CLIENT-SERVER TECHNOLOGY AND PRACTICES OF THE PRACTICAL LAYER.

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Annotation: In this article, what is the client server, what functions does the client market, the client-server characteristic is the relationship of the interacting programs in the program. It also provides information on the client server model, networks, differences, and computing advantages.

Keywords: Client - server, characteristics, computer, network architecture, model, "common bus", "ring" and "star".

A "client-server" (English client-server) is a computer or network architecture in which tasks or network loads are distributed between service providers called servers and service clients called clients. In fact, the client and the server are software. Nowadays, the development of the Web page has reached a more interactive level. Websites are slowly becoming more of an application interface. All this is done using modern Web programming technology.

Web-programming technologies and programs can be divided into two main parts: client-side programming (client-side) and server-side programming (server-side). To understand these technologies, one must first understand the "client-server" technology directly. An interactive program on a web page is called a script. The term is derived from the outcome of the program. Its main task is to "react" to the user's position and behavior on the Web page.

Scripts are thus divided into client-side scripts and server-side scripts. Scenarios executed on the client side are executed using a browser. Server-side scripts are executed using a Web server.

The client-server characteristic describes the interaction of interacting programs in a program. A server component provides a function or service to one or more clients that initiates requests for such services. Servers are classified according to the services they provide. For example, a web server serves web pages, and a file server serves computer files. A common resource can be any computer software and electronic components - servers, processors and storage devices from software and data. Sharing server resources is a service. Whether the computer is a client, a server, or both is determined by the nature of the application that requires the service functions. For example, web servers and file server software can run on the same computer at the same time and provide different information to customers who send different types of requests. Client software can also interact with server software on the same computer. Communication between servers, for example, to synchronize data, is sometimes referred to as inter-server communication.

A client-server refers to the relationship between clients that initiate requests for services and affiliate programs in an application that consist of servers that provide that function or service.

What is a client-server model?

A client-server model or client-server architecture is a distributed application system that distributes tasks between servers and clients that are on the same system or communicate over a computer network or the Internet. The client relies on sending a request to another program to access the service provided by the server. The server launches one or more programs that share resources and distribute work among clients.

The client server communication communicates in a request-response message exchange scheme and must follow a common communication protocol that formally defines the rules, language, and dialog patterns used. The client-server connection usually corresponds to a set of TCP / IP protocols.

What is a client-server network?

A client-server network is a means by which customers access resources and services from a central computer through a local area network (LAN) or a wide area network (WAN) such as the Internet. A unique server called a daemon can only be used to wait for client requests, at which point the network connection is started until the client request is executed.

Advantages of client-server computing

There are many advantages to the client server architecture model:

1. A single server that puts all the necessary information in one place makes it easy to protect data and manage user authorization and authentication.

2. Resources such as network segments, servers and computers can be added to the client-server network without significant interruptions.

3. Efficient access to data is required without requiring the proximity of clients and server.

4. All nodes in the client-server system are independent and only request data from the server, which makes it easy to update, replace and move nodes.

5. Data transmitted through client-server protocols is platform-agnostic.

The difference between a client and a server

Clients are also pieces of computer hardware or server software that request resources and services provided by the server, also known as service requests. Customer calculations are classified as thick, thin, or hybrid.

1. Thick client: a client that provides rich functionality, does most of the data processing itself, and relies heavily on the server.

2. Slim client: A thin client server is a lightweight computer that relies on basic computer resources - the application server does most of the processing of any required data.

3. Hybrid client: A hybrid client with a combination of thin client and thick client characteristics relies on a server to store data permanently, but is capable of local processing.

A server is a device or computer program that provides functionality for other devices or applications. Any computerized process server that can be used or called by the client to share resources and distribute work. 1. Some common examples of servers include:

Application server: Contains web applications that users on the network can use without requiring their copies.

2. Computer server: shares a large amount of computer resources with networked computers that require more processor power and RAM than is typically available for a personal computer.

3. Database server: stores and connects databases for any computer program that receives well-organized data, such as accounting software and spreadsheets.

4.Web server: hosts web pages and facilitates the availability of the World Wide Web.

Bonding layer

 Enabled physical level bits are simply transmitted. It is not taken into account that a physical transmission medium may be busy in networks used (shared) by the exchange of several computers whose communication lines interact with each other. Thus, one of the tasks is to check the link layer (Data link layer) for the presence of transmission tools ... Another difficulty is the link layer- the introduction of mechanisms to detect and correct errors ... To do this, the data link level- called bits staff (frames) grouped into plumes. Connection layer Placing a special sequence of bits at the beginning and end of each frame ensures the accuracy of the transmission of each frame, as well as its output. the checksum sum processes all the bytes of the frame in a certain way and adds the checksum to the frame. When the frame arrives through the network, the receiver makes an invoice again, receives the data received from the control amount and compares the result with the control amount from the frame. If they match, the frame is considered correct and acceptable. If the control amounts do not match, an error is recorded. The connection layer can not only detect errors, but also correct them by re-transmitting the broken frames. It should be noted that the link layer for the error correction function is optional, so this layer is not present in some protocols, such as Ethernet and frame relay.

 Safe delivery of the package:

° Between two adjacent stations in a network with an optional topology.

 ° Among any stations in the network with a simple topology:

 ° check the availability of the general environment;

 output of frames from the data stream coming through the network;

° framing when sending data;

 calculation and verification control amount.

Implemented in software and hardware.

 In the protocols, the link layer defines a specific structure of the connection between computers used in local networks and ways to access them. Although it provides the transmission of the frame between the link layer and any two nodes of the local network, it does so only in a specific network, the link topology, which is intended for which topology. The reference layer to such typical topologies supported by the protocols includes local networks "common bus", "ring" and "star", as well as structures constructed from them using bridges and switches. Examples of protocols are link layer Ethernet, Token Ring, FDDI, 100VG-AnyLAN protocols.

 Client-server technology is one of the evolving technologies today, and we use this technology many times over the course of launching our projects created by programmers. This is because a programmer who has a good understanding of client-server technology can learn from server mode or server structure which way to run his program faster. A single server serves multiple clients. Of course, when we say client here, we mean program. From different clients, that is, from the program, we can access the same server at any time. We get a response from the server to the information we want. The speed or quality of the response will of course depend on the characteristics of the server. Or how it was built. At this point, it is up to the industry expert to know how well this technology works. I think that after this practical work, I discovered another field for myself. Of course, in the future I will be an

expert in building my own server, and I will continue to innovate in client-server technology. I would like to thank my teachers who introduced me to this topic.

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