

ICE: An Integrated Configuration Engine for Interference Mitigation in Cloud Services

Track Code: 2015-BAGC-67232

Categories:

- Computer Technology

Keywords:

- Big Data
- Cloud Computing
- Computer Technology

Cloud computing is rapidly growing into a disruptive technology that changes our everyday lives. The scalability, elasticity, high availability, and reduction in infrastructure and labor cost offered by cloud computing has enterprises rapidly moving their storage and online services to the cloud. The key technology that underlies all cloud services is known as server virtualization, a process of allocating the dedicated resources of a virtual machine fairly between users. However, a problem with partitioning these resources fairly exist that can impact the performance of virtual machines called performance interference.

Researchers at Purdue University have developed a technology that mitigates the problem of performance interference in a nonintrusive and lightweight manner by leveraging the configurations in existing load balancers and web servers to predict and apply good configurations during periods of interference. This solution can be incorporated into existing cloud services with ease and includes an interference detector based on hardware countermeasurements in addition to a two-level configuration engine for mitigating interference in web server clusters.

Advantages:

- Nonintrusive solution to performance interference
- Detects and mitigates interference quickly in changing conditions

Potential Applications:

- Cloud computing
- Cloud infrastructures
- Server efficiency

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Intellectual Property:

Application Date: July 6, 2016
Type: Utility Patent
Country of Filing: United States
Patent Number: 10,310,883
Issue Date: June 4, 2019

Application Date: June 4, 2019
Type: CON-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Application Date: July 6, 2015
Type: Provisional-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

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