**A Scalable and Reliable Matching Service forContent-Based Publish/Subscribe Systems**

**ABSTRACT:**

Characterized by the increasing arrival rate of live content, the emergency applications pose a great challenge: how todisseminate large-scale live content to interested users in a scalable and reliable manner. The publish/subscribe (pub/sub) model iswidely used for data dissemination because of its capacity of seamlessly expanding the system to massive size. However, most eventmatching services of existing pub/sub systems either lead to low matching throughput when matching a large number of skewedsubscriptions, or interrupt dissemination when a large number of servers fail. The cloud computing provides great opportunities for therequirements of complex computing and reliable communication. In this paper, we propose SREM, a scalable and reliable eventmatching service for content-based pub/sub systems in cloud computing environment. To achieve low routing latency and reliable linksamong servers, we propose a distributed overlay SkipCloud to organize servers of SREM. Through a hybrid space partitioningtechnique HPartition, large-scale skewed subscriptions are mapped into multiple subspaces, which ensures high matching throughputand provides multiple candidate servers for each event. Moreover, a series of dynamics maintenance mechanisms are extensivelystudied. To evaluate the performance of SREM, 64 servers are deployed and millions of live content items are tested in a CloudStacktestbed. Under various parameter settings, the experimental results demonstrate that the traffic overhead of routing events inSkipCloud is at least 60 percent smaller than in Chord overlay, the matching rate in SREM is at least 3.7 times and at most 40.4 timeslarger than the single-dimensional partitioning technique of BlueDove. Besides, SREM enables the event loss rate to drop back to 0 intens of seconds even if a large number of servers fail simultaneously.

**EXISTING SYSTEM:**

* In traditional data dissemination applications, the live content are generated by publishers at a low speed, which makes many pub/subs adopt the multi-hop routing techniques to disseminate events.
* A large body of broker-based pub/subs forward events and subscriptions through organizing nodes into diverse distributed overlays, such as treebased design, cluster-based design and DHT-based design.

**DISADVANTAGES OF EXISTING SYSTEM:**

* The system cannot scalable to support the large amount of live content.
* The Multihop routing techniques in these broker-based systems lead to a low matching throughput, which is inadequate to apply to current high arrival rate of live content.
* Most of them are inappropriate to the matching of live content with high data dimensionality due to the limitation of their subscription space partitioning techniques, which bring either low matchingthroughput or high memory overhead.

**PROPOSED SYSTEM:**

* Specifically, we mainly focus on two problems: one is how to organize servers in the cloud computing environment to achieve scalable and reliable routing. The other is how to manage subscriptions and events to achieve parallel matching among these servers.
* We propose a distributed overlay protocol, called SkipCloud, to organize servers in the cloud computing environment. SkipCloud enables subscriptions and events to be forwarded among brokers in a scalable and reliable manner. Also it is easy to implement and maintain.
* To achieve scalable and reliable event matching among multiple servers, we propose a hybrid multidimensional space partitioning technique, called HPartition. It allows similar subscriptions to be divided into the same server and provides multiple candidate matching servers for each event. Moreover, it adaptively alleviates hot spots and keeps workload balance among all servers.

**ADVANTAGES OF PROPOSED SYSTEM:**

* We propose a scalable and reliable matching service for content-based pub/sub service in cloud computing environments, called SREM.
* We propose a hybrid multidimensionalspace partitioning technique, called HPartitionSSPartition.
* To alleviate the hot spots whose subscriptions fall into a narrowspace, we propose a subscription set partitioning,
* Through a hybrid multi-dimensionalspace partitioning technique, SREM reaches scalable and balanced clustering of high dimensional skewed subscriptions

**SYSTEM ARCHITECTURE:**

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**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Pentium IV 2.4 GHz.
* Hard Disk : 40 GB.
* Floppy Drive : 1.44 Mb.
* Monitor : 15 VGA Colour.
* Mouse : Logitech.
* Ram : 512 Mb.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows XP/7.
* Coding Language : JAVA/J2EE
* IDE : Netbeans 7.4
* Database : MYSQL

**REFERENCE:**

Xingkong Ma, Student Member, IEEE, Yijie Wang, Member, IEEE, and Xiaoqiang Pei, “A Scalable and Reliable Matching Service forContent-Based Publish/Subscribe Systems”**IEEE TRANSACTIONS ON CLOUD COMPUTING, VOL. 3, NO. 1, JANUARY-MARCH 2015.**