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论文

对等计算中的基于多移动Agent的协作联盟机制

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摘要

对等计算技术为Internet这样开放式的、动态变化的网络环境里各节点间的协同工作，进行复杂的分布式业务处理提供了运行基础设施。但是P2P环境中各节点随机加入和退出网络的、工作承担者事先不确定等特点也为工作的顺利完成带来了困难。该文提出一种对等计算环境中基于多移动Agent的柔性的、动态的协作联盟机制，适合部署于复杂、多变的应用环境之中，以克服对等节点协作的困难。主要思想是在某一需求目标的驱动下，主导节点建立项目，经过工作主体遴选，形成暂时的、优化的协作联盟，在复杂的处理流程的规范下，基于合作承诺，联合完成项目设定的任务。该文还将该机制应用于构建虚拟的敏捷企业供应链管理原型系统，以此证明了该机制的实用性价值。

关键词　　对等计算　协作联盟　多移动Agent　供应链

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The Collaboration Alliance Mechanism of P2P Based on Mobile Multi-agent Technology

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Abstract

Peer to Peer (P2P) computing technology provides the basic operation facility for collaborations among nodes of open and dynamic network (esp. Internet) and complicated distributed business processing. However, it is difficult to accomplish such works successfully because of some inherent facts of P2P environment, such as peers could randomly join in or quit the P2P network, which make it hard to choose appropriate task undertakers before the project is constructed. In this paper, a flexible and dynamic collaboration alliance mechanism of P2P based on mobile multi-agent technology is proposed. The collaboration alliance mechanism can be deployed in complex and changeful environments to overcome the difficult problem of peers' collaboration, which is working as the following ways: driven by one demand, the leader peer constructs the project; after the work undertakers are all selected, the temporary and optimized collaboration alliance is formed; according to the workflow, the leader peer and other work peers collaborate to accomplish the tasks of the project based on their commitments. The mechanism is also utilized to build the agile Supply Chain Management (SCM) system to verify its practical value.

Key words　　Peer to Peer computing　Collaboration alliance　Mobile multi-agent　Supply chain

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