



**REVIEW**

## A Systematic Literature Review on Task Allocation and Performance Management Techniques in Cloud Data Center

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### ABSTRACT

As cloud computing usage grows, cloud data centers play an increasingly important role. To maximize resource utilization, ensure service quality, and enhance system performance, it is crucial to allocate tasks and manage performance effectively. The purpose of this study is to provide an extensive analysis of task allocation and performance management techniques employed in cloud data centers. The aim is to systematically categorize and organize previous research by identifying the cloud computing methodologies, categories, and gaps. A literature review was conducted, which included the analysis of 463 task allocations and 480 performance management papers. The review revealed three task allocation research topics and seven performance management methods. Task allocation research areas are resource allocation, load-Balancing, and scheduling. Performance management includes monitoring and control, power and energy management, resource utilization optimization, quality of service management, fault management, virtual machine management, and network management. The study proposes new techniques to enhance cloud computing work allocation and performance management. Shortcomings in each approach can guide future research. The research's findings on cloud data center task allocation and performance management can assist academics, practitioners, and cloud service providers in optimizing their systems for dependability, cost-effectiveness, and scalability. Innovative methodologies can steer future research to fill gaps in the literature.

### KEYWORDS

Cloud computing; data centre; task allocation; performance management; resource utilization



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**Appendix A: A criteria for quality assessment**


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Criteria	Yes	No
<b>Part 1: Question for Screening papers</b>		
Is the paper related to task allocation in cloud data centers?		
Is the paper related to the performance of cloud data centers?		
<b>Part 2: Question for Screening papers</b>		
Is the study aiming to focus on task and performance-related issues?		
Did any subcategories focus on the paper?		
<b>Part 3: Detailed Questions</b>		
Was the data mentioned in the paper apt for comparison?		
Are the important parameters for comparative analysis specified?		
Is the study considered explicitly?		
Did the study mention how the system and subject were identified and selected?		
<b>Part 4: Detailed Questions</b>		
Did the study mention types of task allocation?		
Did the study mention types of performance management approaches?		
How efficiently is task allocation classified?		
Did the study mention the type of tool used or is it inferred from the study?		
Tools Used Was the tool used specified?		
Did the author develop a new tool or utilize existing tools for analysis?		

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