T10 - [...in] Content-Delivery Networks

Afonso Silva, Alfredo Gomes, and Axel Ferreira

University of Minho, Department of Informatics, 4710-057 Braga, Portugal
e-mail: {a70387,a71655,a53064}@alunos.uminho.pt

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Abstract. Resumo...

1 Introduction

The Internet has it's origins in the early 1980's. And started to have an exponential growth when commercial companies started linking to the existing academic and military networks during the 90's. As the popularity if the Internet increased the number of devices connected started to see an exponential growth.
At the time (analogue) networks were unreliable and thus internet communication protocols were designed in a robust fashion. There are multiple RTTs (Round-trip Time) (30-50 per page). TCP is a reliable but slow starting protocol. Hypertext Transfer Protocol (HTTP) was designed to survive multiple packet losses and thus being very chatty, this causes a latency problem over long distance communication. Modern (digital) networks are faster and more reliable, but most of the core protocols above don't take advantage of the increased reliability.
@@@@@@@@@@(DUE TO Backwards compatibility ??????)@@@@@@@@@@@@@@
Another problem introduced with the ever growing popularity of the internet was caused as connection speeds started to grow when content increased in size. New technologies star to provide images, videos and other dynamic content. This caused a bottleneck problem at the origin (content providers). With the continuous Internet growth a response was necessary to solve the above problems and Content Delivery Networks started to emerge (in 95's)..

2 $\surd mbitodeaplica\surd\surd £o$

Netflix FHD 5Mbit/seg UHD 25Mbit/seg
According to Table 1...

(a) Delay and jiiter	(b) Delay and loss
(c) Delay and throughput	(d) Jitter and loss
(e) Jitter and throughput	(f) Loss and throughput

Fig. 1. Tabela exemplo.

3 Desafios associados

4 Propostas relevantes na $\surd°rea$

5 Lista de projetos atuais

Free CDNs BootStrap CDN
CloudFlare

CCDN
Incapsula
...
Telco CDN
AT&T
Verizon
...
Traditional CDNs
Akamai
Amazon
Windows Azure
HP Cloud
CloudFlair
...
Commercial CDN P2P
BitTorrent
Internap
...

6 Conclusion and Future Work

CDN - Content-delivery Network DCDN - Distributed Content-delivery Network DNS - Domain Name System RTT - round-trip time PoP - Points of Presence ASP - Application Service Provider SaaS - Software as a Service Caching - Mirroring -

References

1. Zadeh, L.: Fuzzy sets (1965)
2. Nguyen, H., Walker, E.: First course in fuzzy logic. Boca Raton: Chapman and Hall/CRC Press (1999)