

SAP - A SIMPLE WAY FOR OPTIMAL UTILIZATION OF RESOURCES

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1. Abstract:

ERP Enterprise Resource Planning, used to plan our resources in order to get good profits with less effort. A sound foundation is necessary to compete and win the global marketplace. The SAP ERP application supports the essential functions of the business processes and operations efficiently and is tailored to specific needs of the industry.

Keywords: ERP, SAP R/3, Education Purpose.

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Introduction:

SAP stands for “System, Applications and Products in Data Processing”. SAP is the largest business software company in the world. SAP is the largest Enterprise Resource Planning (ERP Software) solution software provider. SAP’s main products are SAP ERP (formerly known as SAP R/3) and SAP Business Objects software. SAP software has three-tier application architecture: database, application server and client SAP GUI (presentation layer). As per the reports there are over 100,600 SAP installations at more than 41,200 companies in more than 120 countries.

SAP Technical Features:

1. Platform Independent: It can work in any type of platform.
2. Database Independent: It can use any type of database.
3. Based on III tier Architecture: Because of III tier architecture faster and that will not affect the changes in any layer.
4. Open System: It is without changing source code we can develop 70% in SAP and remaining 30% can be customized.
5. Multilanguage Support: It can support more than 75 national languages.

Landscape: is the arrangement for the servers.

IDES : is purely for education purpose and is NOT INCLUDED in the landscape.

DEVELOPMENT → QUALITY → PRODUCTION

DEVELOPMENT: is where the consultants do the customization as per the company's requirement.

QUALITY: is where the core team members and other members test the customization.

PRODUCTION: is where the live data of the company is recorded.

A request will flow from Development→Quality→Production but not backwards.

1. **Sandbox server:** In the initial stages of

any implementation project, You are given a sandbox server where you do all the configuration/customization as per the company's business process.

2. **Development Server:** - Once the BBP gets signed off, the configuration is done in development server and saved in workbench requests, to be transported to Production server.

3. **Production Server:** This is the last/ most refined client where the user will work after project GO LIVE. Any changes or new development done in the development client will be transported to production.

These three are landscapes of any Company. They are organized in the above mentioned three ways. Developer develops their program in Development server and then transports it to test server. In testing server, testers check/test the program and then transport it to Production Server. Later it will be deployed to client from production server.

Presentation Server: Contains SAP GUI.

Application Server: Where SAP is installed.

Database Server: Where Database will be stored.

R/3 stands for real-time three tier architecture. This is the kind of architecture SAP R/3 system has.

R/3 means three layers are installed in Different system/server and they are connected with each other.

- 1) Presentation
- 2) Application
- 3) Database

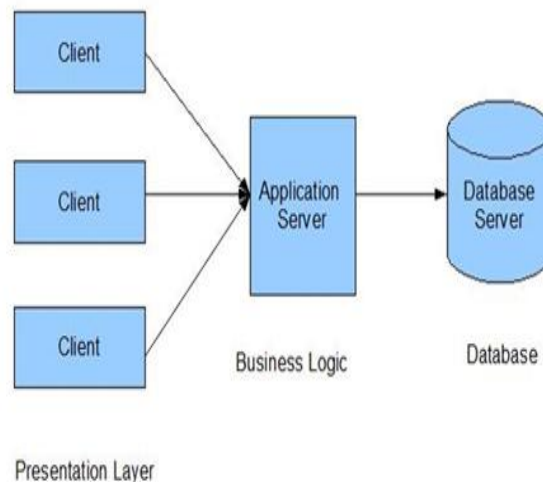
Why do we call client000 as golden client?

Golden client contains all the configuration data and master data so some extent. All the configuration settings are done in golden clients and then moved to other clients. Hence this client acts as a master record for all transaction settings, hence the name "Golden Client".

Three-Tiered Architecture

SAP software uses a three-tiered architecture. In a three-tiered architecture there are three nodes:

- Presentation Layer or Client
- Business Logic or Application Server
- Database Server



Presentation Layer:

Various devices could be used to access SAP business software. For example: desktop, mobile devices, laptops, and so on. This device would be called a presentation layer. You might have to install a piece of software on these devices so that they could talk to the application server (computer running the actual SAP software). You could also use your web browser to access SAP application. Whatever the case may be, the front end device would communicate with the application server. The device would simply display you a presentation layer while the application is actually running on the application server. The device is also called a "client".

Application Server:

The actual SAP software runs on an application server. Client node simply displays the image of the screen that is actually being produced on the application server. It is important to note the application server only runs SAP software. Data is not stored in application server

Database Server:

Data is stored on a separate machine called database server. Presentation layer communicates with application server to retrieve the screen image to be displayed to the user. Application server in turn communicates with the database server to write data to the database and to retrieve data from the database. The database server would be hosting a database management system like Oracle. Oracle is the most popular choice of database to be used with SAP software. Other databases could be used as well e.g. SQL Server (from Microsoft) and DB2 (from IBM).

Network:

Network is an important part of a three tiered architecture. The client computer would connect to the application server through internet, or company specific intranet, local area, network, dial up line etc. Similar media is used by application server to communicate with database server. This way user can run business application virtually from anywhere.

Scalability, Flexibility, and Ease of Maintenance:

Three-tiered architecture provides scalability and flexibility. If overtime, load is increased on the application server, then another application server could be added. Or simply more memory or CPU could be added to the same application server without disturbing other nodes. Similarly database server could be upgraded without touching the other nodes. Also when it is time to upgrade the business logic to a newer version, only application server absorbs the new business logic patches.

Service-Oriented Architecture:

SAP is SOA enabled. SOA (pronounced as so-uh) stands for Service-Oriented Architecture. SOA architecture is based on Net Weaver technology. Being SOA enabled means that SAP software support service calls. Any program (even external to SAP) can make a service call to SAP to retrieve some useful information or to register new information. For example let's say you have developed an external website that needs to retrieve current pricing information from SAP software. Instead of retrieving information from the database (by writing SQL) your website will make a service call to SAP requesting prices on selected items. Also your website may make a service call to SAP to register a new customer. The information might arrive to your program responsible for generating website in an XML (Extensible Mark-up Language) format. XML is a popular choice of protocol for data exchange. You can then parse this data and display it to the website in any layout you like using HTML (Hypertext Mark-up Language). Websites are built using HTML language. This is the language that your browser can decode. SOA architecture brings flexibility to the table. It makes it easy for external applications to communicate with SAP.

Advantages of III tier Architectures:

- Load balancing
- Scalability: (We can increase Application Servers according to our requirement)
- Availability (If any problem in one Application Server we can remove that, place a new one without affecting other server)
- Reliability

Conclusion:

This subject is very useful in engineering academics. The technical module SAP-ABAP is worthy for computer science engineering graduates.

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