

Apache Traffic Server

Uma alternativa ao Squid

Heitor de Souza Ganzeli
Analista de Projetos
CEPTRO.BR - Nic.br

Problema

Como aumentar de forma eficiente a velocidade de conexão dos usuários?

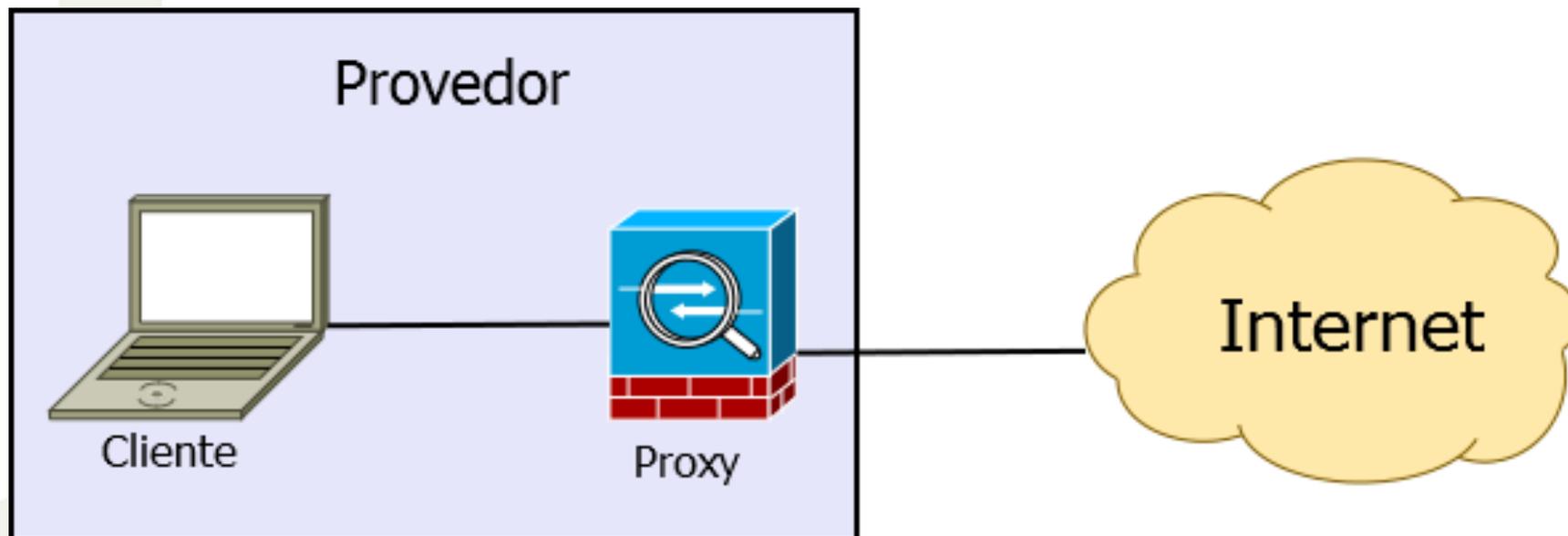
Problema

O que afeta a velocidade de conexão?

- Estabelecimento da sessão TCP
- Controle de fluxo
- Consultas DNS
- ...

Proxies

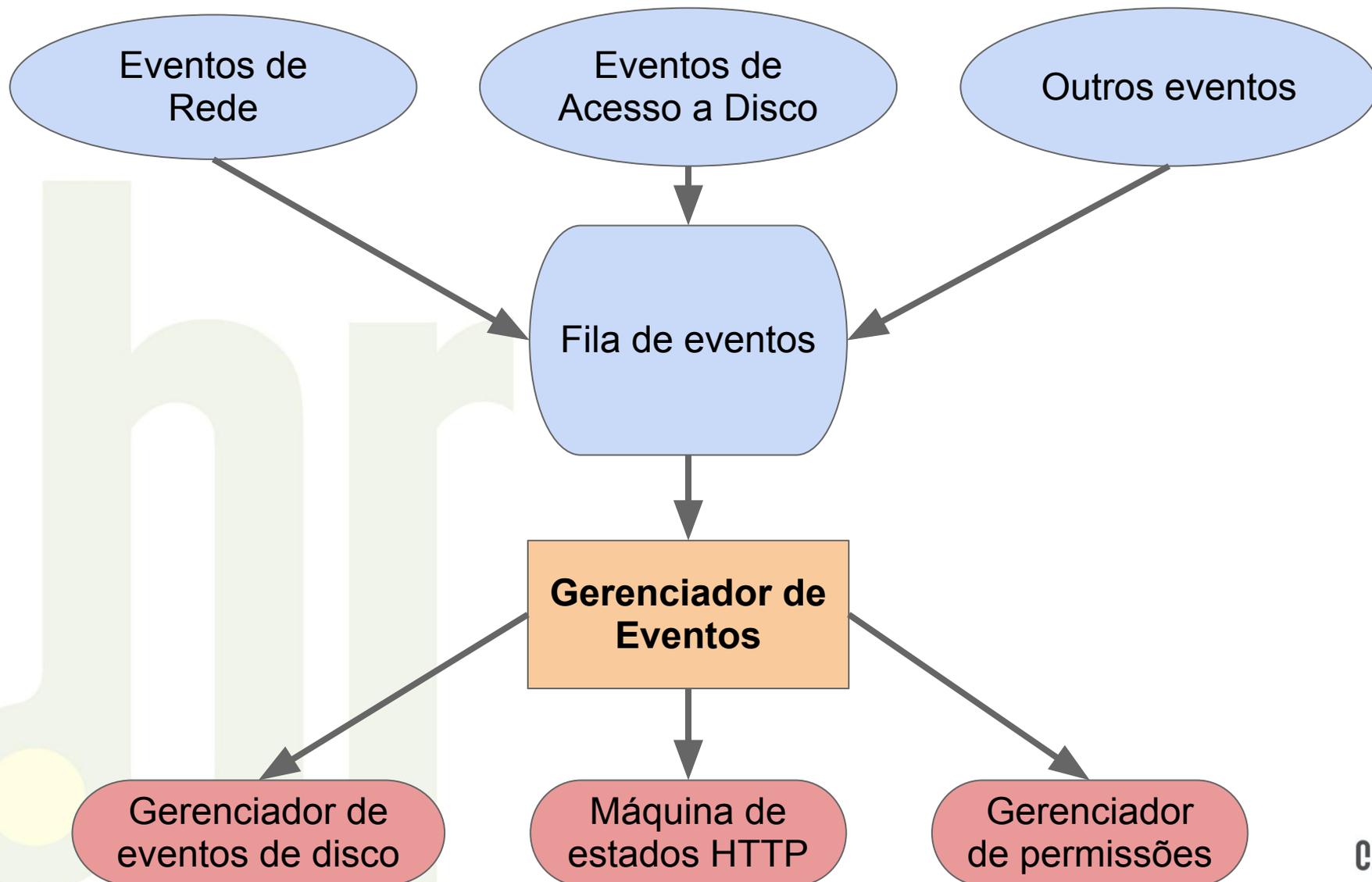
Ajudam a minimizar esses problemas para grandes massas de usuários



Features

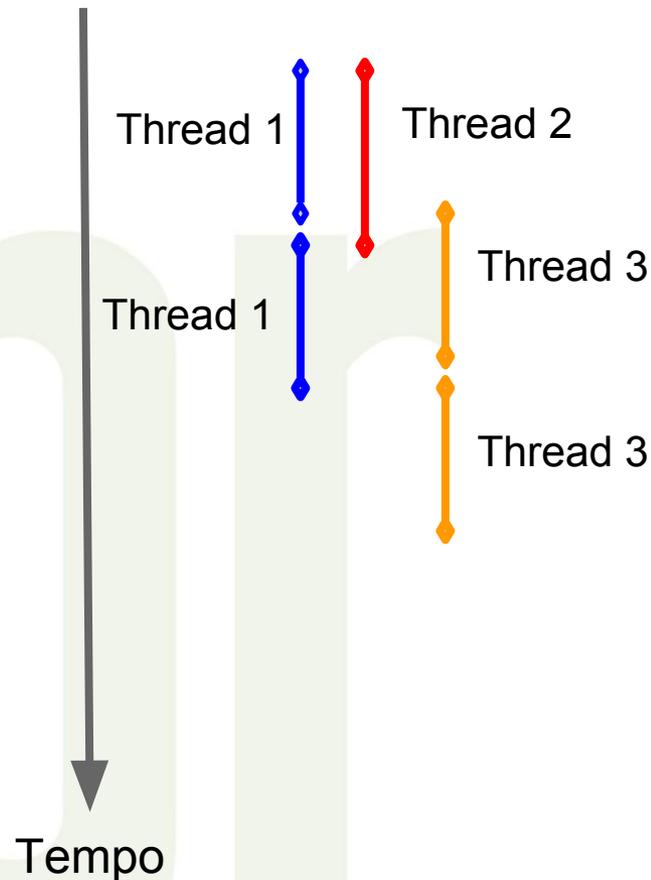
	ATS	Squid
Worker Threads	s	n
Multi Processo	n	n
Orientado a eventos	s	s
API para plugins	s	parcial
Proxy Direto	s	s
Proxy Reverso	s	s
Proxy Transparente	s	s
Balanceamento de carga	fraco	s
Cache persistente	s	s
ESI	s	s
ICP	quebrado	s
Keep-Alive	s	s
SSL	s	s
Pipeline	s	s

Arquiteturas - Squid

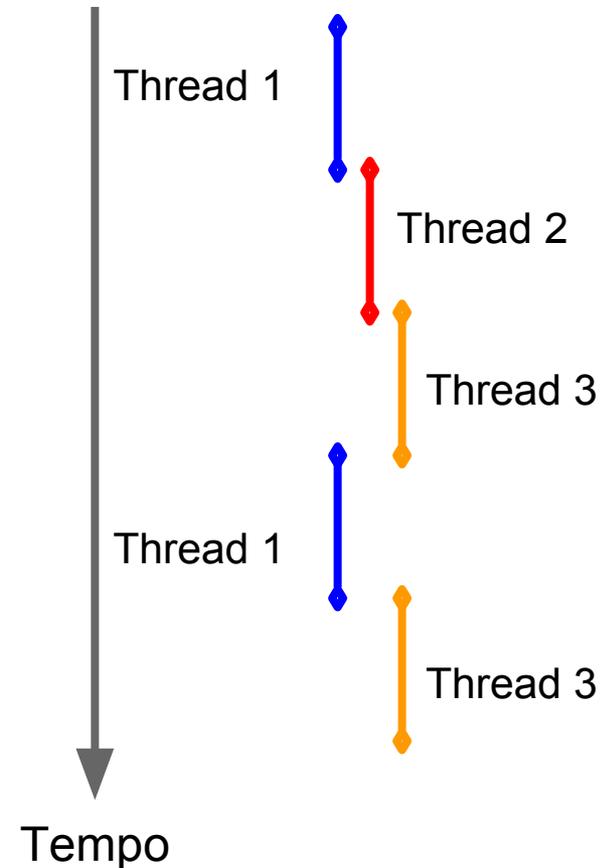


Problema dessa arquitetura

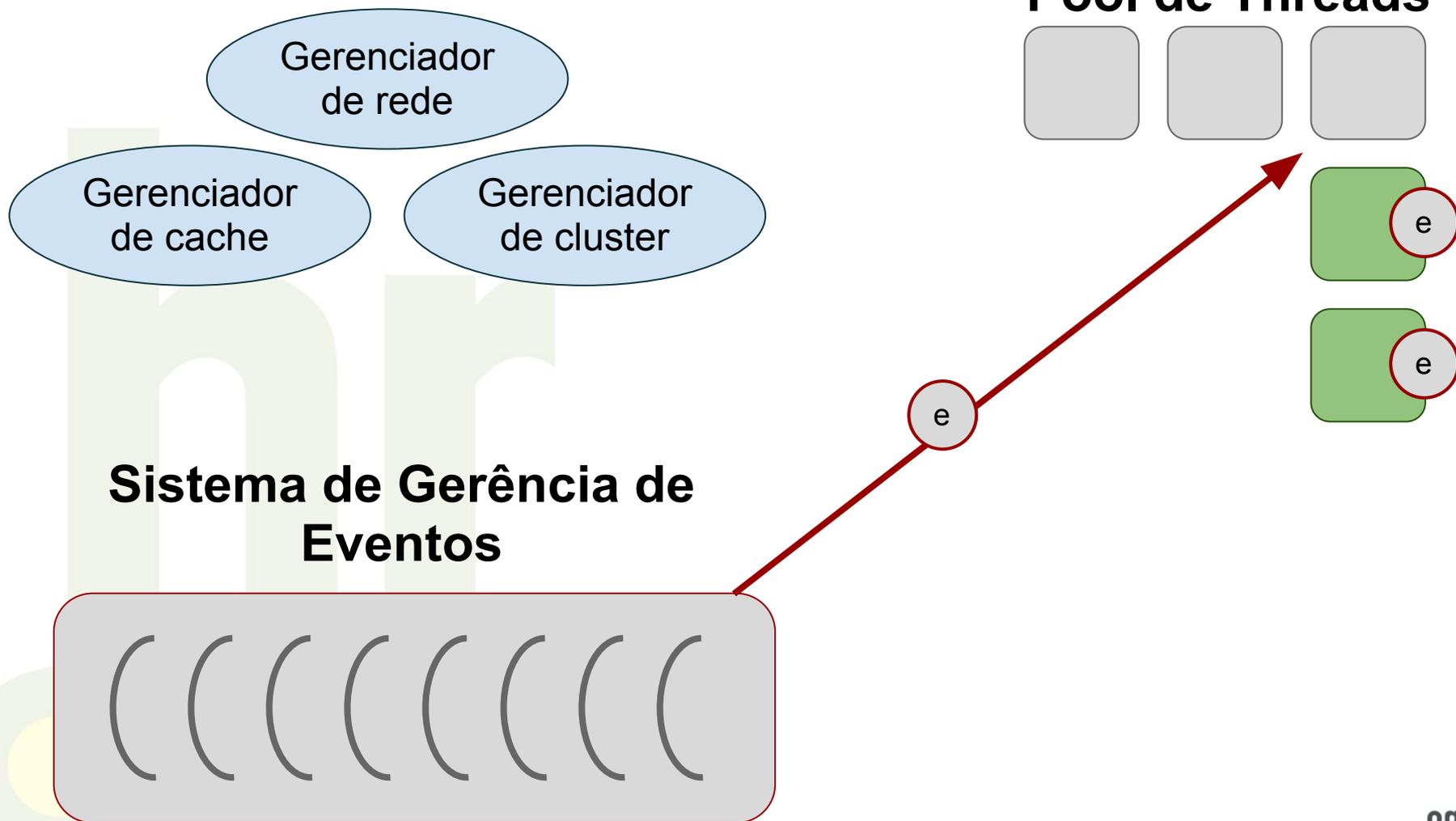
multi thread



single thread



Arquitetura - Traffic Server

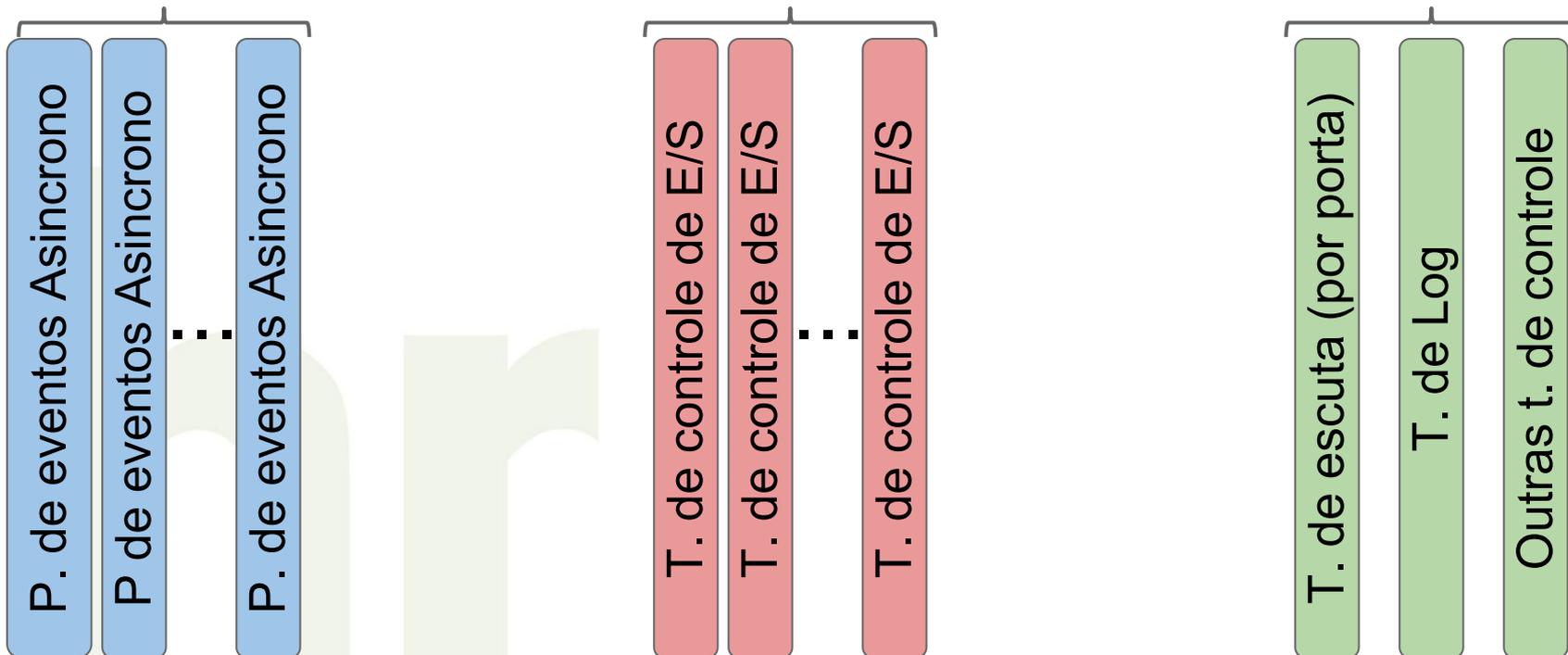


Modelo de threads

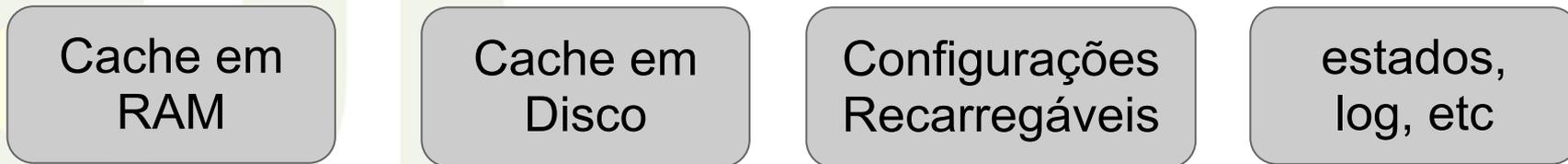
n threads por core

m threads por disco

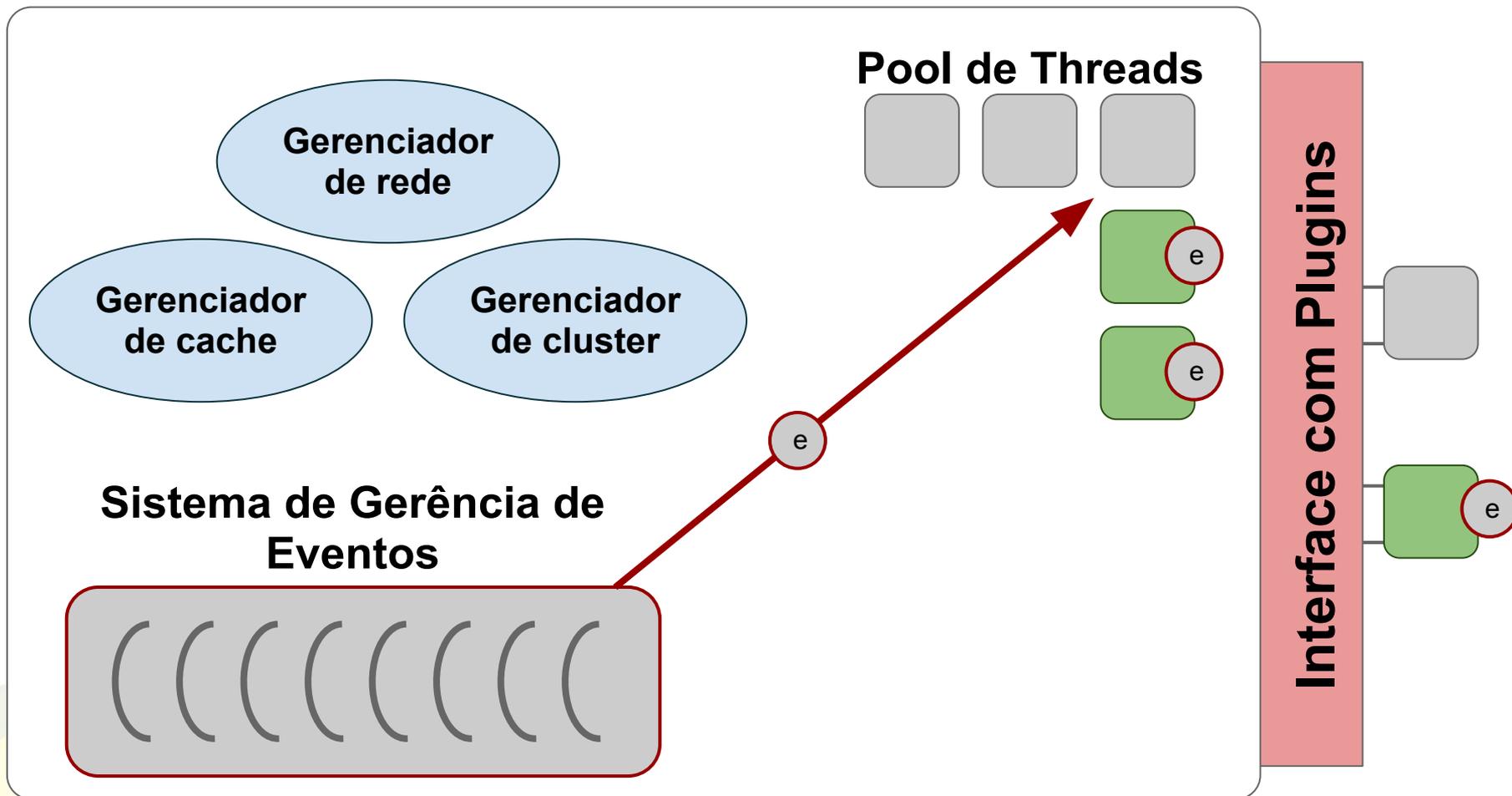
~ 10 Threads



Recursos Compartilhados



Arquitetura - Traffic Server



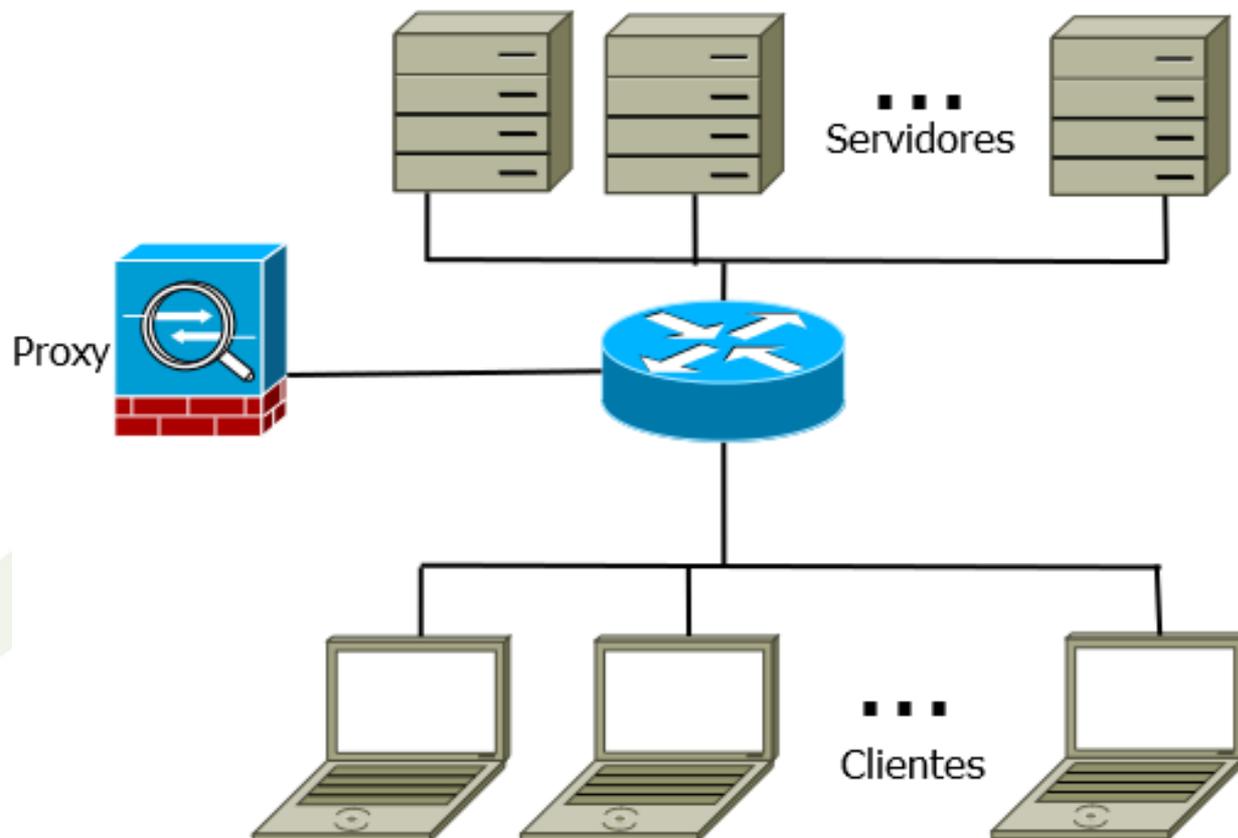
Testes

- Hardware

- Servidores
- Proxy
- Clientes

- Ferramentas

- web polygraph
- webbench



webbench

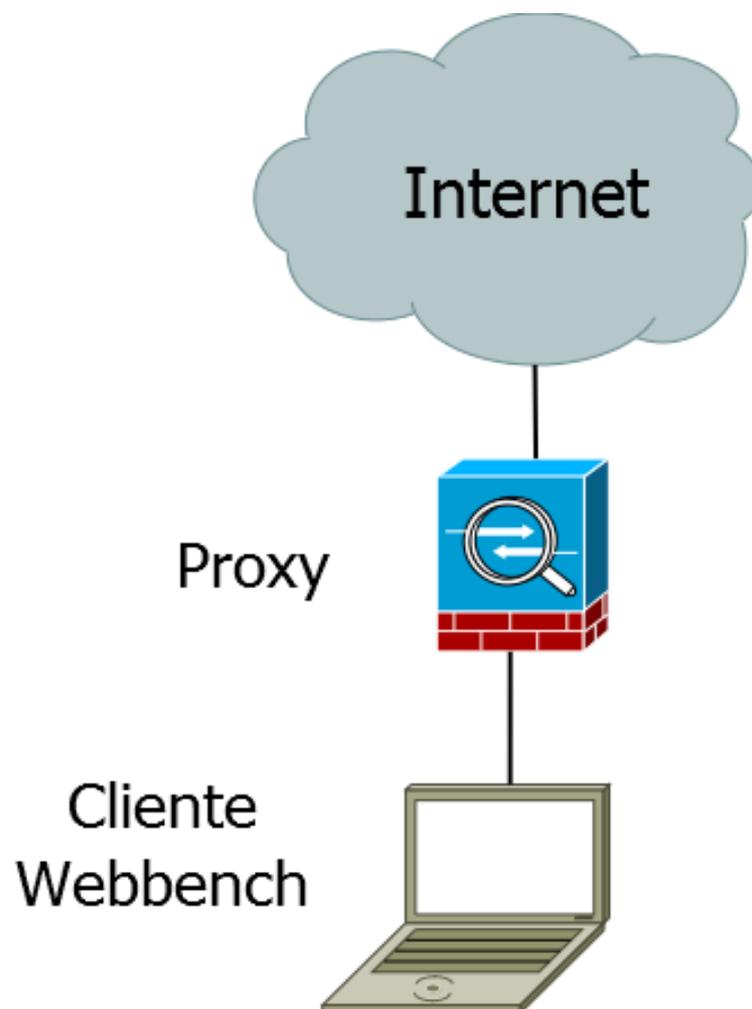
Permite a simulação de:

- Múltiplos clientes

Simple

Boa performance

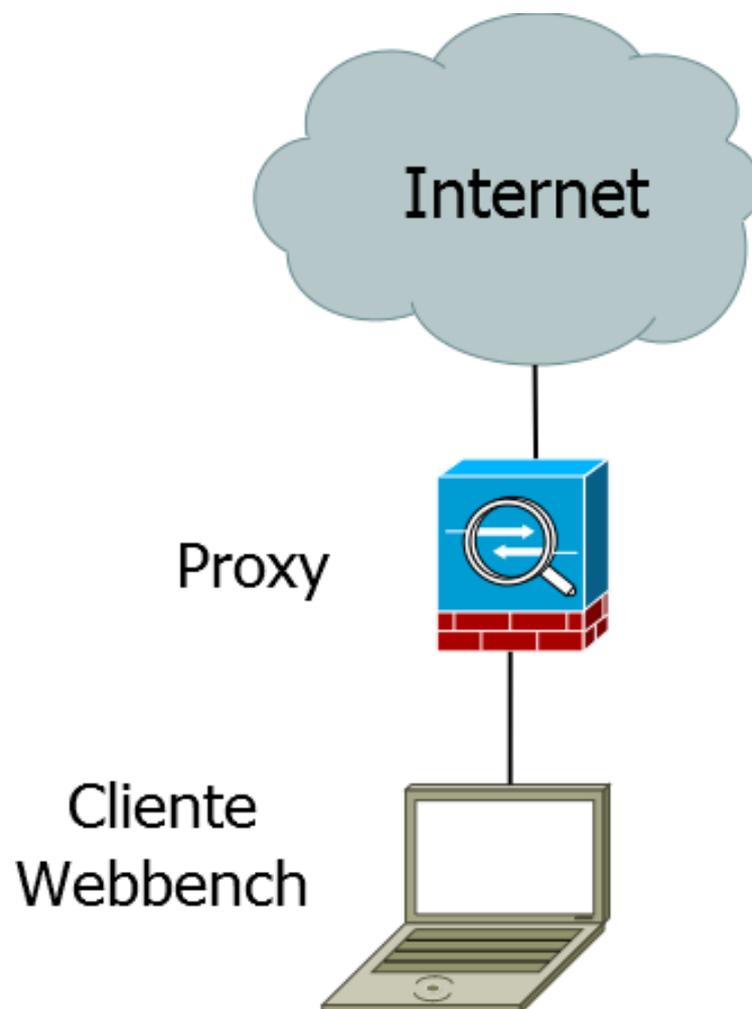
durante simulações



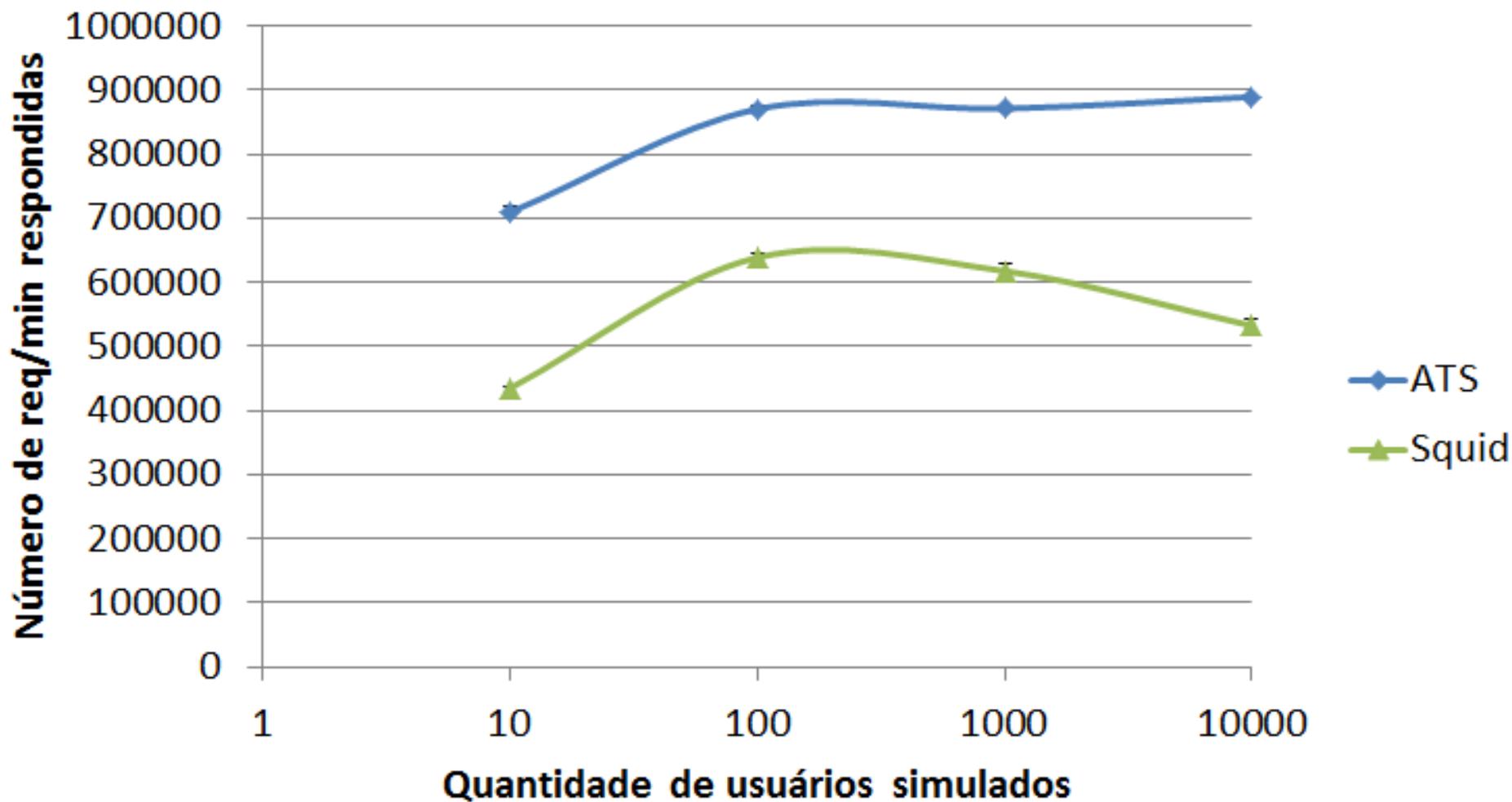
Hardware utilizado para os testes

Duas máquinas com:

- Intel Xeon E5620 - 2.4GHz
- 16GB ram
- Ubuntu 10.04



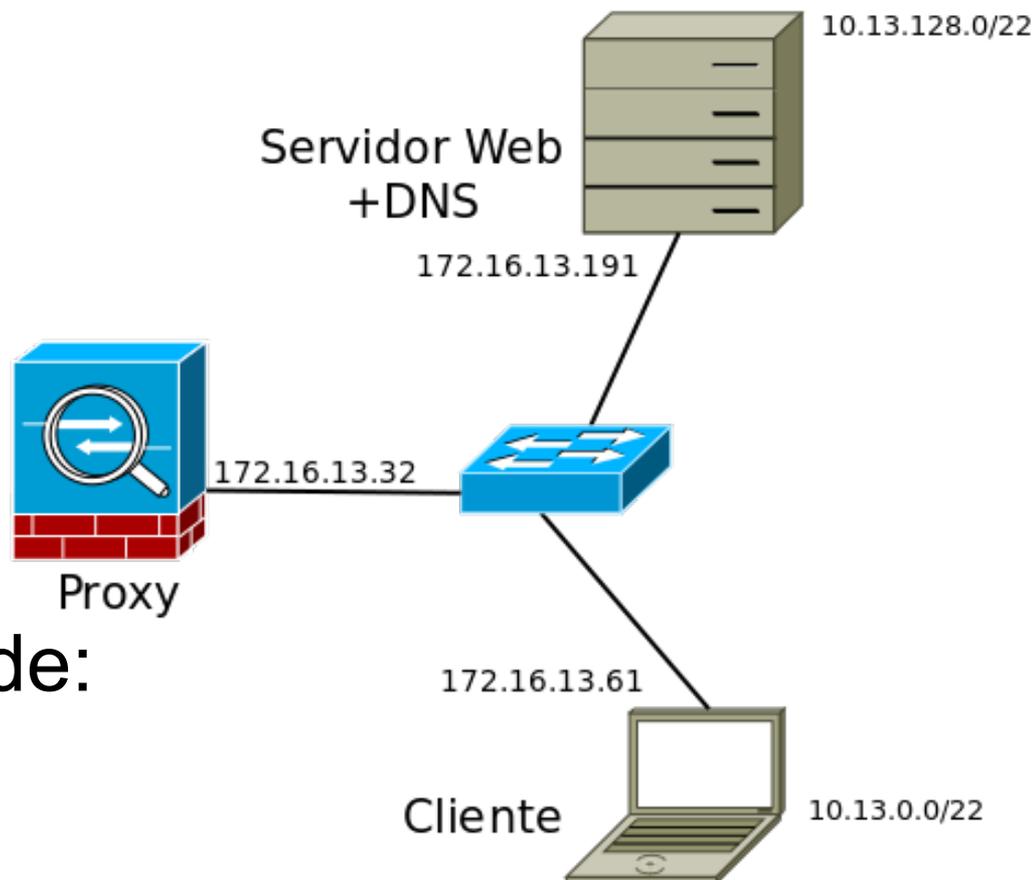
Principais resultados



Web Polygraph

Permite a simulação de:

- Servidores Web
- Clientes
- Conteúdo Web realista



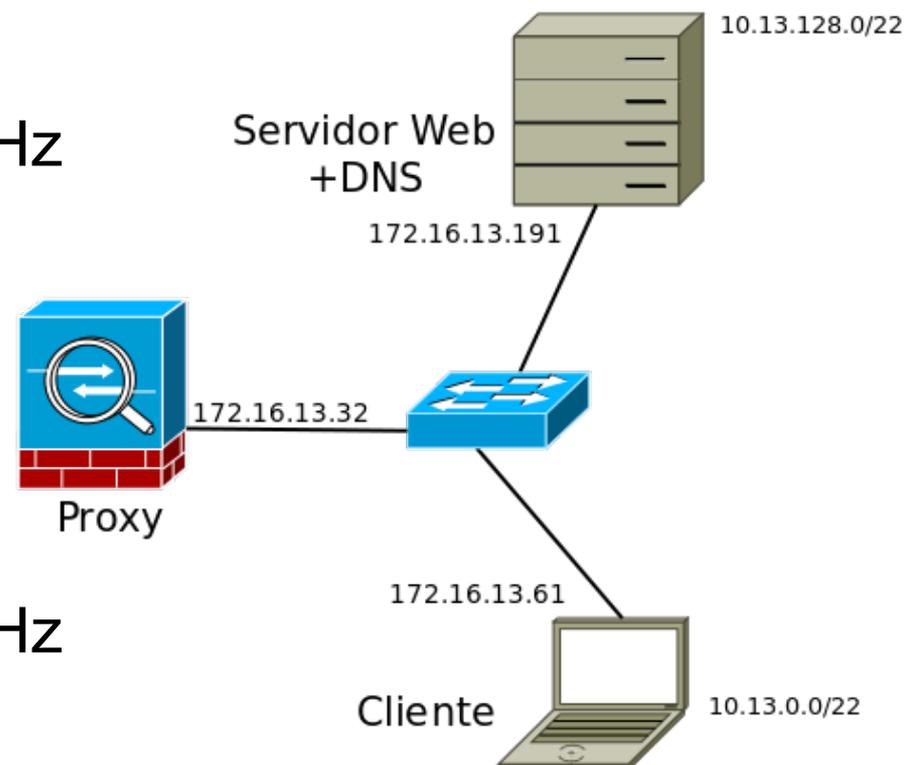
Hardware utilizado para os testes

Duas máquinas com:

- Intel Xeon E5620 - 2.4GHz
- 16GB ram
- Ubuntu 10.04

Uma com:

- Intel Xeon E5530 - 2.4GHz
- 8GB ram
- Ubuntu 12.04



Principais resultados

	Squid	ATS
throughput	103.48xact/sec or 10.84Mbits/sec	305.82xact/sec or 22.35Mbits/sec
response time	2.22sec mean	258msec mean
hit ratios	5.58% DHR and 6.70% BHR	25.35% DHR and 25.55% BHR
unique URLs	38983xact (91.87% recurrence)	81694xact (83.96% recurrence)
errors	74.11% (355201xact out of 479307xact)	48.87% (248859xact out of 509182xact)
duration	20.00min	20.14min

Principais resultados - ATS

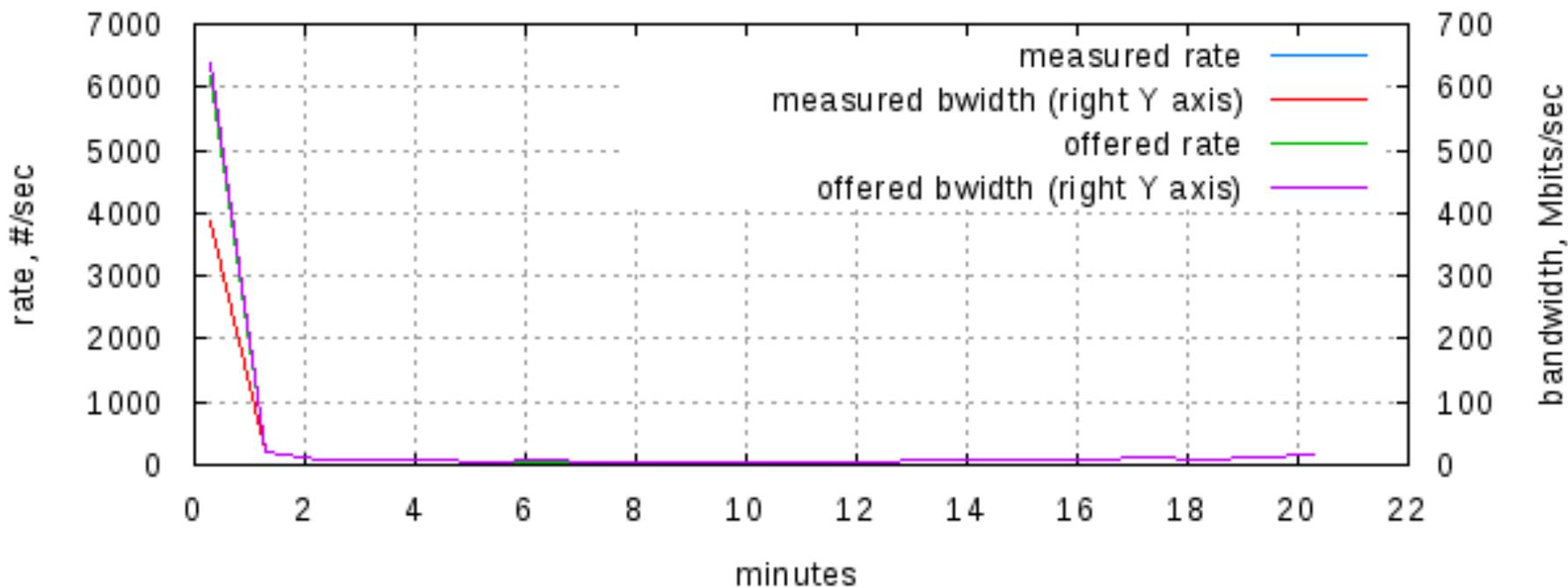
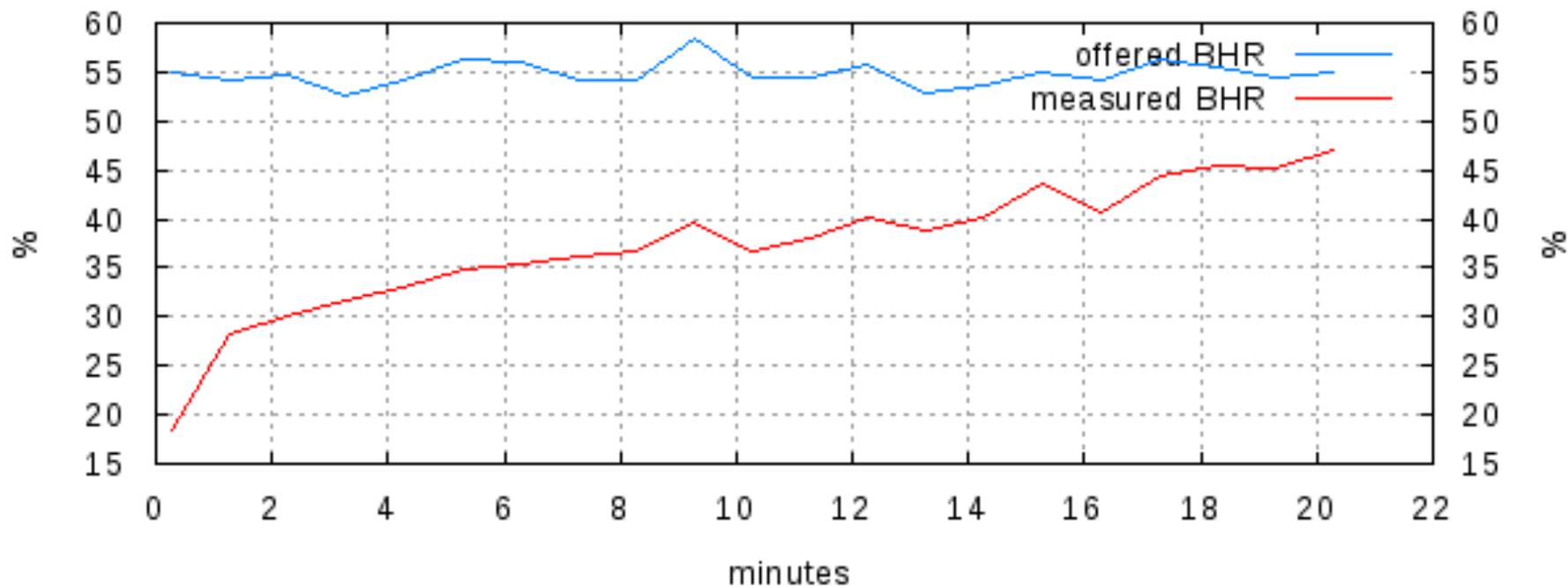


Gráfico de carga

Principais resultados - ATS



Porcentagem de cache hits

Principais resultados - Squid

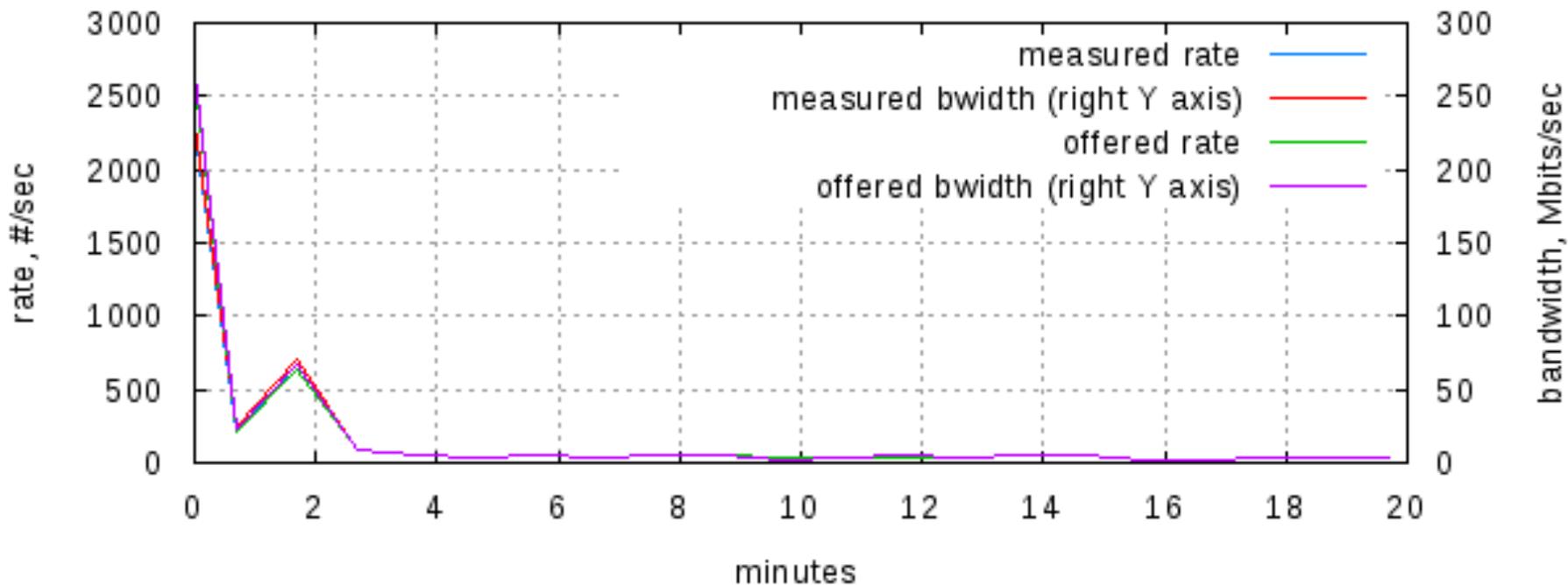
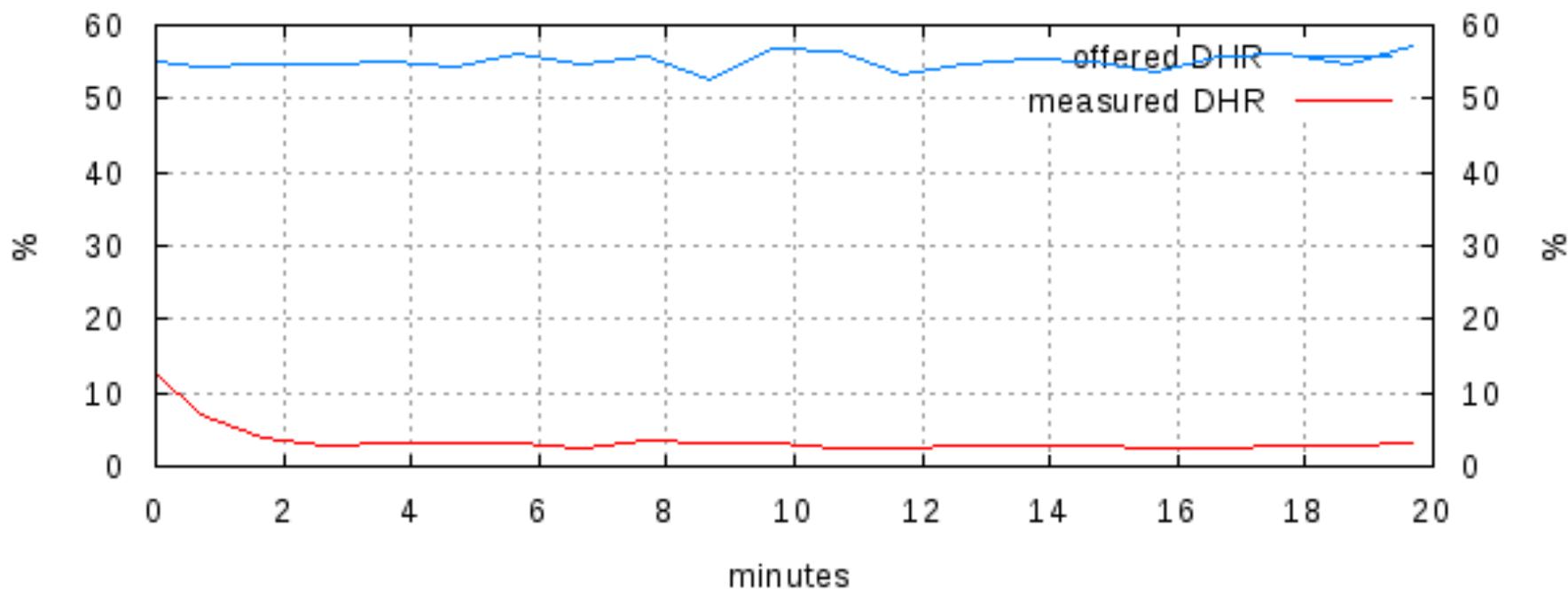


Gráfico de carga

Principais resultados - Squid

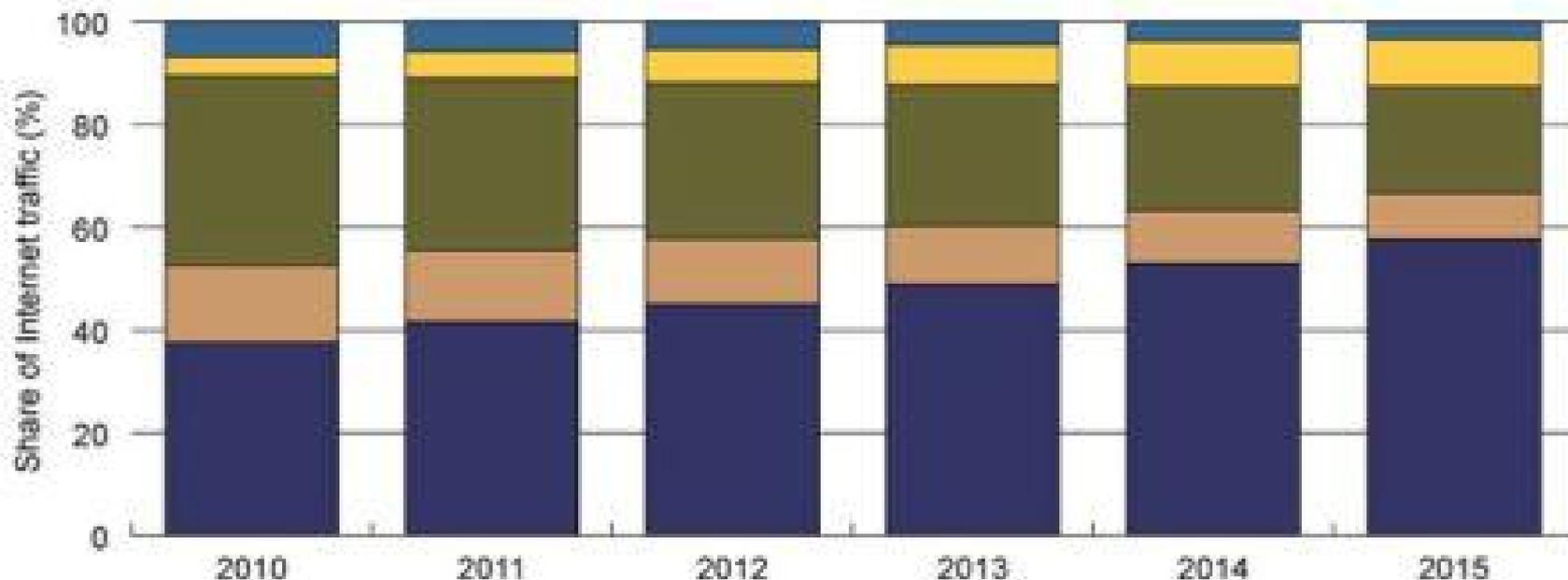


Porcentagem de cache hits

Cache de vídeos

Fig. 4: Global, Internet traffic, by service type, 2010-2015

■ Online video
 ■ Web data and browsing
 ■ Peer-to-peer
 ■ Online storage
 ■ Other



Source: Informa Telecoms & Media

Plugin - cacheurl

Permite a troca da URL chave utilizada para salvar determinado objeto

<http://site.video.com.br/video.m4?id=usuário1>

<http://site.video.com.br/video.m4?id=usuário2>

<http://site.video.com.br/video.m4>

Plugin - cacheurl

Ou seja:

- múltiplas URL's podem ser direcionadas à um mesmo conteúdo
- permite cache de conteúdo dinâmico de grandes portais

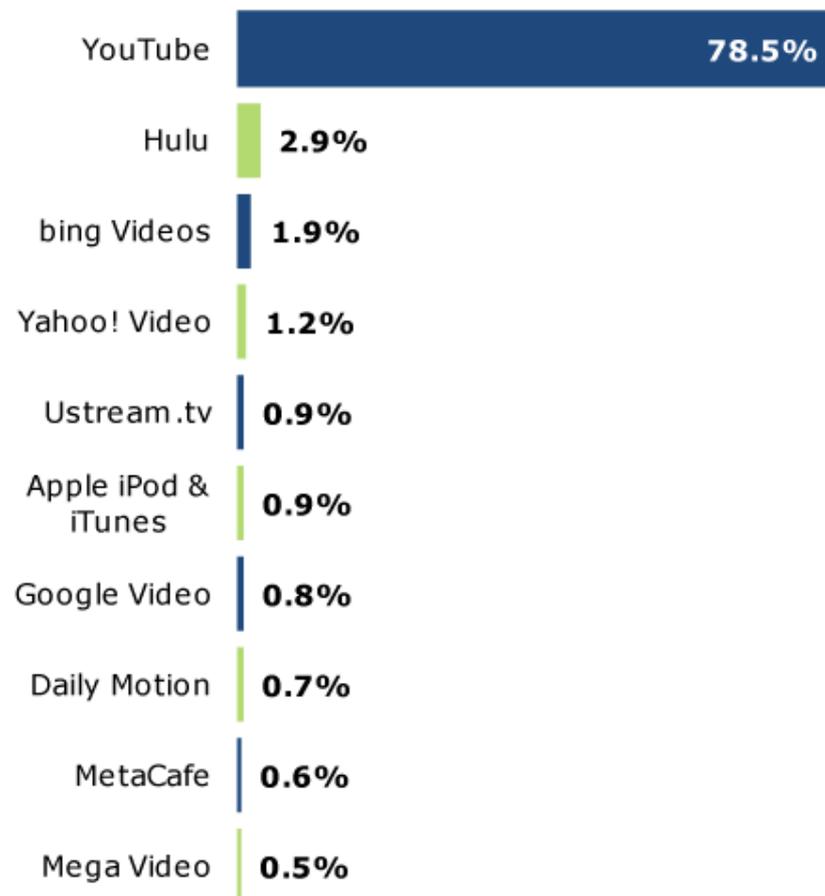
Como funciona:

- Regex

Top 10 Video/Multimedia Websites

by US Market Share of Visits (%)

April 2011



Configurações necessárias

cacheurl.conf

```
http:\\\\(.*\\.youtube\\.com|.*\\.googlevideo\\.com|.*\\.video\\.google\\.com)\\  
(get_video|videoplayback|videodownload)\\?.*?\\  
\\&(itag=[0-9]*).*?\\&(id=[a-zA-Z0-9]*).*  
http://video-html5-srv.youtube.com.  
ATSINTERNAL/$3&$4
```

Configurações necessárias

cache.conf

```
url_regex=http://\./ (.*\.\youtube\.\com|.*\.\  
googlevideo\.\com|.*\.\video\.\google\.\com) \/  
(get_video|videoplayback|videodownload) \?.*?  
  \&(itag=[0-9]*) .*?\&(id=[a-zA-Z0-9]*) .*
```

```
t1-in-cache=5d
```

Configurações necessárias

storage.conf

```
var/trafficserver 3G
```



Recapitulando

Melhora da experiência de uso da Web

Redução de Banda utilizada

Traffic Server apresenta Arquitetura moderna e escalável

Possibilita cache de conteúdo dinâmico

Obrigado! Perguntas?

heitor@nic.br

Referências

http://archive.iptv-news.com/iptv_news/march_2011/online_video_to_account_for_over_half_of_internet_traffic_by_2014

<http://mediablitz.com/2011/06/the-top-10-video-sharing-sites-by-market-share/>

<http://trafficserver.apache.org/>

<http://www.web-polygraph.org/>

<http://www.squid-cache.org/>

<http://home.tiscali.cz/~cz210552/webbench.html>