

## **A new workload recognition strategy to improve the speed of resource provisioning in PaaS layer of cloud for real-time demands**

### **ABSTRACT**

The real-time system should guarantee that all critical timing constraints will be met in advance. Many distributed systems such as a cloud environment have a nondeterministic structure and it would cause a serious problem for real time, but the user can access a large number of shared resources. Also launching a new resource in the IaaS layer of a Cloud is not instantaneous. Prediction model, risk management in PaaS and monitoring in IaaS are the most important parts that a real-time system should have because they must face a challenge in understanding the system and the behavior of workload completely. The results of analyzing, monitoring and prediction have serious impacts on system reaction. Understanding the workload is an important challenge in all systems and they use different models to identify the types or predict changes over the time. A prediction model must have the ability to produce and shape the pattern of workloads with low overhead. In this study, we propose an enhancement for profiling process with continues Markov chain to make hosts deterministic for users. The effectiveness and the accuracy of the proposed model measured in the evolution part. Also, the number of the failed tasks counted in this new model to show how proposed model is successful.

**Keyword:** Anomaly detection; Cloud computing; Prediction model; Real-time; Time series