Abstract

Oracle RAC offers and provides very attractive and promising features for today's challenging market scenario, where safety and availability of database is the basic need and demand of clients who are working on mission critical databases. The two most alluring features which RAC provides are high availability and load balancing. Load balancing is performed by the load balancer which most of the time works as desired; but it is noticed that failure of load balancer could be a single point of failure for the entire RAC system. In the present research work our aim is to monitor the load balancing feature of Oracle RAC in order to keep a close watch on whether switchover between nodes is happening correctly and smoothly or not. The concept of relative entropy is taken as inspiration, which helps us compare the randomness of the nodes and also the entire RAC system. A script is designed to monitor the number of sessions in each node which should run at the expected peak hours. These peak hours are discovered by extensive monitoring of sessions in each node for 30 days continuously. A threshold limit for number of sessions in each respective node is to be defined in prior, which should be near about but less than maximum session limit defined for the load balancer. As soon as the number of sessions in a particular node reaches its threshold limit, an
email is sent to the DBA team which in turn alerts the team to keep a close watch on the switchover. In the proposed scheme the motto is to provide the client with a better service with the help of proper monitoring. To insure an even workload distribution, a clustered database must employ methods to distribute incoming sessions evenly and effectively across the various components of its cluster. As soon as the DBA gets email showing the threshold limit is reached, the DBA must become alert. If he notices that switchover or in other words load balancing is not happening properly, he can do a manual switchover to prevent the client from suffering with rejection of server. In present work Relative Entropy calculation technique is used as an inspiration to calculate the randomness of the RAC system based on its load balancing feature. Proposed scheme can minimize the cost as we can tune up the memory or SGA/PGA based on our result reducing the time to fetch as well. The Relative Entropy calculation scheme of detecting the randomness of Oracle RAC system is a truly new approach based on which we can monitor as well as forecast the behavior of its load balancing act. Proposed method also could help to detect any upcoming issue related to load balancing which could interrupt the client services. The proposed mechanism has overcome some of the limitations like it can be automated without any prior installation.

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Keywords

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