DATA ACCESS DISTRIBUTION METHOD IN INFORMATION MANAGEMENT SYSTEMS OF CRITICAL APPLICATIONS

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The work solves a pressing scientific and technical problem, which consists in developing a method for distributing access and protecting data in information control systems of critical application. The research, results of calculations and comparative analysis conducted in the work made it possible to obtain the following results:

1. The mathematical models of the technology of spreading malicious software and various directions (methods) of information control systems are analyzed, the choice of the direction of research is justified and the statement of the scientific problem is formalized [1];

2. The mathematical models of technologies that take into account the features of the structural and functional construction of modern information control systems of critical application are considered;

3. A method for dynamically distributing access to cloud system resources is developed, which takes into account the factor of relative prioritization of information packets and dynamic reservation of resources for transmitting special signatures under conditions of high network load [2];

4. Practical recommendations are presented for applying the developed method for distributing access and protecting data.

Based on the mathematical and simulation modeling, the effectiveness of the developed method for dynamic access distribution and data protection in information management systems was assessed in comparison with known methods (built on the principles of static queue management and "fair" resource distribution in multi-protocol switching nodes).

Based on the results of the study, it is shown that the use of the developed method at high load of multi-protocol routers will allow up to 1.81 times to reduce the variation in the delivery time of information packets and special signatures to cloud systems and up to 9% to reduce the average transmission time of information packets and metadata compared to systems of "fair" resource distribution.

Based on the results of the comparative analysis of modern cloud systems, as well as the results of theoretical and experimental research conducted during the work, practical recommendations have been developed for the application of the developed method of dynamic access distribution and data protection in information management systems.

References:
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2. Dinh, T. Q., Tang, J., La, Q. D., & Quek, T. Q. S. (2020). Offloading in Mobile Edge Computing: Task Allocation and Computational Frequency Scaling. *IEEE Transactions on Communications*, 68(9), 5647–5660. https://doi.org/10.1109/TCOMM.2020.2990045.