

NETWORK MEMORY: TWO DECADES OF RESEARCH TREND EVOLUTION AND DEVELOPMENT

Chandarasageran Natarajan
Wawasan Open University, Malaysia
Email: cnatarajan@wou.edu.my

Abstract

The initial memory classifications are internal and external memory, which is very simple and clear. We could differentiate and identify the divisions in term of the capacity, speed and the distance from the CPU. This is known as memory locality, where sometimes, cost could also be taken into consideration. In this study, we observed how the memory usage trend had evolved from the basic main memory (RAM) in initial computing era up to now with the state-of-art network technology advancement that made us recognize network memory as a new memory division which is essential resource. The shift of computing technology from host-centric to network-centric promises various research opportunity and expansion of existing fields to support new memory dimension [1]. A very interesting paradigm shift is involved in this computing environment, which would be an advantage for all concern. Our scrutiny and analysis in the research of trend evolution and development direction of memory usage shows that the following initiative would be possible using network memory. First, it introduces unique approaches to improve system performance versus resource availability at hand [2]. Second, it establishes usage of this technology in application front-end as well in the system back-end usage support [3]. Thirdly, we identify methods used in applying network memory to establish resource management in a network-computing environment [4]. In this way, we are able to present that the network memory is a crucial resource for Grid and cloud computing. Finally, we made a concrete proposal on the broader way of how this newly identified resource can be very useful in the future.

Keywords: Memory, CPU, Memory Locality, Trend Evolution, Network Memory, Grid and Cloud Computing.
