

Document details

< Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More...

View at Publisher

2018 IEEE 5th International Conference on Engineering Technologies and Applied Sciences, ICETAS 2018
28 January 2019, Article number 8629169
5th IEEE International Conference on Engineering Technologies and Applied Sciences, ICETAS 2018; AIT Conference Center Bangkok; Thailand; 22 November 2018 through 23 November 2018; Category number CFP18N08-ART; Code 144743

Prediction-based Resource Allocation Model for Real-Time Tasks (Conference Paper)

Qureshi, M.S.^a, Qureshi, M.B.^b, Raza, A.^a, Qayyum, N.U.^a, Shah, A.^a

^aDepartment of Computer Science, International Islamic University, Kulliyah of Information and Communication Technology, Kuala Lumpur, Malaysia

^bDepartment of Computer Science, Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology, Islamabad, 46000, Pakistan

Abstract

View references (25)

High Performance Computing (HPC) platform provides computing, storage, and communication facilities to process real-time applications efficiently. Such applications produce less important results if the deadlines are missed. Most of the real-time algorithms decently schedule application tasks offline, but they usually take longer in processing which results in deadlines miss when tasks need some data from remote storage locations. In this paper, we propose a prediction-based model which analyze tasks feasibility before scheduling on the HPC resources when tasks have data-intensive constraints. The main advantage of the prediction analysis module is to save time by refraining further analysis on non-schedulable tasks. The model helps in searching suitable resources and improved resource utilization by considering task workload in advance. © 2018 IEEE.

SciVal Topic Prominence

Topic: Cloud computing | Clouds | workflow scheduling

Prominence percentile: 97.723

Author keywords

HPC Real-Time Systems Resource Allocation Scheduling

Indexed keywords

Engineering controlled terms: Digital storage Forecasting Interactive computer systems Resource allocation Scheduling Scheduling algorithms

Engineering uncontrolled terms: Application tasks Communication facilities High performance computing (HPC) Prediction-based Real time algorithms Real-time application Resource allocation model Resource utilizations

Engineering main heading: Real time systems

Metrics

0 Citations in Scopus
0 Field-Weighted Citation Impact



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert >

Set citation feed >

Related documents

Cost efficient resource allocation for real-time tasks in embedded systems

Min-Allah, N. , Qureshi, M.B. , Alrashed, S. (2019) *Sustainable Cities and Society*

Hard real-time task scheduling in cloud computing using an adaptive genetic algorithm

Mahmood, A. , Khan, S.A. , Bahloul, R.A. (2017) *Computers*

Energy Efficient and Deadline Satisfied Task Scheduling in Mobile Cloud Computing

Tang, C. , Xiao, S. , Wei, X. (2018) *Proceedings - 2018 IEEE International Conference on Big Data and Smart Computing, BigComp 2018*

View all related documents based on references

Find more related documents in Scopus based on:

ISBN: 978-153867966-1
Source Type: Conference Proceeding
Original language: English

DOI: 10.1109/ICETAS.2018.8629169
Document Type: Conference Paper
Publisher: Institute of Electrical and Electronics Engineers Inc.

References (25)

[View in search results format >](#)

All Export Print E-mail Save to PDF Create bibliography

-
- 1 Qureshi, M.B., Alrashed, S., Min-Allah, N., Kołodziej, J., Arabas, P.
Maintaining the feasibility of hard real-time systems with a reduced number of priority levels [\(Open Access\)](#)

(2015) *International Journal of Applied Mathematics and Computer Science*, 25 (4), pp. 709-722. Cited 4 times.
<http://www.degruyter.com/view/j/amcs.2012.22.issue-3/issue-files/amcs.2012.22.issue-3.xml>
doi: 10.1515/amcs-2015-0051

[View at Publisher](#)
-
- 2 Laplante, P.A.
(2004) *Real-Time Systems Design and Analysis*. Cited 284 times.
-
- 3 Zhang, Y.-F., Tian, Y.-C., Fidge, C., Kelly, W.
Data-aware task scheduling for all-to-all comparison problems in heterogeneous distributed systems

(2016) *Journal of Parallel and Distributed Computing*, 93-94, pp. 87-101. Cited 7 times.
<http://www.elsevier.com.ezproxy.um.edu.my/inca/publications/store/6/2/2/8/9/5/index.htm>
doi: 10.1016/j.jpdc.2016.04.008

[View at Publisher](#)
-
- 4 Hussain, H., Malik, S.U.R., Hameed, A., Khan, S.U., Bickler, G., Min-Allah, N., Qureshi, M.B., (...), Rayes, A.
A survey on resource allocation in high performance distributed computing systems

(2013) *Parallel Computing*, 39 (11), pp. 709-736. Cited 65 times.
doi: 10.1016/j.parco.2013.09.009

[View at Publisher](#)
-
- 5 Abdullahi, M., Ngadi, M.A.
Hybrid symbiotic organisms search optimization algorithm for scheduling of tasks on cloud computing environment [\(Open Access\)](#)

(2016) *PLoS ONE*, 11 (6), art. no. e0158229. Cited 27 times.
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0158229>
doi: 10.1371/journal.pone.0158229

[View at Publisher](#)
-
- 6 Xie, T., Qin, X.
Enhancing security of real-time applications on grids through dynamic scheduling

(2006) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 3834 LNCS, pp. 219-237. Cited 9 times.
ISBN: 354031024X; 978-354031024-2
-