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一种基于信息交换的层次型快速移动IPv6切换机制

彭 军, 张 伟, 郭 迎, 丁晨阳, 孟庆俊

(中南大学 信息科学与工程学院, 湖南 长沙, 410075)

摘要: 针对现有移动IPv6切换延迟大、分组丢失率高问题, 提出一种基于信息交换的层次型快速移动IPv6切换(IFHMI Pv6)机制。设计一种信息交换机制, 使移动节点可预知领域内各接入路由器之间的邻居关系及相应的第2层和第3层信息; 结合分层切换和快速切换, 在分层移动IPv6上调整快速移动IPv6的信令流程, 简化切换准备阶段操作; 通过设置隧道定时器, 保留在原路由器中建立的隧道。研究表明: IFHMI Pv6在减少无线接入网络发现延迟和候选路由器发现延迟的基础上, 进一步减少了总体切换延迟和分组丢失率, 降低移动节点乒乓运动引入的信令开销; IFHMI Pv6的切换延迟和分组丢失率比FMIPv6和HMIPv6的低。

关键字: 移动IPv6; 信息交换; IFHMI Pv6; 切换延迟

Information exchange-based fast handover scheme for hierarchical mobile IPv6

PENG Jun, ZHANG Wei, GUO Ying, DING Chen-yang, MENG Qing-jun

(School of Information Science and Engineering, Central South University, Changsha 410075, China)

Abstract: To resolve the problem of long handover delay and high packets loss in MIPv6, an information exchange-based fast handover scheme for Hierarchical Mobile IPv6 (IFHMIPv6) was proposed. With information exchange, mobile node foreknows the neighboring relationship among access routers and their related information. After combining FMIPv6 and HMIPv6, the operation in anticipation phase was simplified by adjusting signaling flow of FMIPv6 over HMIPv6. Furthermore, IFHMIPv6 sets a tunnel timer for reserving the tunnel established in the previous network. The results show that IFHMIPv6 can reduce the time of radio access network discovery and candidate access router discovery, the total handover delay and packets loss, and large signaling cost introduced by mobile node's ping-pong movement. The performance of IFHMIPv6 handover is excellent.

Key words: MIPv6; information exchange; IFHMIPv6; handover delay

电话： 0731-88879765 传真： 0731-88877727

电子邮箱： zngdxb@mail.csu.edu.cn 湘ICP备09001153号