

# 基于时延协方差的多径路由探测

## 摘要

当下的 internet 测量方法当中通常都是假设源地址到目的地只有一条路径，然而负载均衡引起的多径路由在时下的网络当中越来越常见，这个问题影响了当下大部分的网络测量的结果。在本文中，我们试图提出一种能够识别多径路由的方法，在单路径情形下的报文传输概率与在多径路由情形下具有一定的区分性。然后通过报文到达的顺序，提出一种能够分辨多径路由网络的方法。通过仿真实验以及理论分析证明了我们提出的方法具有极低的失效性。

索引项-网络层析成像，负载均衡，多路径，traceroute

## **Abstract**

In the current internet measurement methods, there is usually only one path from the source address to the destination, but the multi-path routing caused by load balancing is becoming more and more common in the current network. This problem affects the results of most current network measurements. In this paper, we try to propose a method that can identify multi-path routing. The probability of message transmission in the case of single path is different from that in the case of multi-path routing. Then, through the order of packet arrival, a method to distinguish the multipath routing network is proposed. Simulation experiments and theoretical analysis show that the proposed method has very low invalidity.

Index term-Network Tomography, load balancing, multipath, traceroute

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