

Architectures for Sharing Internet Accesses

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1 Context

Nowadays, Internet access is provided by telecommunication companies (**telcos**), using many different billing policies. In many cases clients do not take full advantage of their Internet connections, being thus possible to share them with other **guest clients**. Such sharing, when complemented with a rewarding system, could reduce the effective cost of the Internet connections held by **sharing clients**.

Such sharing and rewarding raise many practical and security issues; we anticipate the following three. First, guest clients should be able to get access to billing plans defined by sharing clients, possible together with one or more telcos, and payment mechanisms must be defined and deployed for handling the rewarding system. Second, telcos used by sharing clients should be able to distinguish, clearly and unequivocally, the traffic of guest clients from the traffic of sharing clients; this requirement is critical for enforcing the legal liability of guest clients. Third, sharing clients should not being able to observe or change the traffic of their guest clients.

2 Goals

The goal of this work is to define one or more architectures for implementing this shared Internet access. The architectures must take into consideration many different requirements, namely identification of clients, billing, rewarding, accounting, secure communication and anonymity. The architecture should also be designed in order to be attractive to all involved partners – Internet provider, sharing client and guest client.

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