

Using imbalance characteristic fro fault tolerant workflow scheduling in cloud systems

Abstract:

Cloud computing has emerged as an attractive platform for diverse tasks, as it allows for low-entry costs, reduced cost of maintaining IT infrastructure and on demand heterogeneous resources provisioning in a pay-as-you-go model . Empowered by the flexibility and elasticity of using computing resources, Cloud systems give customers the illusion of unlimited resources and have been widely adopted by increasing customers for their tasks, such as data storage and scientific computing.

Existing system:

In the existing system Zheng and Veeravalli designed two communication-aware fault-tolerant workflow scheduling algorithms based on replication to avoid the influence caused by the processors faults and communication delays. However, the above replication based fault-tolerant algorithms are designed for Grid systems and cannot be used in Cloud systems directly. Recently, Jing and Liu designed a replication based fault-tolerant scheduling algorithm called CCRH for workflow in Cloud systems. However, the on-demand resource provisioning model of Cloud systems is not considered.

Disadvantages:

- (1) The deadline of workflow is also not considered in the existing systems
- (2) The resource consumption is deteriorated caused by replication.

Proposed system:

The main contributions of this paper are as follows. Firstly, a deadline division scheme is designed to divide the soft deadline of workflow into multiple sub-deadlines for all tasks.

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Secondly, a novel fault-tolerant workflow scheduling algorithm called ICFWS is proposed to combine resubmission and replication together to play their respective advantages in the context of fault. Thirdly, an online reservation adjustment scheme is presented to adjust the sub-deadlines and fault-tolerant strategies of some unexecuted tasks during the task execution process. Finally, an on-demand resource provisioning strategy is designed during the resource reserving process in the context of combining the above two fault-tolerant strategies together.

Advantages:

1. In order to take full advantage of time slot, we have designed the online reservation adjustment scheme.
2. To evaluate the performance of the proposed ICFWS, a series of simulations are conducted on both real-world and randomly generated workflows.

SYSTEM REQUIREMENTS

H/W System Configuration:-

- Processor - Pentium –III
- RAM - 256 MB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

S/W System Configuration:-

- Operating System : Windows95/98/2000/XP
- Application Server : Tomcat5.0/6.X
- Front End : HTML, Jsp
- Scripts : JavaScript.
- Server side Script : Java Server Pages.
- Database : MySQL 5.0

- Database Connectivity : JDBC

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