RESEACH METHODS OF IMPROVING EFFICIENCY OF A MULTISERVICE NETWORK

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More and more objects of economy, both public and private ownership in the territory of the Republic of Iraq are starting to develop their own corporate networks. There are several reasons: expansion of businesses associated with the need to ensure reliable and high quality link remote offices and branch offices, as well as increasing bandwidth requirements and reliability of data transfer.

Underfunding the main issue when creating or expanding an existing corporate network is the question of the total price, for the equipment and hire the required communication channels and network administration. The paper considers ways to optimize build corporate networks. For studies taken a large company with head office in Baghdad, a network of branches in provincial cities.

The aim of the study was to improve the quality and performance of corporate networks, reducing the cost of designing, improving protection of the network from external threats.

To address this goal in the following tasks:

1. The choice of technology to build networks of data transmission.
2. Development of applied mathematical model of network communications.
3. Calculation and analysis of the evaluation of quality characteristics of a corporate communication network.
4. Efficiency Optimization of applications and protocols of the POA a corporate communication network, allowing to increase its qualitative characteristics.
5. Information protection issues.

The results of the study allow you to move away from the most common approach in designing information systems-method of expert evaluations. This method though and minimizes the cost at the design stage and quickly estimate the cost of implementing the decision, however, is subjective. The advantage of simulation models is the possibility of substituting the process of change in the system events in real time on an accelerated process of change events in Tempe.

For the decision of tasks in view, it was necessary to give the notion of a corporate network and define its role and peculiarities in the hierarchy of data transmission networks. Based on these features, discussed in the first chapter of the thesis will be made the selection of specific technologies and solutions that meet the requirements of enterprise networks. Will the analysis of literary sources, considered world-wide trends in methods and technology of building modern converged enterprise networks.

On the basis of the received results will suggest the best methods and technologies to build the network. For communication inside and branch offices selected technology Ethernet allowing in the shortest possible time to launch and commissioning of the Network Technology. Ethernet allows you to easily implement scaling network without impact on existing personnel. It should be noted that Ethernet is the global standard for the Organization LAN networks.

For secure connection of geographically dispersed offices appropriate to use technology VPN MPLS. From other technologies building virtual private networks, such as VPNs, ATM or Frame Relay, VPN MPLS technology distinguishes good scalability, the ability to automatically configure and natural integration with other IP services, including Internet access, Web and e-mail services.

MPLS VPN functionality can be summarized as follows:

-MPLS allows a single converged network to support both new and existing facilities, creating an efficient migration path to IP infrastructure.

-MPLS operates over existing systems and transmission networks (ATM, Frame Relay, X. 25, IEEE 802.3, etc).

-MPLS allows you to generate traffic. Routing data packets are carried out through the application of technology of processing labels.

-MPLS supports the provision of services with a guaranteed quality of service (QoS). Packages that need to be delivered with high quality, can be marked, allowing service providers to provide certain small latency for voice and video signals in end-to-end connection.

-MPLS provides appropriate security level to make IP network the same safe as frame relay network in WAN, reducing the need for encryption in IP networks.

When sending confidential information, it is important to ensure a high level of reliability of encryption. The most famous representative of the Organization's encryption technology of protective channel in VPNs is the technology of Internet Protocol Security (IPSec-protected IP).

The main purpose of the IPSec service is to ensure safe PD over IP networks using any link-layer technology (PPP, Ethernet, ATM, etc.). Use Internet Protocol security (IPSec) ensures integrity, authenticity and confidentiality of the data; its membership now includes almost 20 proposals for standards and RFC 18.

IPSec in the following techniques:

-encryption of the original IP packet that provides secrecy of data contained in the package, such as a field in the IP header and the data field;

digital signature IP packets that provides authentication package and source-the sender of the package;

-encapsulate the IP packet in a new secure IP packet with a new header that contains the IP address of the device that disguises the internal network topology.

Thus, the use of VPN MPLS based Ethernet networks with data encryption protocol , IPSEC allows you to design a modern corporate network and create Foundation for further modeling network, whose goal is to further optimization.

Based on the results of this study clearly visible steps of designing a modern corporate network connection. Applying the information, you can create and optimize the performance of existing networks, disabling network efficiency and reliability to a whole new level.