计算机工程与应用 2009 45 (14): 116-118 ISSN: 1002-8331 CN: 11-2127/TP

网络、通信、安全

基于捕食模型与蚁群算法的多约束QoS路由选择

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收稿日期 2008-3-19 **修回日期** 2008-5-19 **网络版发布日期** 2009-5-8 **接受日期**

摘要 针对多约束QoS路由选择问题，将其转化为一个多约束赋权图，求符合最小时延和最小丢包率且满足最小成本的多目标问题。利用捕食模型调整最小时延和最小丢包率这两个目标的权值，快速找到非劣解集；再结合蚁群算法很强的全局寻优能力，完成最小成本的路由选择。实例计算结果证明了算法的可行性。

关键词 多约束QoS路由选择 多目标 捕食模型 非劣解集 蚁群算法

分类号

Multiple constrained QoS routing based on prey-predator model and ant colony algorithm

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Abstract

The paper transforms multiple constrained QoS routing problem into the multi-objective problem which can satisfy the minimum delay，the minimum packet loss rate firstly and then the minimum cost by a multiple constrained assign-weigh chart aiming at it.The paper uses the prey-predator model to find the non-inferior set immediately by adjusting the objects right of the minimum delay and the minimum packet loss rate.Also the ant colony algorithm has accomplished ultimate routing with the minimum cost by using the ability of searching the global optimization.The experiment results show that the algorithm is effective.

Key words multiple constrained QoS routing multi-objective prey-predator model non-inferior set ant colony algorithm

DOI: 10.3778/j.issn.1002-8331.2009.14.035

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