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网络、通信与安全

P2P计算网格路由和负载均衡算法

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摘要 路由和负载均衡是P2P计算网格的两个技术难题,由于P2P网络的分布性和动态性,以及缺乏统一的中心控制,使得传统的路由和负载均衡算法不能应用于P2P网络。提出了一种源自蚁群智能的混合路由和负载均衡算法,通过移动代理,即人工蚂蚁在节点间移动时所释放的信息素来作为路由和任务调度的依据。仿真结果表明该算法是有效的,且适用于具有分散和自组织特性的P2P网络。

关键词 P2P 网格计算 群体智能 蚁群优化算法 负载均衡

分类号

Based routing and load-balancing algorithm for peer-to-peer computing grid

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Abstract

Routing and load-balancing are two tasks particularly hard in Peer-to-Peer（P2P） computing grid.Traditional routing and load-balancing algorithms can not be applied to P2P networks，due to distributed and dynamic environment and the lack of central control,This paper presents a hybrid P2P routing and load-balancing algorithm which draws inspiration from ant collective intelligence,mobile agents-artificial ants deposit pheromone that used by taking routing decision and task scheduling when traveling between nodes.Simulation results show that the algorithm is effective and adapted to decentralized and self-organized P2P network.

Key words P2P grid computing swarm intelligence Ant Colony Optimization（ACO） load balancing

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