

情感驱动的自私MANETs节点协商机制

杨杨* 邱雪松 孟洛明 高志鹏*

北京邮电大学网络与交换技术国家重点实验室 北京 100086

An Emotion-driven Negotiation Mechanism of Selfish Nodes in the MANETs

Yang Yang Qiu Xue-song Meng Luo-ming Gao Zhi-peng*

State Key Laboratory of Networking and Switching Technology, Beijing University of Posts and Telecommunications, Beijing 100086, China

摘要

参考文献

相关文章

Download: PDF (487KB) [HTML](#) 1KB Export: BibTeX or EndNote (RIS) [Supporting Info](#)

摘要 在移动Ad hoc网络(MANETs)中, 具有不同工作环境和目标的自私节点追求最大化自身利益, 因此需要一种有效的激励手段促进彼此间的协作和资源共享。情感作为影响节点认知和行为决策的重要因素, 能够帮助节点在资源有限、不可预知的场景中增强适应性和自治性。该文提出一种情感驱动的自私MANETs节点协商机制(Emotion-driven Negotiation of Selfish Nodes in the MANETs, ENSNM), 将情感因素定义为自私MANETs节点内在的能力和属性。协商初始阶段, 成就动机的强烈程度支配节点发起或参与一次协商, 同时影响初始价的设定。另外, 在每轮协商开始前遵循韦伯-费希纳定律对协商最后期限进行修正。仿真实验表明ENSNM机制能够提高MANETs网络的协商效率, 并减少网络流量和通信能耗。

关键词: 移动Ad hoc网络 协商 情感 成就动机 韦伯-费希纳定律

Abstract: As mobile ad hoc networks have become increasingly intricate and intelligent, selfish mobile nodes with different global goals need to be stimulated to cooperation and share resources. Emotion has a crucial impact on an agent's cognition and behaviors, enhances its flexibility to adapt to the resources-restricted and unpredictable conditions. This paper represents an Emotion-driven Negotiation of Selfish Nodes in the MANETs (ENSNM), in which the emotion models such as achievement motivation, Weber-Fechner law that execute throughout negotiation as inherent attributes of mobile nodes. Achievement motivation determines whether a node sponsors or participates in a negotiation as well as the principle of setting initial price in the preliminary stage. Moreover, the deadline of a negotiator is dynamically modified by the Weber-Fechner law throughout the negotiation. Simulation results demonstrate the model can improve negotiation efficiency, reduce network traffic and energy consumption.

Keywords: MANETs Negotiation Emotion Achievement motivation Weber-Fechner law

Received 2010-10-09;

本文基金:

国家973计划项目(2007CB310703), 国家科技重大专项(2011ZX03005-004-02)和国家自然科学基金(60821001, 60902050, 60802035)资助课题

通讯作者: 杨杨 Email: yyang@bupt.edu.cn

引用本文:

杨杨, 邱雪松, 孟洛明, 高志鹏. 情感驱动的自私MANETs节点协商机制[J] 电子与信息学报, 2011, V33(6): 1294-1300

Yang Yang, Qiu Xue-Song, Meng Luo-Ming, Gao Zhi-Peng. An Emotion-driven Negotiation Mechanism of Selfish Nodes in the MANETs[J], 2011, V33(6): 1294-1300

链接本文:

<http://jeit.ie.ac.cn/CN/10.3724/SP.J.1146.2010.01072> 或 <http://jeit.ie.ac.cn/CN/Y2011/V33/I6/1294>

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [杨杨](#)
- ▶ [邱雪松](#)
- ▶ [孟洛明](#)
- ▶ [高志鹏](#)