

ABSTRACT

Master's thesis: 93 pages, 21 pictures, 26 tables, 1 appendix, 21 references.

Topicality. Every day, the number and the variety of computer network devices increases. The development of various technologies has led to the fact that the process of monitoring the network of large sizes becomes very difficult or sometimes virtually impossible. Today, computer networks consist of a large number of individual elements, where everyone is responsible for themselves.

Therefore, the scientific task is to use a new approach to network architecture such as SDN (software-defined network), with which we can optimize traffic flows and protocols.

The work communication with academic programs, plans, themes. The work was carried out at the Department of Automated Systems for Information Processing and Management of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" within the objective of the work "Effective Methods for Solving the Problems of the Theory of Schedules" (№ ДР 0117U000919).

Aim of the research is to improve efficiency of routing in SDN by forming non-intersecting multi paths.

To archive the goal we need to accomplish the following **tasks**:

- perform analysis of traditional network architecture vs. architecture of software-defined network;
- develop algorithms for the routing protocol that takes into account the features of the software-defined network;
- simulate the flow of the developed algorithm;
- develop software implementation of the created routing protocol;
- make efficiency analysis of the developed algorithm.

Object of the research is the routing process in software-defined network.

Subject of the research – methods and algorithms of multipath routing in SDN.

Scientific novelty of the results is obtained by developing a new multipath routing algorithm to be used in routing protocol in the SDN network.

Publications – On the materials of the dissertation was published 2 scientific works:

- abstract of the report for Ukrainian scientific-practical conference of young scientists and students “The actual problems of informatization of management decisions” (APIMD 2018);
- article was submitted for publication in Eastern-European Journal of Enterprise Technologies.

MULTIPATH ROUTING PROTOCOL, ROUTING ALGORITHMS, SDN,
NETWORKS WITH TRADITIONAL ARCHITECTURE