases stands for "Real-Time" data processing. The 3 in the R/3 stands for three-tier client-server architecture. Now it's become S/4HANA

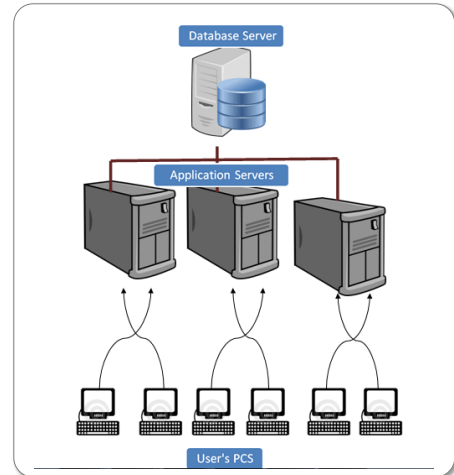


SAP R/3 Architecture



R signifies Real-time system. 3 represents 3-tier architecture

- SAP R/3 is a 3 tier architecture consisting of 3 layers
 - Presentation
 - Application
 - Database
- In simple words, it's a client server architecture SAP R/3 is the former name and it was renamed SAP ERP. It was later renamed Enterprise Central Component or ECC Successor software to SAP R/3 is known as SAP ERP Central Component (ECC)



3 Layers architecture in SAP



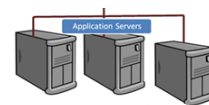
- **Presentation Layer:**

Contains the software components that make up the SAPGui (graphical user interface). Interface between the R/3 System and its users. The R/3 System uses the SAP gui to provide an intuitive graphical user interface for entering and displaying data.



- **Application Server:**

Application server is built to process business-logic. Workload is distributed among multiple application servers. With multiple application servers, the user can get the output more quickly. Application server exists at a remote location as compared to the location of the user PC.

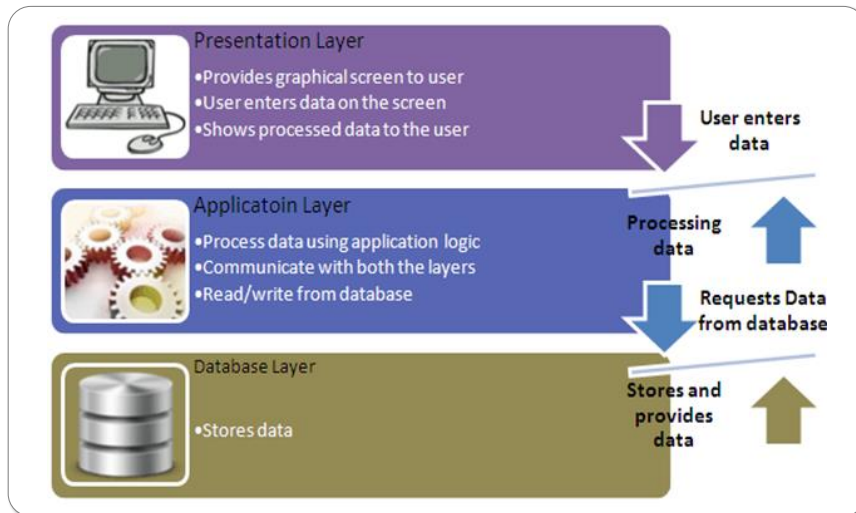


- **Database Layer:**

Consists of a central database system containing all of the data. In the R/3 System Database and Application may exist on the same or different physical location. SAP has manufactured its own database named HANA which is compatible with all major databases such as Oracle.



Diagrammatic representation



Introduction to S/4HANA



- In traditional SAP applications, all the data is stored at the database level and calculations are performed. The results are displayed at the application layer. Most of the query processing time involves calculations and aggregations. It is recommended that all application logic should be pushed at the database level to improve the performance of query execution
- SAP HANA based applications provide best application performance by pushing the execution into the database as possible. All the data is stored in in-memory database so the reading data is much faster as compared to a conventional database
- SAP HANA supports real-time data replication and hence removes unnecessary latency and complexity of data load
- S/4 HANA Business suite is based on the native HANA platform to support simplified data models, no aggregates, no indices, etc. It has an integrated Fiori-based user interface and role-based access for different purposes
- S/4 HANA is based on advanced in-memory platform and offers a personalized Fiori-based user experience to access role-based solution. It can be deployed over cloud environment or on-premise solution. There are many customers which are moving from SAP Business Suite to S/4 HANA and for 75% customers, it takes an average 6 months for migration project

Advantages of S/4HANA



Following are the advantages of using SAP HANA as underlying database

- Real-time data analysis
- Elimination of unnecessary complexity of hardware
- No latency in database due to nightly ETL jobs
- In-memory database
- Column store supports calculations on the run
- Parallel processing
- Data compression

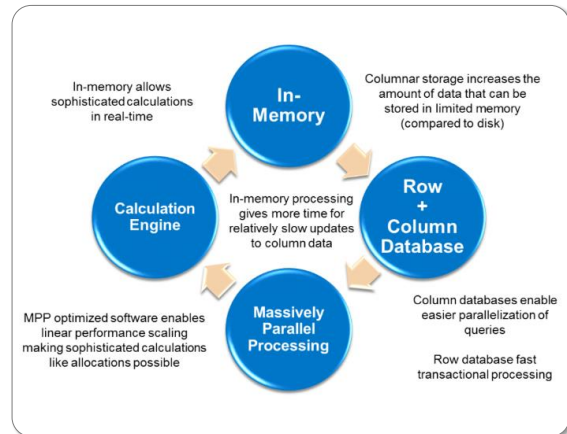


What makes S/4HANA so fast?



On the SAP HANA platform, enterprise system is capable of answering any query in < 3 seconds. Large amount of data + Complex queries + Non-aggregated data + Real data that is changing. The more of these, the better HANA performs. This happens by virtue of the following innovative technological aspects of HANA:

- Multicore parallelism
- Columnar structure of database store
- Projection, Dynamic Aggregation and Compression



S/4HANA Capabilities



Simplify Asset Operations and Maintenance:

- Maximize asset value, control risks, and help ensure safety with a holistic view of asset status to plan maintenance activities with the right person, tools, resources, and integrated documentation



Manage Environmental, Health and Safety Risks:

- Execute tasks in critical environments with a complete view of compliance and safety measures, so you can identify risks and regulations, define priorities, implement controls, and track incidents



Maintain Service Agreements:

- Provide a single contract for all outcome-based services and reduce administrative burden by consolidating and maintaining task lists, catalogues, maintenance plans, and warranty information



Provide Customer-oriented Services:

- Engage with customers across a multitude of channels to offer packaged service offerings; manage complaints, claims, returns, and refunds; and schedule and dispatch field services to fulfill service orders



Streamline Service Parts Management:

- Optimise parts logistics and inventory processes with real-time visibility across all supply locations to source service parts globally and ensure their availability



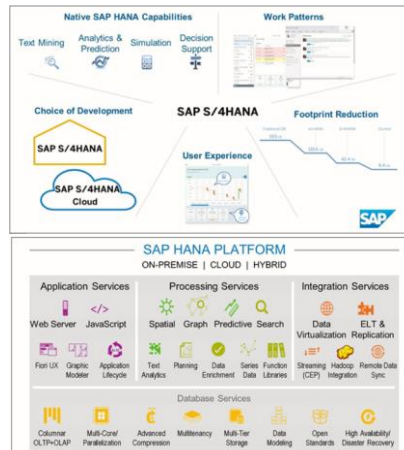
Streamline Core HR and Payroll Processes:

- Integrate employee master data, organisational data, and cost-centre-related information from the SAP SuccessFactors Employee Central solution to speed reorganisations and other end-to-end processes

SAP HANA Platform and Deployment Options



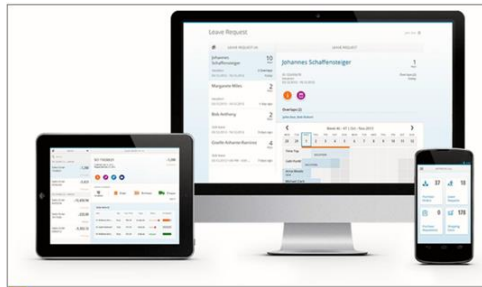
SAP HANA can be deployed on-premises for maximum control, in the cloud for fast time to value, or through a hybrid model that supports a variety of deployment scenarios – from on-premises to any public or private cloud.



SAP Fiori – New User Experience (UX)



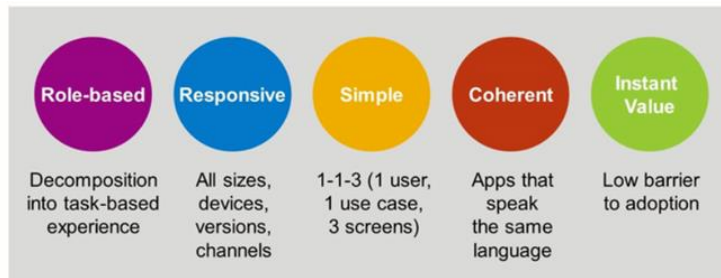
- SAP Fiori is a new user experience (UX) for SAP software and applications. It provides a set of applications that are used in regular business functions like work approvals, financial apps, calculation apps and various self-service apps
- SAP Fiori provides all business roles in real time on compatible hand devices. It offers business roles on easy to use functions, simple with unmatched responsiveness on desktop, smartphones and Tablets
- SAP Fiori enables multiple device applications that allow users to start a process on their desktop/laptops and to continue that process on a smartphone or on a tablet. SAP has developed Fiori Apps based on User interface UI5



SAP Fiori Design Paradigm



- Below are five design principles for SAP Fiori UI5. These principles make SAP Fiori simple and decompose the different transactions into simple task based UI applications
- SAP has decomposed various SAP transactions and changed them into beautiful user interactive applications that show only most relevant information to the users based on their roles
- When SAP Fiori is combined with the power of SAP HANA, it provides an unmatched application response and query executions time
- SAP has provided all the Fiori apps based on the same language and it does not matter on the deployment and platform



Different Types of FIORI Apps



Fiori apps are divided into three categories. They are distinguished on the basis of their function and infrastructure requirement.

Transactional Apps:

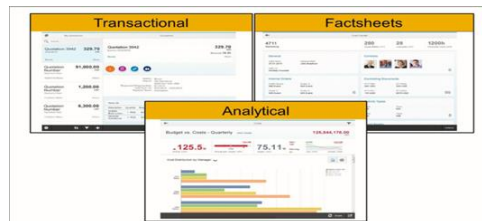
- These are used to perform transactional tasks like a manager-employee transactions such as purchase order or sales order creation etc.

Fact sheets:

- These are used to drill the key information and contextual information in business operations. In SAP Fiori tiles, you can drill down to further details. For example, there is a fact sheet app with the center objects having details about vendor contract. You can drill down to further details like vendor details, contract terms, item details etc.

Analytical Apps:

- These are used to provide role-based real time information about the business operations. It provides real time information from large volume of data in front-end web browser. Using Analytical apps, you can closely monitor Key Performance indicators KPIs. You can perform complex aggregations and calculations of your business operations and react immediately as per the changes in the market condition.



Transition to SAP S/4HANA



There can be 3 types of transition scenarios or path to S/4HANA:

System Conversion:

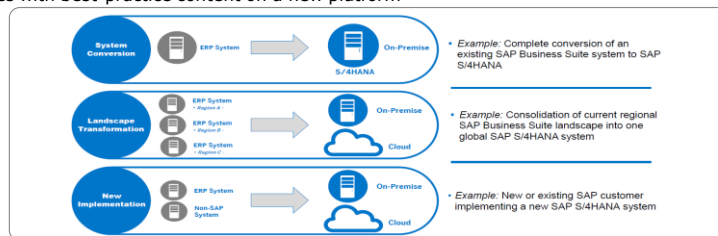
- In this case client can bring their business to a new platform. It's a complete technical in-place conversion of an existing SAP Business Suite ERP system to SAP S/4HANA (Database, SAP NetWeaver and Application transition in one step) and adopt new innovations.

Landscape Transformation:

- It's value driven data migration to a new platform when customers want to consolidate their landscape or to selectively transform data into a SAP S/4HANA system i.e. consolidation of current SAP Business Suite landscape into one global SAP S/4HANA system or selective data migration based on legal entities

New Implementation:

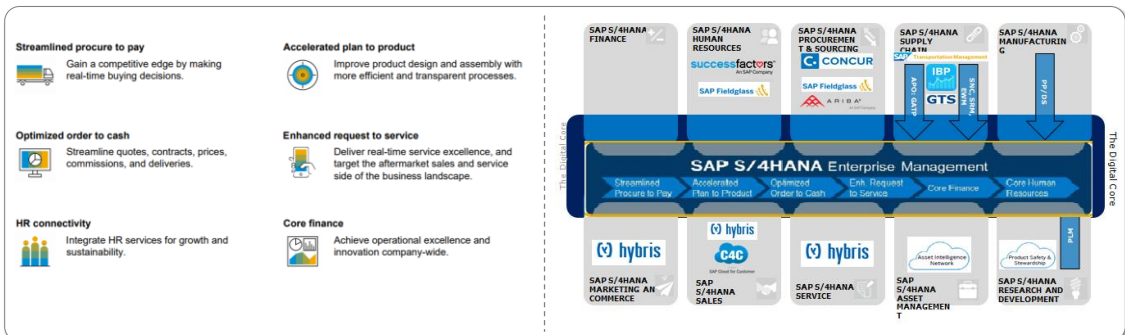
- It's a new implementation of SAP S/4HANA for customers migrating a legacy system, also known as "greenfield" approach. In this case, it would be reengineering and process simplification based on latest innovations • Implement innovative business processes with best-practice content on a new platform



S/4HANA Enterprise Management



- Covers all the critical Business Scenarios of an Enterprise
- Delivers End to End processes to help Enterprise across various industries
- On premise and Cloud are major deployments. Managed cloud is also ready
- On top Enterprise management core capabilities of S/4HANA it can combine with each Line of Business application based on requirement



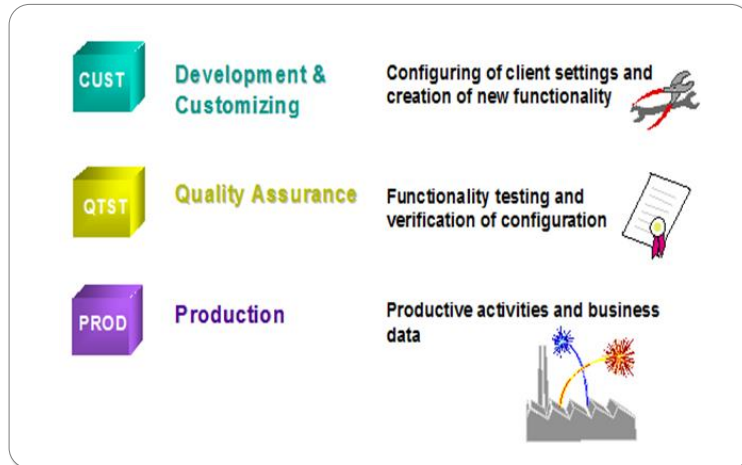
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Businesses on SAP







Common Client Roles

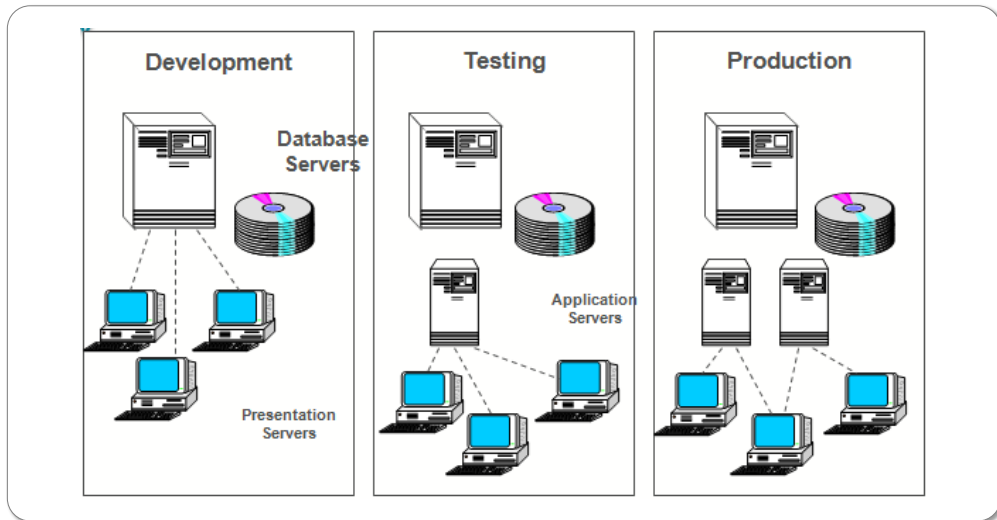


Additional Client Roles



	Sandbox	Sampling of customizing transactions and settings
	Test	Testing of configuration settings with data
	Training	End-user customer training environment
	Pre-production	Configured environment for the load of legacy data prior to the start of productive activities

Sample SAP System Landscape

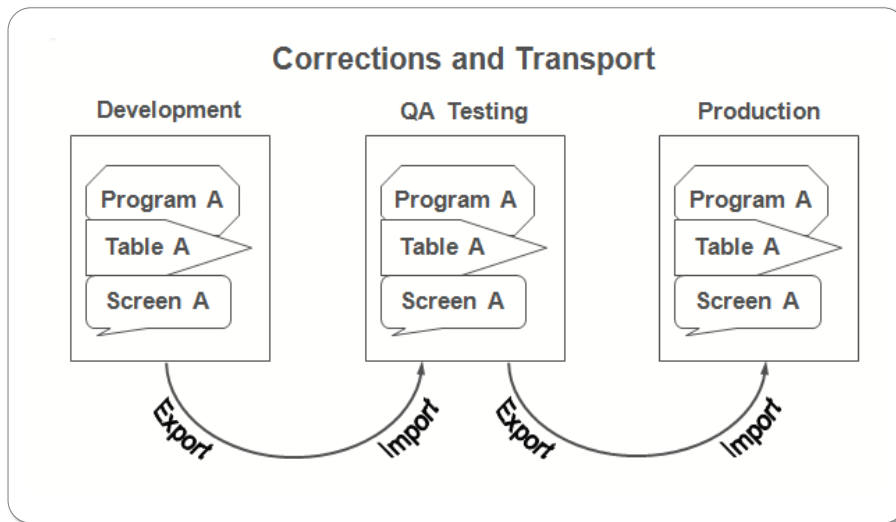


Transport Request



- A kind of 'Container / Collection' of changes that are made in the development system
- The changes are done in the development system and then transported to the Quality system via the Transport Request and similarly from Quality to subsequent systems
- Naming convention: <SID>K<Number> [Not modifiable by system administrators]
 - SID – System ID
 - K – Is fixed keyword/alphabet
 - Number – can be anything from a range starting with 900001





Enhancement & Support Packages



- Enhancement packs, meanwhile, are updates within versions, but they can be relatively major updates and introduce new features
- Support packages are bundles of fixes to existing functionality and don't usually (but can) introduce new functionality

Different types of SAP Projects



Implementation Project

When client wants to implement SAP Module(Ex: HCM/MM/SD/FI/CO etc.) for the first time, consultant from various modules do configuration based on their requirements

- Role of consultants are:
 - Prepare interfaces/RFC's to interact with SAP/3rd party
 - Data migration from Legacy system to SAP system
 - Configuration
 - Integration of several modules
 - Testing
 - Document preparation
 - End user training, etc.



Different types of SAP Projects



Support Project

After implementation of SAP modules customer/business need assistance of consultants in their day to day business operations.

- End users raise their issues, errors, etc. through a ticket handling tool
- Ticket Handling Tool is a must which helps to track the status of tickets
- Examples of Ticket Handling Tool are:
 - HP ALM
 - BMC Remedy
 - SM7, etc.



Different types of SAP Projects



Roll Out Project

- Company has upgraded/implemented one or more modules of SAP for one country & wants to do the same or similar upgrade or implementation for different countries



Upgrade Project



Customers are moving from the older versions of ECC to new versions

Example :

Company migrating from older versions like:

- 4.5,
- 4.6b,
- 4.6c to ECC 5.0 / ECC 6.0
- SAP HR EHP3 to SAP HR EHP 5



Testing Phases in SAP Projects



Unit Testing:

- Standalone tests of the various SAP modules

System Integration Testing:

- Proper Business Process is followed in this wherein Consultants from different modules do the testing together. For example 1st Step would be of SAP SD, 2nd would be of SAP MM and 3rd of SAP PP and so on

User Acceptance Testing:

- Actual Business Users do this testing in SAP as per their Business Process



Customization



- Although SAP provides some default functionalities there are some processes which are client specific and don't meet with the SAP functionalities
- This is called as Fit Gap Analysis i.e. the Distance Between Actual and Existing / Supporting
- Customizations are done with the help of ABAPers



Customization (Continued...)



- Changes in SAP are done to meet business requirements. These changes are outlined in a document called as Functional Specification Document which mentions the Business Requirement, the configurations done, customized configurations. This document is the responsibility of the Functional Consultants
- The ABAPers are responsible for capturing their changes in a document called Technical Specification Document
- SAP recommends all the customizing changes should have their names starting with Y or Z
- A to X is reserved by SAP

Customization (Continued...)



- For example standard sales order document type is OR. If Client wants to create a new sales order document type then it's name would Yxx or Zxx
xx → alphabetic, numeric or alphanumeric as per the Client's naming convention
- Customization can be costly and can complicate future upgrades to the software because the code changes/modifications may not easily migrate to the new version

Transaction Code / Fiori Tiles



- In ECC, any function (transaction, reports etc.) can be accessed through transaction code. Similarly in S/4HANA it can be accessed through Fiori tiles
- Transaction code consists of letters, numbers, or both, and is entered in the command field at the top of the SAP screen
- Each function in SAP ERP has an SAP transaction code associated with it
- Use a transaction code to go to any task in an SAP application faster. By entering a transaction code instead of using the menu, you go to a task and start the function in a single step

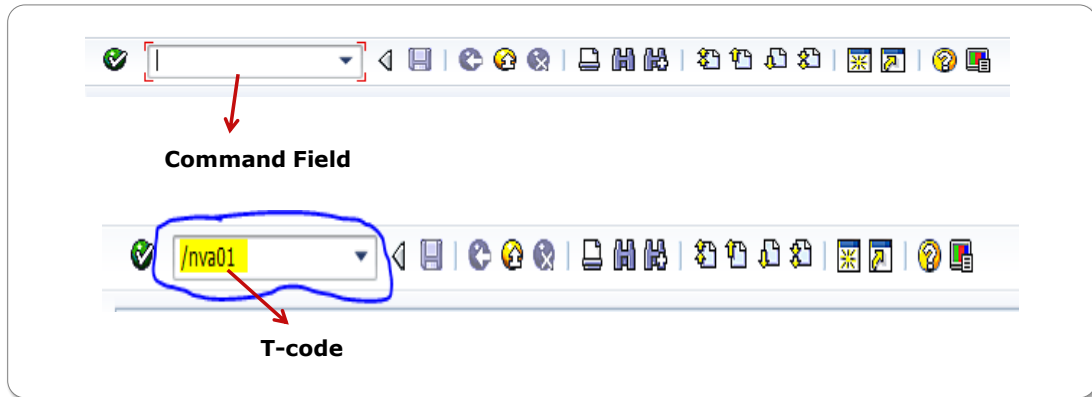
Examples:

- SPRO → Display Implementation Guide
- SE16N → Table access

Ways of Accessing an Application



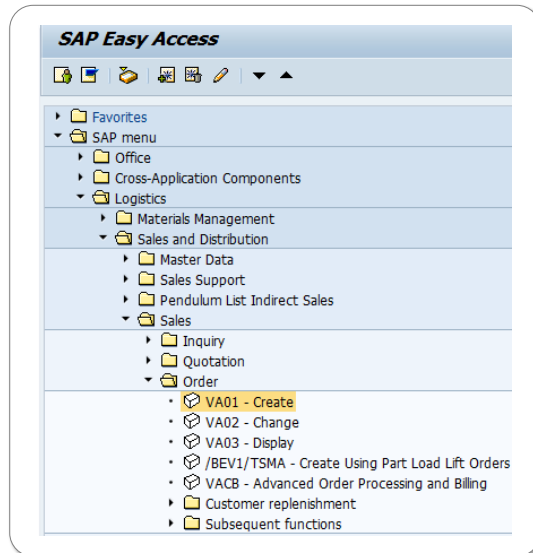
T-code in Command Field



Ways of Accessing an Application (Continued...)



SAP Menu Path



Ways of Accessing an Application



- In S/4HANA same functionality can be accessed through fiori tile. To do so, user has to log into fiori launchpad and the respective tiles will be appeared based on user's roles and authorization.
- Then user can click on the tile to launch the application as shown below:

The screenshot displays the SAP Fiori 'Manage Sales Orders' application. On the left is a login card with fields for User, Password, Language (EN - English), and Client (100), along with 'Log On' and 'Change Password' buttons. The main application area features a search bar and several filter fields: Sales Order, Sold-To Party, Customer Reference, Requested Delivery Date, Overall Status, Document Date, and Created by. A red box highlights these search and filter fields, with a callout stating: '1. Already created orders can be searched using any input parameter'. Below the filters is a table titled 'Sales Orders (0)' with columns: Sales Order, Sold-To Party, Customer Reference, Requested Delivery Date, Overall Status, Net Value, and Document Date. A 'Create Sales Order' button is located above the table. A callout points to this button with the text: '2. Click on "Create Sales Order" button'. The table currently shows no data, with a message: 'No filters set. To start, enter your search and filter settings and run the search.'



People matter, results count.

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