

THE EVALUATION OF AN ACTIVE NETWORKING APPROACH FOR SUPPORTING THE QOS REQUIREMENTS OF DISTRIBUTED VIRTUAL ENVIRONMENTS

Abstract

This paper describes work that is part of a more general investigation into how Active Network ideas might benefit large scale Distributed-Virtual-Environments (DVEs). Active Network approaches have been shown to offer improved solutions to the Scalable Reliable Multicast problem, and this is in a sense the lowest level at which Active Networks might benefit DVEs in supporting the peer-to-peer architectures considered most promising for large scale DVEs. To go further than this, the key benefit of Active Networking is the ability to take away from the application the need to understand the network topology and delegate the execution of certain actions, for example intelligent message pruning, to the network itself. The need to exchange geometrical information results in a type of traffic that can place occasional, short-lived, but heavy loads on the network. However, the Level of Detail (LoD) concept provides the potential to reduce this loading in certain circumstances.

This paper introduces the performance modelling approach being used to evaluate the effectiveness of active network approaches for supporting DVEs and presents an evaluation of messages filtering mechanisms, which are based on the (LoD) concept. It describes the simulation experiment used to carry out the evaluation, presents its results and discusses plans for future work.