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Abstract
In the Internet, network advertisement payment is one of the major incomes of Websites. In general, the amount of advertisement fee paid from advertisers to websites depends on the number of visits. Thus, Web servers may inflate the number of visits for gaining more money. In order to achieve the billing fairness, how to correctly measure the number of visits is very important. A Web metering scheme is used to measure the number of visits for websites and verify the correctness of metering result. It allows a Web server to create a proof for the number of visits to convince an advertiser and collect reasonable advertisement fees. Recently, some metering schemes based on cryptographic techniques have been proposed. This paper will first introduce the concept of Web metering schemes and then review some existed metering schemes. Moreover, this paper will propose two Web metering schemes: a threshold computationally secure metering scheme based on the bilinear pairings, and an efficient metering scheme based on a one-way hash function and bit-XOR operation. The threshold computationally secure metering scheme can be built on any GDH Group. The efficient metering scheme based on the one-way hash function and bit-XOR operation is pretty efficient and can protect the privacy of clients. Both of the proposed Web metering schemes can against fraud attempts by dishonest Web servers to inflate the number of visits, and against fraud attempts by attackers or malicious clients to disturb the metering results.
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