

EINLADUNG

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Ort: AH VI., Ahornstr.55

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Titel: Efficient, self-contained handling of identity
in peer-to-peer systems

Abstract:

Identification is an essential building block for many services in distributed information systems. The quality and purpose of identification may differ, but the basic underlying problem is always to bind a set of attributes to an identifier in a unique and deterministic way. Name/directory services such as DNS, X.500, or UDDI are a well-established concept to address this problem in distributed information systems. However, none of these services addresses the specific requirements of peer-to-peer systems with respect to dynamism decentralization and maintenance. We propose the implementation of directories using a structured peer-to-peer overlay network and apply this approach to support self-contained maintenance of routing tables with dynamic IP addresses in structured P2P systems. Thus we can keep routing tables intact without affecting the organization of the overlay networks, making it logically independent of the underlying network infrastructure. Even though the directory is self-referential, since it uses its own service to maintain itself, we show that it is robust due to a self-healing capability. For security we apply a combination of PGP-like public key distribution and a quorum-based query scheme. We describe the algorithm as implemented in the P-Grid P2P lookup system (<http://www.p-grid.org/>) and give a detailed analysis and simulation results demonstrating the efficiency and robustness of our approach.

Es laden ein: Die Dozenten der Informatik