A lightweight semantic overlay resource discovery

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Abstract:
A new semantic overlay for network MediaPorts resource discovery, that enables an efficient and accurate service location, was proposed. MediaPorts are network side functions used in the media path between the source and the sink. They enable the adaptation of media content by providing value added services such as caching, synchronization and/or special routing functions. The new approach was proposed to solve the problem of inefficiency and the production of large message overhead typical for traditional approaches to resource-discovery. This contribution is based on a widely studied family of chordal rings called the optimal chordal ring. In addition to the semantics of offered services, the proposed solution is also based on the geographical locations of nodes. This results in a fault-resilient and efficient structure that can be used for semantic-based service discovery. Simulation results are presented to validate the effectiveness of the new approach compared to several other service-discovery solutions.
Published in: Telecommunications and Malaysia International Conference on Communications, 2007. ICT-MICC 2007. IEEE International Conference on
Date of Conference: 14-17 May 2007
Date Added to IEEE *Xplore*: 08 February 2008
ISBN Information:

INSPEC Accession Number: 9829296
DOI: 10.1109/ICTMICC.2007.4448580
Publisher: IEEE
Conference Location: Penang, Malaysia