Billing Users and Pricing for TCP
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Abstract
This paper presents a system for billing users for their TCP traffic. This is achieved by postponing the establishment of connections while the user is contacted, verifying in a secure way that they are prepared to pay. By presenting the user with cost and price information, the system can be used for cost recovery and to encourage efficient use of network resources. The system requires no changes to existing protocols or applications and can be used to recover costs between cooperating sites. Statistics collected from a four day trace of traffic between the University of California, Berkeley and the rest of the Internet demonstrate that such a billing system is practical and introduces acceptable latency. An implementation based on the BayBridge prototype router is described. Our study also indicates that pricing schemes may be used to control network congestion either by rescheduling time-insensitive traffic to a less expensive time of the day, or by smoothing packet transfers to reduce traffic peaks.

Keywords
Internet economics, network tracing, usage-accounting.

Full-text of document
The full-text of this document is available here.

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