

Abstract

Computer networks have increasingly become vital to organizations' business processes. Network users due to their specific demands, expect optimal performance, this in turn places demand on network managers to ensure that network management functions are optimally run. The Present network management approach, simple network management protocol (SNMP) is a Client/Server centrally administered setup, which has shortcomings in view of the emergent demands on network. The shortcoming emanate from the configuration design. In view of this, an innovative approach of mobile agent (MA) technology is introduced in the management of networks.

The research objectives focused on whether mobile agents technology is a viable option for deployment in network management, development of a simple MA model and an evaluation of the same. The study was carried out by way of modeling and simulation, where key input variable were identified to realistically model behaviour patterns of agents in networks. An evaluation of the mobile agent performance was carried out by comparing against SNMP by examining performance parameters of Capacity, Traffic and Throughput.

The research revealed that mobile agents do indeed perform better at handling various network tasks compared to SNMP approach with respect to performance parameters of capacity, traffic and throughput. The research concludes that indeed mobile agents are a viable option, though have challenges of cost and security. It further recommends that other areas that can be explored in mobile agent technology be security enhancement, minute analytic study of networks to develop a full representative model and lastly physical development of a mobile agent system for network management.