

# High Performance Wordpress

“Faster, Cheaper, Easier : Pick Three”

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# About

- Technical Analyst, Birmingham City Council
  - Birmingham.Gov.UK
  - 2005 : 1 million daily pageviews
  - Best eGovernment website in Europe
- 2007 : IlmuKomputer.com
- 2009 : KumpulBlogger.com, etc
- <http://harry.sufehmi.com/about/>



# Scope

- Growing-pains Sites :
  - Not enough revenue yet to pay for proper Multi-Tiered Infrastructure : servers, tech.team, etc
  - Too big for Shared Hosting
- Alexa rank (approx) 100.000 - 10.000
- Daily Pageviews : 100.000 - 5.000.000
- Need help to be able to stay alive, and grow to the next level !

# Lesser, Harder Ways to Speed

- PHP Accelerators : Potential bug/quirks
- MySQL tuning
- Nginx : eg: moving the bottleneck to PHP & MySQL
- WP cache plugins : still hits A & P
- Wordpress “lite” : maintenance nightmare
- Linux kernel tune-up (!)
- Turning the site into Static version  
(eg: all HTML files !)

A background image showing a sunset or sunrise over a body of water, with the sun low on the horizon and its light reflecting on the water's surface. The sky is filled with soft, golden clouds.

# Goals

- **Faster :**  
Ability to serve more visitors, with faster response
- **Cheaper : Using one server**  
(typical configuration : dual-core, 2 GB RAM)
- **Easier : As little work as possible**

# Optimization Steps

1. Benchmark

2. Define goals

3. Profiling

4. Optimize :

*Start with the Biggest, Lowest-hanging Fruit !*

5. Test & Benchmark

6. Go To #3

7. Done !

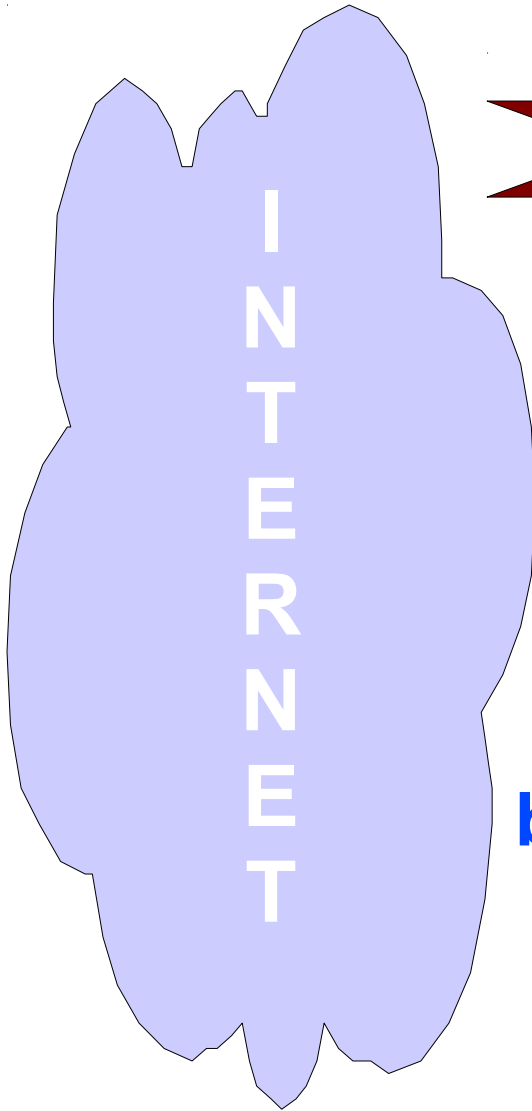
# Problem

- In many cases, we found out that even the Webserver itself, the “lightest” component of the AMP stack, is also THE bottleneck; not just the App server or Database server
- Conclusion : The flood must be stopped before it even reaches the webserver
- Solution : Edge-server

# Edge Server

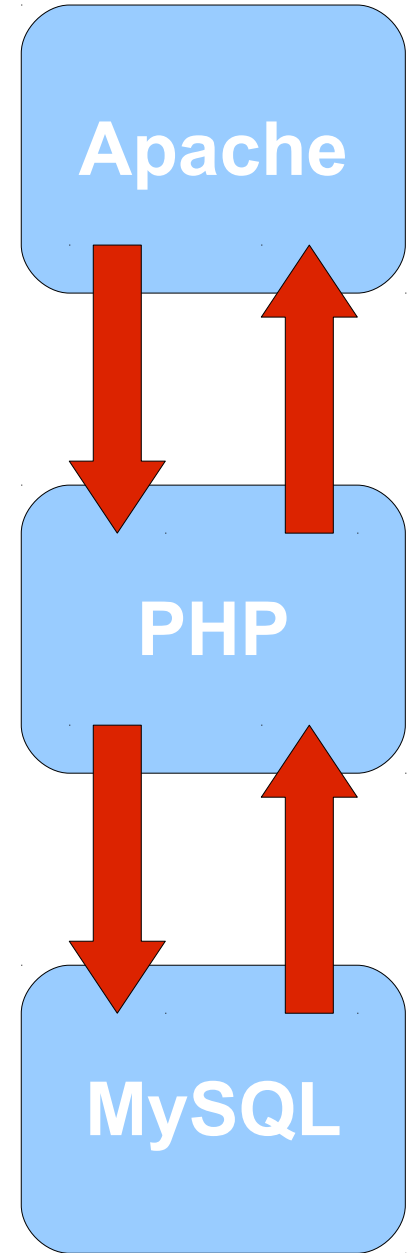
- Also known as “Reverse-Proxy”
- Squid 2.5 stable chosen :
  - Simple setup : very little config & *changes*
  - Fully standards-compliant
  - Support Virtual Hosts
  - Excellent documentation & support
- Result : Wordpress benchmark
  - Was : 2 requests / second
  - Now : 2000 requests / second
  - 100.000% performance increase !





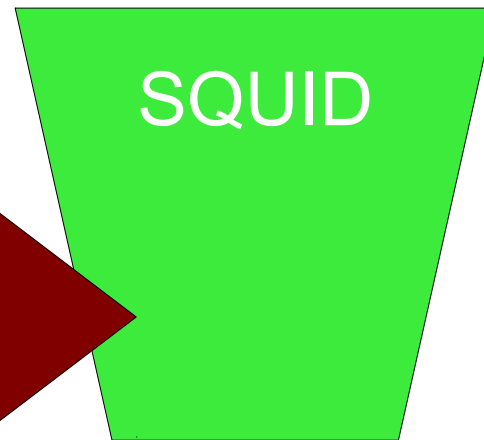
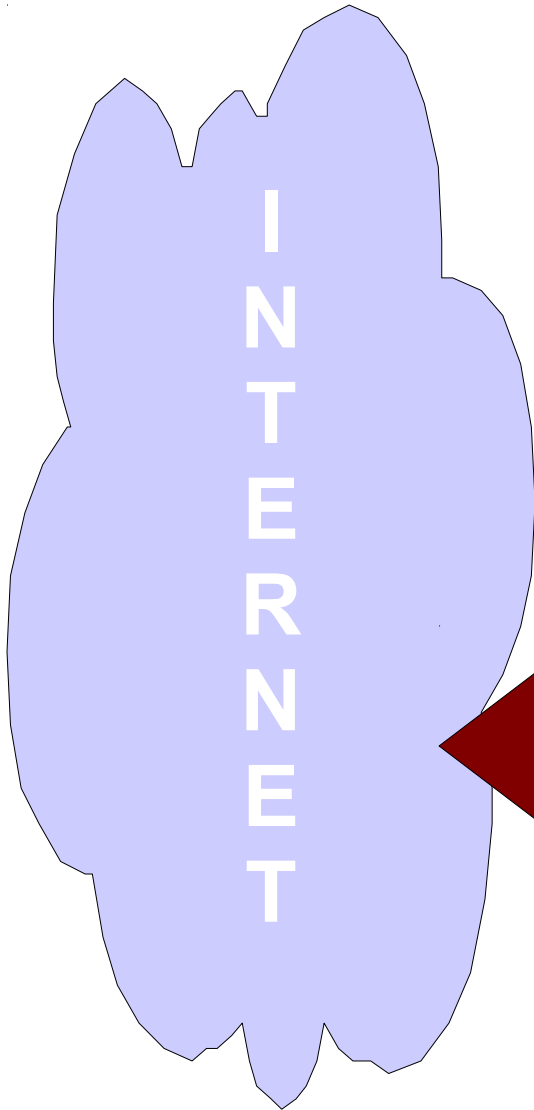
**Hitting Every Point  
in the Infrastructure.**

**Each point then  
became potential bottleneck**



**Acting like Armor, Squid absorbs most of the hits.**

**Most of requests to Wordpress sites are Read-requests, which are very cacheable.**



**Therefore, most requests then are served by Squid.**

**Very little are left to be served by the AMP stack**

# How To : Overview

- Setup Squid
  - Cache-enable Apache
  - Cache-enable PHP
  - Increase open files limit
  - Redirect port 80 incoming to Squid
  - Done !
- 
- Assumption : Ubuntu Linux

# How To : Setup Squid

- `cd /tmp`
- `wget http://www.squid-cache.org/Versions/v2/2.5/squid-2.5.STABLE14.tar.bz2`
- `tar xjvf squid-2.5.STABLE.tar.bz2`
- `cd squid-2.5.STABLE14`
- `mkdir /opt/squid`
- `./configure --prefix=/opt/squid --with-maxfd=8000 --with-large-files`
- `make all`
- `make install`
- `mkdir /opt/squid/var/cache`
- `mkdir /opt/squid/var/logs`
- `chown -R nobody:nobody /opt/squid/var/logs/`
- `chown -R nobody:nobody /opt/squid/var/cache/`

# How To : squid.conf

## ### the essentials

```
http_port 80
httpd_accel_host virtual
httpd_accel_port 8181
httpd_accel_uses_host_header on
```

## ### cache-related settings

```
cache_mem 128 MB
maximum_object_size_in_memory 1024 KB
cache_dir ufs /usr/local/squid/var/cache 4096 16 256
```

## ### access control

```
http_access allow all
http_reply_access allow all
icp_access allow all
```

# How To : cache-enable Apache

- Enable mod\_expire : *a2enmod expires*
- Wordpress' .htaccess :

```
<IfModule mod_expires.c>  
    ExpiresActive On  
    ExpiresDefault "access plus 1 day"  
</IfModule>
```

# How To : cache-enable PHP

- Edit `/etc/php5/apache2/php.ini`
- Change :  
`session.cache_limiter = nocache`
- Into :  
`session.cache_limiter = public`
- `/etc/init.d/apache2 stop`
- `/etc/init.d/apache2 start`

# How To : Increase Open File Limit

- Create a script to start Squid :  
/opt/squid/restart-squid.sh

```
#!/bin/bash
## kill running copies of squid
/opt/squid/sbin/squid -k kill

## recreate disk cache
/bin/rm -rf /opt/squid/var/cache ; /bin/mkdir /opt/squid/var/cache
/bin/chown nobody:nogroup /opt/squid/var/cache
/opt/squid/sbin/squid -z

## start squid
ulimit -n 10000 ; /opt/squid/sbin/squid -d 2
```



# How To : Redirect Port 80 To Squid

- Use Iptables, easily with Firehol : *apt-get install firehol*
- Edit */etc/firehol/firehol.conf*

```
version 5
```

```
server_squid_ports="tcp/8181"
```

```
client_squid_ports="default"
```

```
redirect to 8181 inface eth0 proto tcp dport 80
```

```
interface eth0 internet
```

```
    protection bad-packets
```

```
    server "icmp ssh smtp http pop3 squid" accept
```

```
    client all accept
```

# How To : Start It Up

- Start Squid : */opt/squid/restart-squid.sh*
- Start Port 80 Redirect : */etc/init.d/firehol start*
- Do some benchmarking
- Done !

# Other Big, Low-Hanging Fruits

- Themes Optimization :
  - **Less Components** : consolidate / strip away
  - **Do more simultaneously** :  
browser fetch 4 objects simultaneously  
from a domain,  
so, **use more sub-domains / CDN**
  - More at <http://to./es3>

# Other Big, Low-Hanging Fruits

- DNS Optimization : Use fast, fail-safe nameservers (thanks Simon Lim)  
Recommendation: ZoneEdit.com
- MySQL Capacity Optimizations : <http://to./es2>

A horizontal banner image showing a sunset over a body of water. The sun is low on the horizon, creating a bright glow and reflecting on the water. The sky is filled with soft, golden clouds.

Thank You

Questions ?