ЕВРАЗИЙСКОЕ НАУЧНОЕ ОБЪЕДИНЕНИЕ
EURASIAN SCIENTIFIC ASSOCIATION
www.esa-conference.ru

УДК 541.18

Technology of using information in a network mode

Amirov Manat Mustafaevich, Baidibekova Aydin Orisbaevna,
Polatbek Aigul Makhalkyzy, Koshtayeva Gulbala Turganbekovna
South Kazakhstan University named after M. Auezova, Shymkent, Kazakhstan

Технология использования информации в сетевом режиме

Амиров Манат Мустафаевич, Байдибекова Айдин Орисбаевна,
Полатбек Айгул Махаловна, Коштаева Гульбала Турганбековна
Южно-Казахстанский университет им. М. Ауэзова, Шымкент, Казахстан

Резюме. *В статье описана технология использования информации в сетевом режиме, позволяющая успешно сочетать возможности обработки гипертекстовой информации с использованием современных СУБД. Более того, запросы клиентов на поиск и предоставление информации, а также на получение аналитических справок и данных из информационных систем полностью унифицированы. При этом рассматриваемая технология позволяет использовать существующие базы данных в сетевом режиме, не тратя деньги на их унификацию и приведение к единому стандарту. Основные затраты здесь направлены только на соответствующие описания баз данных и запросы для интерфейса HTTP-SQL или для сервера обработки транзакций, причем базы данных могут располагаться на разных машинах, находящихся на любом расстоянии друг от друга. Использование этой технологии позволяет решать весь комплекс задач, присущих информационной системе, включая удаленный ввод и редактирование данных.*

In the context of modern dynamic development of society and the complexity of technical and social infrastructure, information is becoming as strategic a resource as traditional material and energy resources. Modern information technologies that make it possible to create, store, process and provide effective ways to present information resources to the consumer have become an important factor in the life of society and a means of improving the efficiency of management in all areas of public activity. The level of information use is becoming one of the essential factors for successful economic development and competitiveness of the region both in the domestic and foreign markets.

The world community's awareness of the role of information as a strategic resource stimulated the development of new information technologies for obtaining and processing large amounts of information, storing it and providing it to users. The first place among new technologies is occupied by network information technologies.

Today, information is the most important strategic resource, and the greatest economic and social success accompanies those countries that actively use modern means of computer communications and networks, information technologies and information resource management systems. Information resources transferred to electronic media acquire a qualitatively new state and become active. Information available for rapid reproduction by means of computer processing is the most important factor in the social development of society.

Currently, the most developed countries are at an advanced stage of industrial development stage of society and move to the next, information, development and building "Information society" (IO). The widespread use of information technologies and modern means of access to information opened the fundamentally different possibilities of building a more balanced society with much greater realization of individual potentials of its members. The "information society" has a huge potential for improving the lives of citizens and improving the efficiency of the social and economic structure of the state.

The basis for building information systems using Intranet technology is the organization of a system for accessing information through the WWW Internet service. Internet technology allows you to quickly manage and update information stored in databases (DB) through the WWW page viewer (browser) (Fig. 1). The basic principle of Intranet technology for creating information resources and building information systems is to divide computing resources between multiple servers located at different ends of the network, as well as between servers and clients. The implementation of this principle is based on the use of HTTP-SQL (generating SQL queries to the database from the WWW server) and API (organization of dynamic applications on the server side) or Java (JDBC — organization of dynamic applications on the client side) interfaces for generating user requests to databases and other information sources for receiving and processing information. This technology allows you to successfully combine the possibilities of hypertext information processing with the use of modern DBMS. Moreover, the client's requests for searching and presenting information, as well as obtaining analytical references and data from information systems, are fully unified.

Mathematical software for organizing the HTTP-SQL interface is freely distributed for both MS Windows NT systems and non-commercial UNIX platforms. You can use either existing or purchased network databases (for example, Informix, Oracle, MS SQL).

Any information system built on the basis of client-server Internet technologies must contain the following server components:

ЕВРАЗИЙСКОЕ НАУЧНОЕ ОБЪЕДИНЕНИЕ
EURASIAN SCIENTIFIC ASSOCIATION
www.esa-conference.ru

gateway-a server that manages access rights to the information system.

WWW server; server of databases; application server and /or transaction processing server. The WWW server can interact with databases in two ways: via the transaction server or via the WWW server or application server API. The use of commercial transaction servers implies the organization of a more or less standard interface, and the use of the application API gives full freedom to developers.If the database is hosted on different machines located in different local networks, it is necessary to build trust databases with the mandatory use of gateways to ensure access rights.

The use of Internet technologies allows you to combine data located in various places on the Internet into a single information system. For a user who accesses the Internet, it doesn't matter where these sources of information are located. By navigating the map, the user can easily move from one area map to another without knowing that the data may be located on different network servers.

Internet technologies provide the following features for creating distributed GIS that combine data located on various Internet servers:

ease of administration of complex distributed GIS; there is no need to replicate data and software, their updating is performed on-site by the holders of a particular information;

the user interface is unified, since the program uses a standard WWW viewer (Internet Explorer or Netscape browser) to run on the client computer, sometimes with a built — in map component (PlugIns + Java applications);

easy to install client software that can be implemented (or updated to a newer version) automatically when you log in to the information page; the minimum cost of obtaining GIS information for the end user.

The principles of building GIS-oriented information systems on the Internet can be classified according to three main methods of storing and transmitting spatial data:

1. storage and transmission of spatial data in the form of bitmap images (GIF or JPEG files).

2. Storage of spatial data in vector format to some GIS technologies and their transfer to a raster format. This approach is used in most cases (for example, ESRI's Internet Map Server), because it allows

you to implement a system for the Internet without additional software from the client. On this basis, various information and reference systems are implemented, in which the response time of the system to a request related to the map display does not play a special role.

3. creating an interactive GIS for the Internet based on the client/server architecture with a fully vector way of storing and transmitting spatial data and displaying the latter using active client applications.

When displaying an electronic map at a client location, you can use separate map layers and attribute data associated with the map, which are located in different databases located on different Internet servers. This allows map information holders to store their own content on their servers and grant access to certain groups of users.

The advantages of the vector data format are most noticeable when working on a network with low bandwidth for the following reasons:

vector format is more economical when transmitting data over the network; interactive work with the map with the ability to generate spatial queries for individual objects;

multi-layer map view with the ability to manage map layers using a legend;

ability to display map layers only at the specified scale ranges of the visualization;

repeated use of data previously received by the user, without repeated access to the server (data caching) .

Internet information security is determined by the features of the basic communication (TCP/IP) and operating (UNIX) platforms. TCP/IP is highly compatible with channels that differ in their physical nature and speed characteristics, as well as with a wide range of hardware platforms. in addition, this Protocol works equally effectively in local, regional and global networks; the combination of these characteristics makes the TCP/IP Protocol a unique tool for integrating large distributed heterogeneous information systems.

Thus, the implementation of the information security system and information resources is divided into three independent tasks:

1 — ensuring the integrity of information and information systems;

2 — organization of authorized access to information;

3 — the inadmissibility of public access to information that is a state secret or has a confidential nature.

Among the organizational and technological measures to protect information, there are three main ones:

1 — protection at the IP packet level;

2 — administrative level of protection — contextual verification and viewing of packages for decision-making;

3 — software level of protection; the gateway acts as an intermediate link between the Information system and the client.

To ensure the confidentiality of information transmitted over the network,various methods of encoding (encrypting) information at the application and packet levels are used. The use of encryption at the application level is determined by the specific user; at the same time, Internet technologies allow you to encrypt messages independently of the application at the IP packet level.

Литература:

1. Хуторской А.В. Интернет в школе. Интернет в школе. Практикум по дистанционному обучению. - М .: ИОСО РАО, 2000. - 299 с.

2. Шокин Ю.И., Федотов А.М. Информационные технологии Интернет. Рассчитайте. технологии, 2, вып. 3, 2007.

3. Левин В.И. Новые компьютерные технологии. –Пенза:1998. –168с.

4. Хуторской А.В. Понятия и принципы дистанционной педагогики – Москва, 1999.- 280с.

www.esa-conference.ru

5. Бурибаев Б., *Дүзбаева* Р., Кубентаева С. Проблемы личностно-ориентированного автоматизированного обучения и воспитания // Журнал Поиск., Алматы, -2000. № 4-5. - С.151-154.

References:

1. Khutorskoy A.V. Internet at school. Internet at school. Workshop on distance learning. - M .: IOSO RAO, 2000 .- 299 p.
2. Shokin Yu.I., Fedotov A.M. Information technology Internet. Calculate. technologies, 2, no. 3, 2007.
3. Levin V.I. New computer technologies. –Penza: 1998. –168p.
4. Khutorskoy A.V. Concepts and principles of distance pedagogy - Moscow, 1999.- 280s.
5. Buribaev B., Duzbaeva R., Kubentaeva S. Problems of personality-oriented automated teaching and upbringing // Journal Search., Almaty, -2000. No. 4-5.– Pp. 151-154.