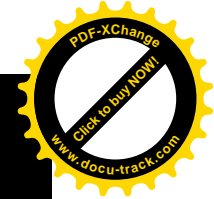# Performance!!!

Profiling + Cache

OS(system_call()) strace, sysstat, top, ps, /proc
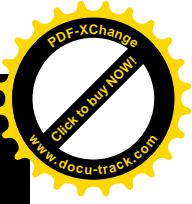
Httpd(Apache) valgrind(callgrind), gdb, lsof

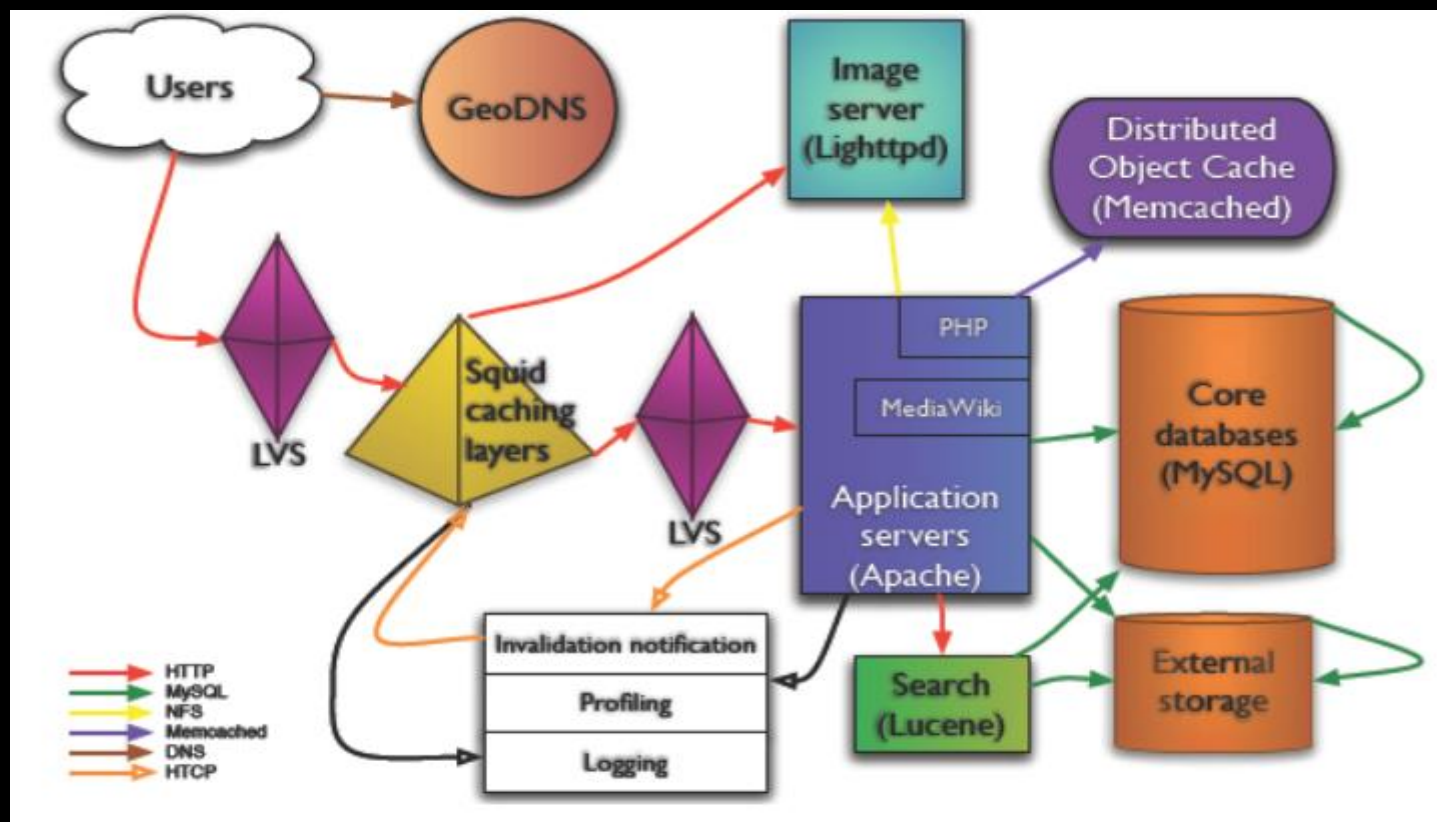*PHP* xhprof, x-debug, APD

OS(tcp/ip) tcpdump, ngrep

CDN

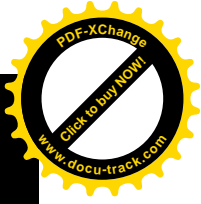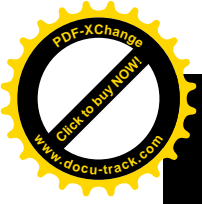*Client(browser)* firebug, httpwatch, page speed

Profiling

Where? When?

http://noc.wikimedia.org/cgi-bin/report.py?db=zhwiki&sort=cpu&limit=50

Xhprof @facebook

Xhprof Provides:

Diff Reports

　　Flat profile & Hierarchical profile
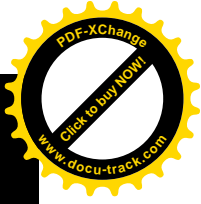
Callgraph-View

Memory Profile

Include/Require Track
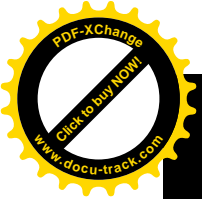
Terminology:

Inclusive Time

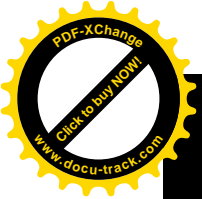Exclusive Time

Wall Time (User Time + System Time)

CPU Time

Xhprof & Production
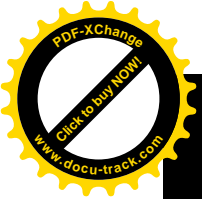
*Production Server

*1/10000

*Special User

*Hash Directory (Manual)

*PHP5 >= PHP5.2

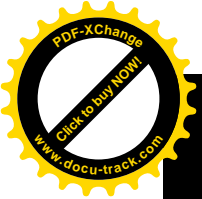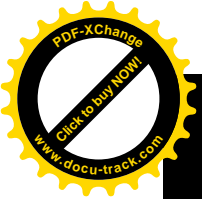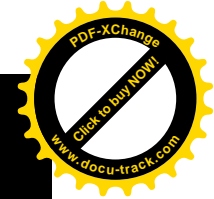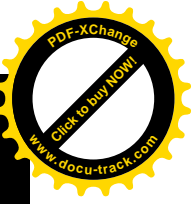# Web Cache

200

304

Expires

max-age
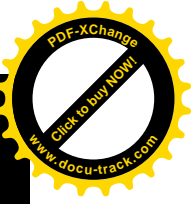
Last-Modified

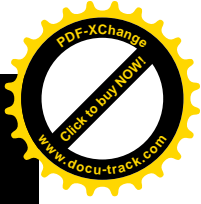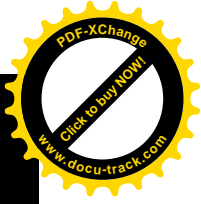# E-Tag

No-Cache

*Cache-Control: no-cache
*Pragma: no-cache

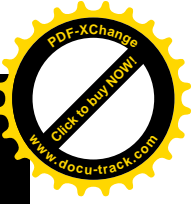# Cache-Control

*private

*public

*max-age

*no-cache

*no-store

*must-revalidate

Browser

*Enter 回车

*Prev/Next 上一页/下一页

*F5 刷新

*Ctrl + F5 强制刷新

*Open 打开新窗口

Proxy !!!

*无可避免....

*s-maxage

*proxy-revalidate

No-Cache (Drupal)

```
1020  function drupal_page_header() {
1021    $headers_sent = &drupal_static(__FUNCTION__, FALSE);
1022    if ($headers_sent) {
1023      return TRUE;
1024    }
1025    $headers_sent = TRUE;
1026
1027    $default_headers = array(
1028      'Expires' => 'Sun, 19 Nov 1978 05:00:00 GMT',
1029      'Last-Modified' => gmdate(DATE_RFC1123, REQUEST_TIME),
1030      'Cache-Control' => 'no-cache, must-revalidate, post-check=0, pre-check=0',
1031      'ETag' => '"' . REQUEST_TIME . '"',
1032    );
1033    drupal_send_headers($default_headers);
1034  }
```
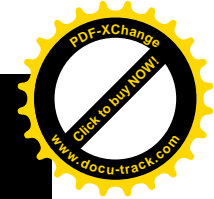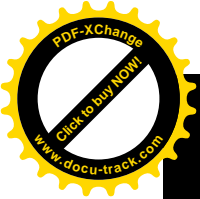
Cache (Drupal)

```php
1057    $default_headers = array();
1058    foreach ($cache->headers as $name => $value) {
1059      $name_lower = strtolower($name);
1060      if (in_array($name_lower, array('content-location', 'expires', 'cache-control', 'vary'))
1061          && !isset($hook_boot_headers[$name_lower])) {
1062        drupal_add_http_header($name, $value);
1063        unset($cache->headers[$name]);
1064      }
1065    }
1066    $max_age = !variable_get('page_cache_invoke_hooks', TRUE) &&
1067      (!isset($_COOKIE[session_name()]) || isset($hook_boot_headers['vary'])) ?
1068      variable_get('cache_lifetime', 0) : 0;
1069    $default_headers['Cache-Control'] = 'public, max-age=' . $max_age;
1070    $etag = '"' . $cache->created . '-' . intval($return_compressed) . '"';
1071    header('Etag: ' . $etag);
1072    $if_modified_since = isset($_SERVER['HTTP_IF_MODIFIED_SINCE']) ? strtotime($_SERVER['HTTP_IF_MODIFIED_SINCE']) : FALSE;
1073    $if_none_match = isset($_SERVER['HTTP_IF_NONE_MATCH']) ? stripslashes($_SERVER['HTTP_IF_NONE_MATCH']) : FALSE;
1074    if ($if_modified_since && $if_none_match
1075        && $if_none_match == $etag // etag must match
1076        && $if_modified_since == $cache->created) {  // if-modified-since must match
1077      header($_SERVER['SERVER_PROTOCOL'] . ' 304 Not Modified');
1078      drupal_send_headers($default_headers);
1079      return;
1080    }
```
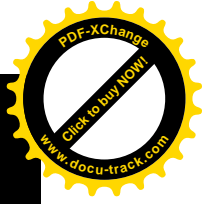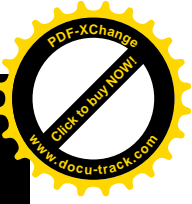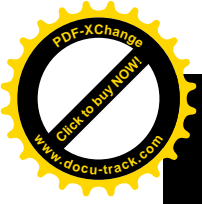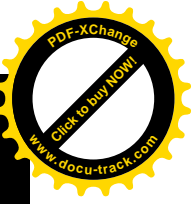
Static Files Cache

*mod_deflate、mod_headers

*虚机主机商

 将多个css、js合并到一个php文件

*http://hostname/foo?v=<? echo $v; ?>

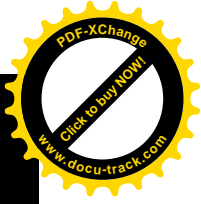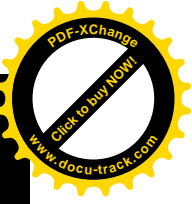# Long-Polling

Long-Polling

*web push-tech

*pconnection??!!

*ajax polling VS long-polling

*iframe

Long-Polling

*ulimit –n <open_file_nums>

*ulimit –u <max_user_proccess>

*tcp_max_syn_backlog

*Apache

     ServerLimit、MaxClients

*Free Memory & idle CPU

谢谢

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