ABSTRACT

The explanatory note comprises 55 pages and contains 14 illustrations, 24 tables, 2 appendices, and 31 references.

Relevance of the topic. Currently, the demand for cloud computing is increasing as it significantly simplifies infrastructure and reduces the costs associated with maintaining and supporting own servers. There are numerous companies offering cloud computing services, providing developers with a variety of possible configurations of environments with different performance characteristics and costs. The choice of a cloud provider and the optimal configuration for a specific task is critically important as it determines the performance of computations and the amount of money spent. A cloud services broker helps to choose the provider and optimal configuration, making this topic relevant.

The aim of the study. The target of the study is to develop software that selects a cloud services provider for the chosen service based on a range of parameters and provides a user interface for the ordered service.

The object of research: selection of a cloud provider and its configuration for computing a cloud function.

The subject of research: software for brokering cloud services from various providers.

To achieve the stated goal, the **following tasks** were formulated:

- Analyze the cloud computing market.
- Analyze multi-criteria optimization algorithms.
- Develop a methodology for selecting a cloud services provider and the configuration of the cloud computing environment.
- Develop a software product that implements the described methodology in practice.
- Conduct experimental studies to demonstrate the effectiveness of the proposed solution.

The scientific novelty of the results of the master's dessertation is a methodology for selecting a cloud services provider and the configuration of the cloud computing environment has been proposed, allowing for more efficient cloud computations.

The practical value of the obtained results lies in the implemented software product, which enables users to order a cloud function from providers with a configuration that best suits their needs.

Relationship with working with scientific programs, plans, topics. Work was carried out at the Department of Informatics and Software Engineering of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute".

Approbation. The scientific positions of the dissertation were tested at the VI International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies SoftTech-2024" – Kyiv.

Publications. The scientific positions of the dissertation are published in:

1) Maltsev O.S. Software for Cloud Services Brokerage // Proceedings of the Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies SoftTech-2024" – Kyiv: KPI named after Igor Sikorsky, May 21-23, 2024.

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