ANNOTATION

Improvement of network software for IP address management based on the automation system such as IPAM // Master's thesis // Olga Ievchyn // Ternopil Ivan Pul'uj National Technical University, Faculty of Computer Information System and Software Engineering, Department of Software Engineering // Ternopil, 2014 // Pages – , Figures – , Tables – , Supplements –

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The purpose of the master's thesis is improvement of network software for IP address management based on the automation system such as IPAM. System administration plays a significant role in today's world of information technology. Nowadays it is difficult for people to imagine life without the various means of communication. However the massive use of separate, interconnected computers raises a number of serious problems: storing information, general accessibility, sharing information with other users, resource sharing by users. Solution to these problems is the consolidation of computers in a unified communication system - a computer network. The best way to solve this situation is the creation of a computer program that would allow users to perform self-monitoring of the computer network resources.

IP address management (IPAM) is a means of planning, tracking, and managing the Internet Protocol address space used in a network.

Routing - the process of determining rout of the information between networks.

The router makes decisions based on the IP-address of the recipient of the package. To send the package further, all the devices on the following path use the IP-

address of the recipient. To make the right decisions router must know the directions and routes to the remote networks.

Monitoring the infrastructure of IP-addresses and its management in the corporate network - is an important part of network administration that requires more and more attention because network becomes increasingly complex and dynamic. Most of the IT administrators still track the allocation and utilization of IP-addresses manually by using spreadsheets or custom database applications. It might be very time-consuming and resource-intensive process that is prone to user errors. Program system IPAM provides a platform to perform the following main IP-address administration tasks as planning, monitoring and management.

Since rapidly development of information technologies, we faced with the problem of information security and monitoring data transmission over a network.

Therefore during the research, network software for IP address management phpipam has been improved, using interpreted programming language Python and database management system MySQL. Developed usage scenarios that provide monitoring of IP addresses utilization, verification of the routing table, routes configuration, notifications about the latest adjustments by e-mail, displaying the results of the IP addresses data traffic on the chart.

Consequently, IP address management is very important in the organization of computer networking, so improvement this type of software allows system administrators more efficiently use their time and increase productivity.