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New Scheduling Algorithms for Cost Optimization in Economic Computational Grids

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Abstract

In economic computational grids, resources have prices and the users must pay for executing their applications. The user determines his deadline and budget and then requests cost or time optimization. A scheduling algorithm that adopts cost optimization strategy, should allocate heterogeneous grid resources to heterogeneous user jobs so that their execution finishes in the specified deadline with minimum cost. In this paper, three new algorithms for are proposed for this purpose. Using computer simulations, It is shown that the proposed algorithms have higher performance comparing to the existing algorithms.

Keywords

Computational Grid, Economic Scheduling, Cost Optimization.

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BCO⁸

MI

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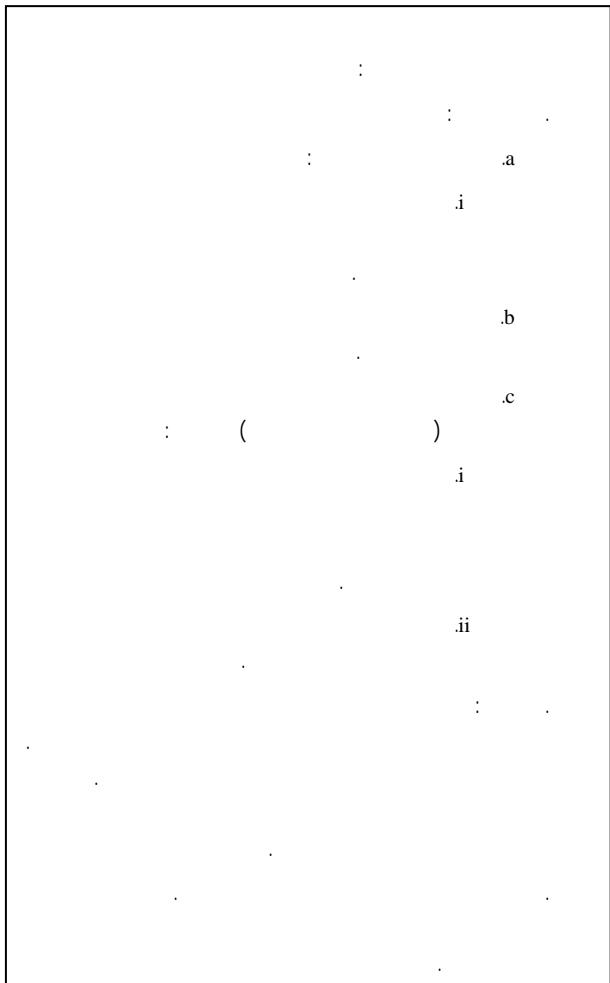
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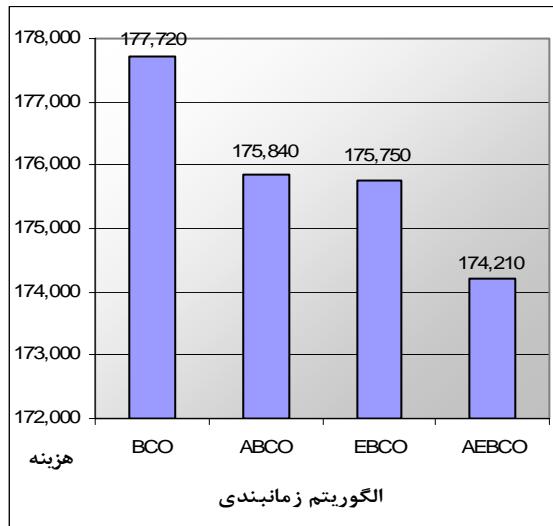
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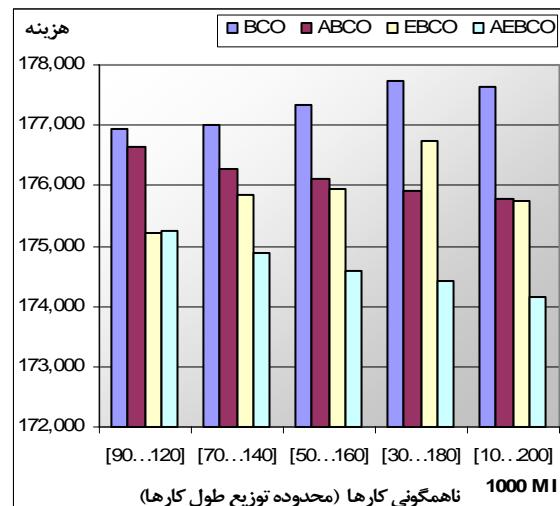
AEBCO ()
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			R8

AEBCO

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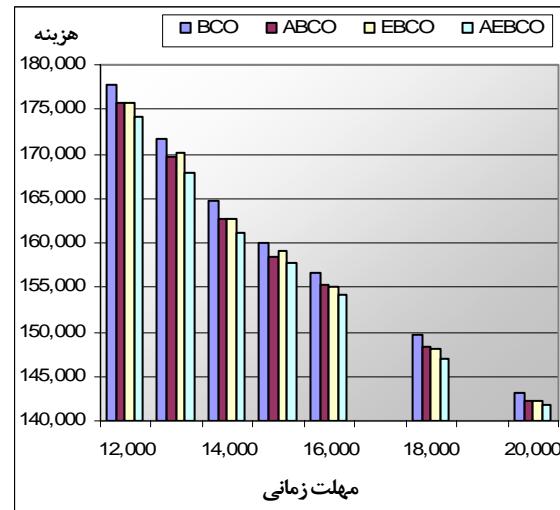


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BCO



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GridSim

¹ Computational Grids

² Heterogeneous

³ Workstations

⁴ Commodity Market Model

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- ⁵ Heterogeneous
 - ⁶ Deadline
 - ⁷ Heuristic
 - ⁸ Buyya Cost Optimization
 - ⁹ Parameter Sweep Applications
 - ¹⁰ Advanced Buyya Cost Optimization
 - ¹¹ Extended Buyya Cost Optimization
 - ¹² Advanced Extended Buyya Cost Optimization
 - ¹³ Million Instruction
 - ¹⁴ Homogeneous
 - ¹⁵ Time-shared
 - ¹⁶ Space-shared
 - ¹⁷ Overload
 - ¹⁸ Resource Discovery
 - ¹⁹ Resource Trading
 - ²⁰ Admission Control
 - ²¹ Dispatching