

Clustering network packets using the CLOPE algorithm

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For the modern variety of software that uses network communication protocols, the problem of ensuring reliability of work is acute. To solve such an important problem, random testing is used. This type of testing involves the generation of a large number of test data, including sets of network packets. The task of reducing the number of data stored after the research is arisen. This task can be solved by clustering the set of received packets.

To solve this problem, it is proposed to use the clustering algorithm for categorical data of CLOPE. This algorithm allows to cluster datasets without having information about source clusters, has relatively low computational complexity and ease of implementation.

The article describes the preparation and results of sets of network packets processing experiments. An approach is proposed for selecting the metaparameter of the CLOPE algorithm - the repulsion factor, which determines the resulting clustering results.

The study showed that the CLOPE algorithm can be effectively used for clustering network packets received during selective testing. The results of the research extend the toolkit for analyzing the results obtained with random testing of software.