Conversas Hiperligadas: Novo Paradigma de Comunicação e Colaboração, potenciado pela Tecnologia WebRTC

Henrique Lopes Rocha
hdlopesrocha91@gmail.com

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Abstract

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1 Introduction

The need to build a global comunication network in an era when almost nobody had access to it, caused that some protocols weren't suitable for a huge increase on the amount of publicly known users. IPv4 limits the number of public addresses in such a way that today are scarse [1]. One way to overcome this problem was the development of a mechanism that groups multiple address into a single one, the machine that is assigned that address is then responsible to redirect messages to members of its group through their private addresses, each element is identified publicly by the same IP address but different ports, this technique is also know as Network Address Translation (NAT).

Initially NAT offered an alternative for address exhaustion and a false sensation of better security, asymetric NAT became a vulgar configuration on the web. As a direct result, problems started to appear, the amount of ports that IP disponibilizes is also small compared to our current needs, worse than that, NAT also difficults end-to-end communication, forcing most of applications that follows this model to be implemented unificiently.

Applications based on multimedia and file sharing were one of the most strained. To enable end-to-end comunication, one could simulate it via intermediate public servers or using STUN and TURN servers to overpass NAT.

Client-Server models aren't suitable for real time comunication between two private end points. For example, amongst multiple alternatives, a messaging service could be implemented through a publish subscriber schema or by polling a messaging server. Clearly this type of communication requires a more expensive infrastructure and, at most cases, more network usage, leading to a worse quality of service. The requirements of video comunication makes this kind of model out of question.

Efforts were made by Skype and Google to provide real time comunication between two or more entities, either having public or private addresses.

References

[1] Next Generation Internet: IPv4 Address Exhaustion, Mitigation Strategies and Im-

plications for the U.S. - An IEEE-USA White Paper - 2009