Vortrag

Am Mittwoch, 05.10.2011 findet um 10.00 h in Raum 220, Gebäude S3|20, Rundeturmstraße 10 ein Vortrag von

Herrn Prof. Dr. Thomas Plagemann, University of Oslo, statt.

Title: CacheCast: Eliminating Redundant Link Traffic for Single Source Multiple Destination Transfers

Abstract: The first part of the talk will give a brief overview on the current research activities and achievements of the Distributed Multimedia Systems Research Group at the University of Oslo. This includes video streaming in MANETs and disruptive environments, publish subscribe for sparse MANETs, and deviation detection with complex event processing for automated home care systems. The second part will focus on CacheCast, which is joint work with Lancaster University and has been initiated in the Content NoE. Due to the lack of multicast services in the Internet, applications based on single source multiple destinations transfers such as video conferencing, IP radio, IPTV must use unicast or application layer multicast. This in turn has several well-known drawbacks. We propose CacheCast - a link layer caching mechanism - that eliminates the redundant data transmissions using small caches on links. CacheCast's underlying principles are simplicity and reliability. It is a fully distributed and incrementally deployable architecture. We show through analysis and simulation that CacheCast achieves near multicast efficiency for superposition of unicast connections. We implemented CacheCast in ns-2 and show that it does not violate the current understanding of "fairness" in the Internet. To evaluate the costs of server support, we have designed and implemented a new system call for CacheCast support. The system call separates all CacheCast concerns from an application with a simple and easy to understand API. Evaluation results show a negligible overhead of the system call when compared to the standard send call. Our modified streaming server is able to handle an order of magnitude more clients than the original server in a bandwidth constrained environment.

Short Biography: Thomas Plagemann is Professor at the University of Oslo since 1996. Currently, he leads the research group in Distributed Multimedia Systems at the Department of Informatics.