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Using Client-Server Technology

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Abstract:

this article focuses on the importance of client-server technology, its applications, and its implementation in certain software products and even software types. In addition, the classic two-tier architecture of "Client-Server" and storage modules were mentioned.

Keywords: Client-Server, architecture, technology, storage modules, software, DBTMS, SQL languages.

Over time, not a very functional file server model (FS) for local networks, but a "Client server" structure "Client" (RDA, DBS and AS) appeared.

"Client-server" technology, which occupies the lowest database, has become the main technology of the global Internet. In addition, intranet technologies have emerged due to the fact that corporate systems on the Internet have been transferred to the field of intranet technologies. In contrast to client-server technology, such technologies are provided not to data, but to data in ready consumption. Computing systems built on the basis of intranet provide components of central information servers and specific information to the end user (browsers or Navigator programs). dyvia between the server and the client is carried out together with the use of the Internet. - Technology.

At present, "Client-server" technology has made a very significant distribution, but there is no technology of universal recipes. It only makes a universal judgment about how to create an information system of distribution. Also, the implementation of this technology in certain software products and even types of software is highly recognized.

"Client - Server" is a classic two-tier architecture

As a rule, network components do not have equal rights: some have access to resources (for example: database management system, processor, printer, files, etc.), while others have access to these resources. operating system Server technology

"Client - server" technology - This architecture program packages are more in line with the "Request-Response" scheme to distribute the program for two logically different parts (server and client) and solve our specific tasks.

The program (or computer), management and / or ownership of some resources is called the server of this resource.

A program (computer or) requesting and using a resource is called a client of that resource.

At the same time, such conditions may arise when some program block simultaneously performs the functions of a single block with respect to another block and a server with respect to the client.

The main principle of client-server technology is to separate the functions of the program into at least three links:

User interface modules;

This group is called the logic of the presentation. With it, users can interact with programs. Regardless of the specific features of the presentation logic (command line interface, mediation, interfaces through complex graphics interfaces), its task is to allocate resources to increase the efficiency of information exchange between the information system and the user.

Storage modules;

This group is also called business logic. Business logic or other application (for example, requirements specific to the subject area presented). Application partitioning across program boundaries provides a natural basis for distributing applications across two or more computers.

Data processing modules (resource management functions);

Also, this group of logic data access algorithms is called or simply data access. Data access algorithms are db-mms or db-mln. file system. Using data processing modules, a specific interface for the DBTMS application is established. Using the interface, the application manages database connections and queries to it (SQL SQL Language specific queries translation, translation of results and statements of these results and translation of statements of these results and translation of results of these results and translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the translation of statements of these results and the documents confirming the results of these results for the structure. Each of the registered links can be implemented independently of several others. For example, without changing the programs used for data processing and storage, you can display the same data as tables, histograms or graphs. You can change the interface to make it work. The simplest programs can often collect three references to a single program, and this division is at the functional limit.

According to the division of functions in each program, the following components are divided:

- data presentation component;
- application component;
- Resource management component.

In the classical architecture, the client server must map the three main parts of the application according to the 2 physical modules. Typically, the application component resides on the server (for example, a database server), the client agent is on the client side, and the resource management component is shared between the server and client components. This is the main disadvantage of the classic two-level architecture.

In the section of data processing algorithms, two times in the architecture, manufacturers should have complete information about the latest changes that are listed and do not cause small difficulties in the development of client-server systems, their accompaniment and makes these changes, which cause minor difficulties in installation, because it is necessary to coordinate the actions of different groups of specialists. Conflicts in the actions of developers often occur, which slows down the development of the system and forces new and proven elements to change.

In order to avoid inconsistencies in different architectural elements, two methods of "Client-Server" connection have been changed: "Thick Client" ("Thick Server") and "Thin Server" ("Thick Server").

In this architecture, developers tried to process data from one of two physical parts - on the client side or on the server ("thin client").

Each approach has its significant drawbacks. In the first situation, the network is not overloaded unnecessarily, because there is excess data transmitted due to availability. In addition, system support is complicated, and its change becomes more complicated, because changing or replacing the calculation algorithm requires replacing all interface programs at the same time, if you do not perform a complete replacement, you will lose data or you may be inconsistent with errors. If all data processing is done on the server, then the established procedures and the problem of their cancellation are implemented. The data processing system on the server cannot be transferred to another platform (OS), which is a serious inconvenience.

If a two-level classical architecture is created, then you should know the following facts:

A "thick server" architecture is similar to a "thin client" architecture

Transferring a request from the client to the server to the server, processing the server request, and the client's result. At the same time, the architecture has the following disadvantages:

- the implementation is complicated, because SQL does not adapt to the development of such software and there are no good debugging tools;
- The productivity of programs written in SQL languages is much lower than those created in other languages, which are the most important for complex systems;
- Programs written in DBBM languages are not very reliable from the part of the Rules; An error in them can cause the entire database server to fail;
- In this way, programs that are completely incompatible with other platforms and systems.
- "Thick Client" architecture is similar to "Slim Server" architecture

Processing of requests is done on the client side, that is, the data that has not been processed by the client is transferred from the server by the client. In this case, architects have disadvantages:

- It complicates the software update, because it must be done simultaneously in the replacement system;
- the distribution of powers is complicated, because the separation of access is not according to actions, but according to tables;
- The network is overloaded due to excess data transmission;
- data protection, as well as the right distribution of forces.

You should use multiple tiers (three or more tiers) of client-server architecture to solve the problems you've registered.

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