



Profiling PHP applications

A photograph of a red and white motorcycle stuck in a muddy, swampy area. The motorcycle is partially submerged in the mud, with its front wheel and handlebars visible. The background is a dense, green forest. A semi-transparent black banner is overlaid across the middle of the image, containing the text "Who likes slow applications?".

Who likes slow applications?

Only faster execution time?





Reduce resource usage?

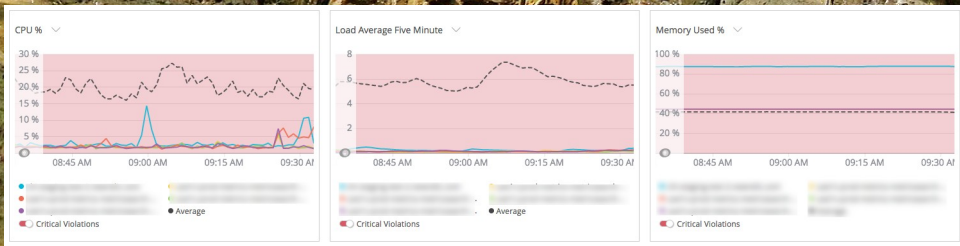
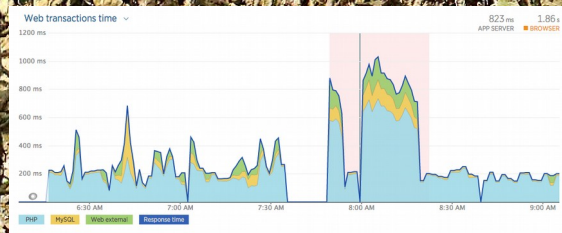


More RPM?


```
1 : 61.2% sy: 34.6% ni: 0.0% hi: 3.7% si: 0.5% wa: 0.0%
2 : 24.4% sy: 74.2% ni: 0.0% hi: 1.4% si: 0.0% wa: 0.0%
3 : 52.1% sy: 46.9% ni: 0.0% hi: 0.9% si: 0.0% wa: 0.0%
4 : 44.6% sy: 54.5% ni: 0.0% hi: 0.9% si: 0.0% wa: 0.0%
1 [|||||100.0%]
2 [|||||100.0%]
3 [|||||100.0%]
4 [|||||100.0%]
Mem:15.5G used:13.16 buffers:28K cache:1.40G
Swp:4.00G used:1.216
```

```
5 : 72.4% sy: 26.2% ni: 0.0% hi: 0.9% si: 0.5% wa: 0.0%
6 : 26.3% sy: 72.3% ni: 0.0% hi: 0.9% si: 0.5% wa: 0.0%
7 : 45.8% sy: 53.7% ni: 0.0% hi: 0.5% si: 0.0% wa: 0.0%
8 : 52.8% sy: 46.3% ni: 0.0% hi: 0.9% si: 0.0% wa: 0.0%
5 [|||||100.0%]
6 [|||||100.0%]
7 [|||||100.0%]
8 [|||||100.0%]
Tasks: 259; 8 running
Load average: 21.50 20.34 14.50
Uptime: 4 days, 07:33:51
```

What usually triggers profiling ...





Hi,

I'm Ike,

@BlackIkeEagle on Twitter

Developer / Operations
at Studio Emma



studio emma

internet expertise



Magento[®]
Professional solution partner

PIMCORE[®]

Gold solution partner

Profiling

is the process of application runtime **characteristics**
measurement for **performance** analysis and **optimization**





Knowledge Gained?



Knowledge Gained?

– where



Knowledge Gained?

- where
- what



Knowledge Gained?

- where
- what
- how much

WHY?

My application is 'fast'



WHY?

My application is 'fast'

– define fast



WHY?

My application is 'fast'

- define fast
- can it handle a Burst?



WHY?

My application is 'fast'

- define fast
- can it handle a Burst?
- Optimizing has Benifits





No profiler needed, I know where the
Bottleneck is.



No profiler needed, I know where the
Bottleneck is.

Nope, that's shooting in the dark



Points of interest

Points of interest



Execution time

Points of interest



Execution time
CPU time

Points of interest



Execution time

CPU time

Memory usage

Points of interest



Execution time

CPU time

Memory usage

Disk IO

Points of interest



Execution time

CPU time

Memory usage

Disk IO

Network time

Points of interest



Execution time

CPU time

Memory usage

Disk IO

Network time

External delays

How can we profile





PHP?

How can we profile



PHP?

Thats not really profiling

```
<?php
```

```
$start = microtime(true);  
// ...  
$this->code();  
// ...  
$time = microtime(true) - $start;
```

How can we profile

How can we profile: Xdebug



Xdebug Xdebug

How can we profile: Xdebug

Xdebug php extension

Some configuration needed

External tool to analyze

How can we profile: Xdebug

```
xdebug.profiler_enable=1  
xdebug.profiler_output_dir=/xdebug  
xdebug.profiler_output_name=cachegrind.out.%u
```


How can we profile: Xdebug

Open Back Forward Up % Relative Cycle Detection Relative to Parent Shorten Templates Time

Flat Profile

Search: (No Grouping)

Incl.	Self	Called	Function
104 057 906	13 631	270	Magento\Framework\View\...
103 883 706	9 663	268	Magento\Framework\View\...
78 210 012	3 496	33	Magento\Framework\View\...
34 454 515	334	(0)	{main}
32 358 775	26 169	137	Magento\Framework\View\...
27 612 760	133	1	Magento\Framework\App\...
27 594 494	342	2	Magento\Framework\App\...
27 590 347	329	2	Magento\Framework\View\...
27 297 703	86	2	Magento\Framework\View\...
26 295 325	276 660	6 566	Magento\Framework\Obj...
25 635 748	5 089	101	Magento\Framework\View\...
23 200 854	286	3	Magento\Framework\App\...
19 541 298	371 699	26 477	Magento\Framework\App\...
15 379 504	443	2	Magento\Framework\App\...
15 156 344	237 830	6 358	Magento\Framework\Obj...
14 749 654	482 736	6 358	Magento\Framework\Obj...
14 248 211	538 896	35 538	Magento\Framework\Obj...
13 809 927	56	1	Magento\Framework\View\...
13 809 870	233	1	Magento\Framework\View\...
13 780 399	44	1	Magento\Framework\View\...
13 779 497	613	1	Magento\Framework\View\...
13 772 550	247	3	Magento\Framework\View\...
13 772 299	1 042	3	Magento\Framework\View\...
13 565 285	94	3	Magento\Framework\View\...
11 634 803	889	27	Magento\Swatches\Block\P...
10 942 829	698	4	Magento\Catalog\Block\Ca...
10 939 799	301	4	Magento\Catalog\Block\Ca...
10 928 481	480	4	Magento\Catalog\Block\Ca...
10 921 081	83	1	include:::/phpapp/vendor/...
10 920 529	15	1	Magento\Catalog\Block\Ca...
10 920 513	70	1	Magento\Catalog\Block\Ca...
10 918 382	221	2	Magento\Catalog\Block\Pr...
10 747 800	465	2	Magento\Catalog\Controlle...

Types Callers All Callers Callee Map Source Code

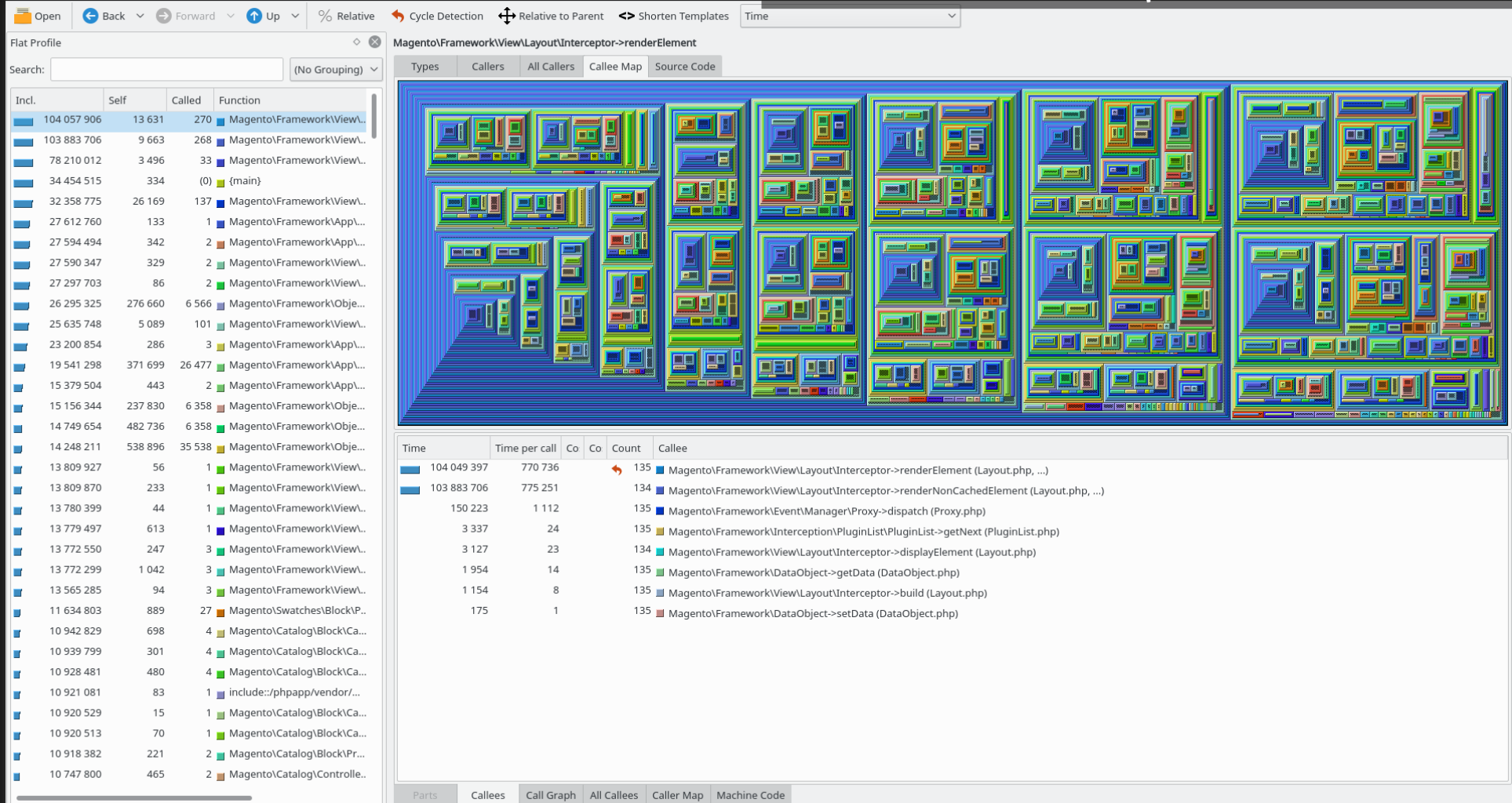
Event Type	Incl.	Self	Short	Formula
Time	104 057 906	13 631	Time	
Memory	70 617 864	52 992	Memory	

Time	Time per call	Co	Co	Count	Callee
104 049 397	770 736			135	Magento\Framework\View\Layout\Interceptor->renderElement (Layout.php, ...)
103 883 706	775 251			134	Magento\Framework\View\Layout\Interceptor->renderNonCachedElement (Layout.php, ...)
150 223	1 112			135	Magento\Framework\Event\Manager\Proxy->dispatch (Proxy.php)
3 337	24			135	Magento\Framework\Interception\PluginList\PluginList->getNext (PluginList.php)
3 127	23			134	Magento\Framework\View\Layout\Interceptor->displayElement (Layout.php)
1 954	14			135	Magento\Framework\DataObject->getData (DataObject.php)
1 154	8			135	Magento\Framework\View\Layout\Interceptor->build (Layout.php)
175	1			135	Magento\Framework\DataObject->setData (DataObject.php)

Parts Callee Call Graph All Callee Caller Map Machine Code

cachegrind.out.1521816750_953275 [1] - Total Time Cost: 33 404 948

How can we profile: Xdebug



It's Hard

How can we profile: Xdebug



How can we profile: Xhprof



Xhprof

How can we profile: Xhprof

Tideways php extension

Configuration needed

Xhgui to view and compare

How can we profile: Xhprof

```
extension=tideways.so  
tideways.auto_prepend_library=0  
auto_prepend_file=/usr/share/xhprof/prepend.php
```


How can we profile: Xhprof

```
<?php
```

```
if (extension_loaded('tideways')) {  
    tideways_enable(  
        TIDEWAYS_FLAGS_CPU  
        | TIDEWAYS_FLAGS_MEMORY  
        | TIDEWAYS_FLAGS_NO_SPANS  
    );  
  
    register_shutdown_function(  
        function() {  
            ignore_user_abort(true);  
            flush();  
  
            $data['profile'] = tideways_disable();  
  
            // ...  
        }  
    );  
}
```


The screenshot shows a web browser window at http://xhgui.magento2.test/. The page has a header with the XHG logo and navigation tabs: Recent, Longest wall time, Most CPU, Most memory, Custom View, Watch Functions, and Waterfall. The main content area is titled "Recent runs" and contains a message: "Looks like you haven't done any profiling". Below this, it explains that to get started with XHGUI, one needs to collect some profiling data. It provides instructions on how to do this by using external/header.php or enabling auto_prepend_file in php.ini. At the bottom of the page, there are three status indicators: "© Paul Reinheimer & Mark Story 2012", "1,000,000 μs = 1 second", and "1,048,576 bytes = 1 MB". A small terminal window at the bottom left shows the IP address 172.31.0.10.

How can we profile: Xhprof

MenuTops - WomenXhgui - Run list

<>C[][]http://xhgui.magento2.test/⚡🌈📄🗨️🔒🏠🔧👤🔍🔗

XHGRecentLongest wall timeMost CPUMost memoryCustom ViewWatch FunctionsWaterfall

Recent runs

Q Search

Method	URL	Time	wt	cpu	mu	pmu
GET	/women/tops-women.html	Mar 23rd 15:04:57	158,002 μ s	149,360 μ s	8,066,640 bytes	9,761,984 bytes
GET	/women/tops-women.html	Mar 23rd 15:04:33	17,617,552 μ s	17,050,520 μ s	54,328,488 bytes	54,895,184 bytes
	magento c:f	Mar 23rd 15:04:13	3,582,055 μ s	3,480,468 μ s	22,462,976 bytes	22,442,544 bytes

<<1>>

© Paul Reinheimer & Mark Story 2012

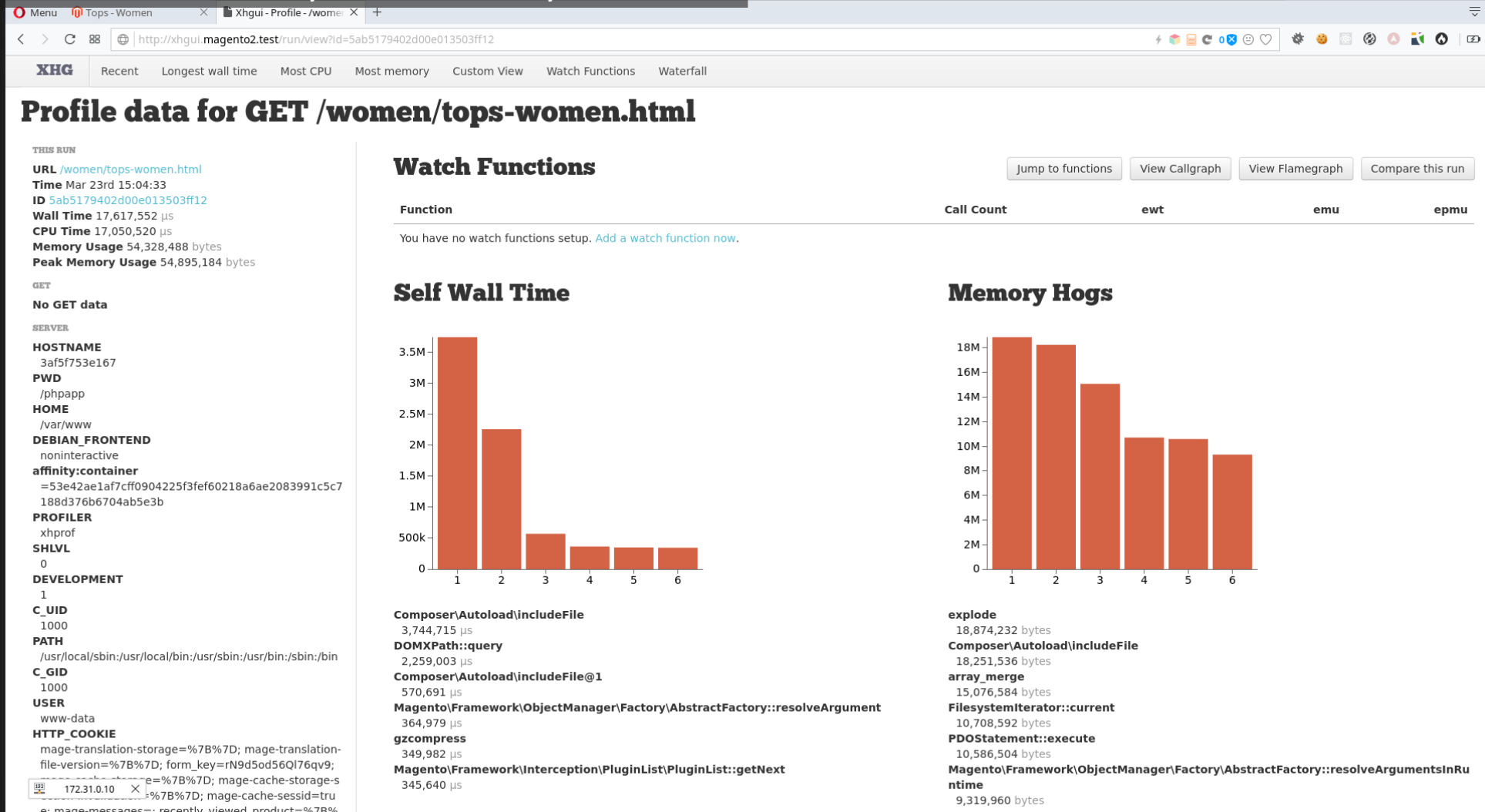
1,000,000 μ s = 1 second

1,048,576 bytes = 1 MB

172.31.0.10

X

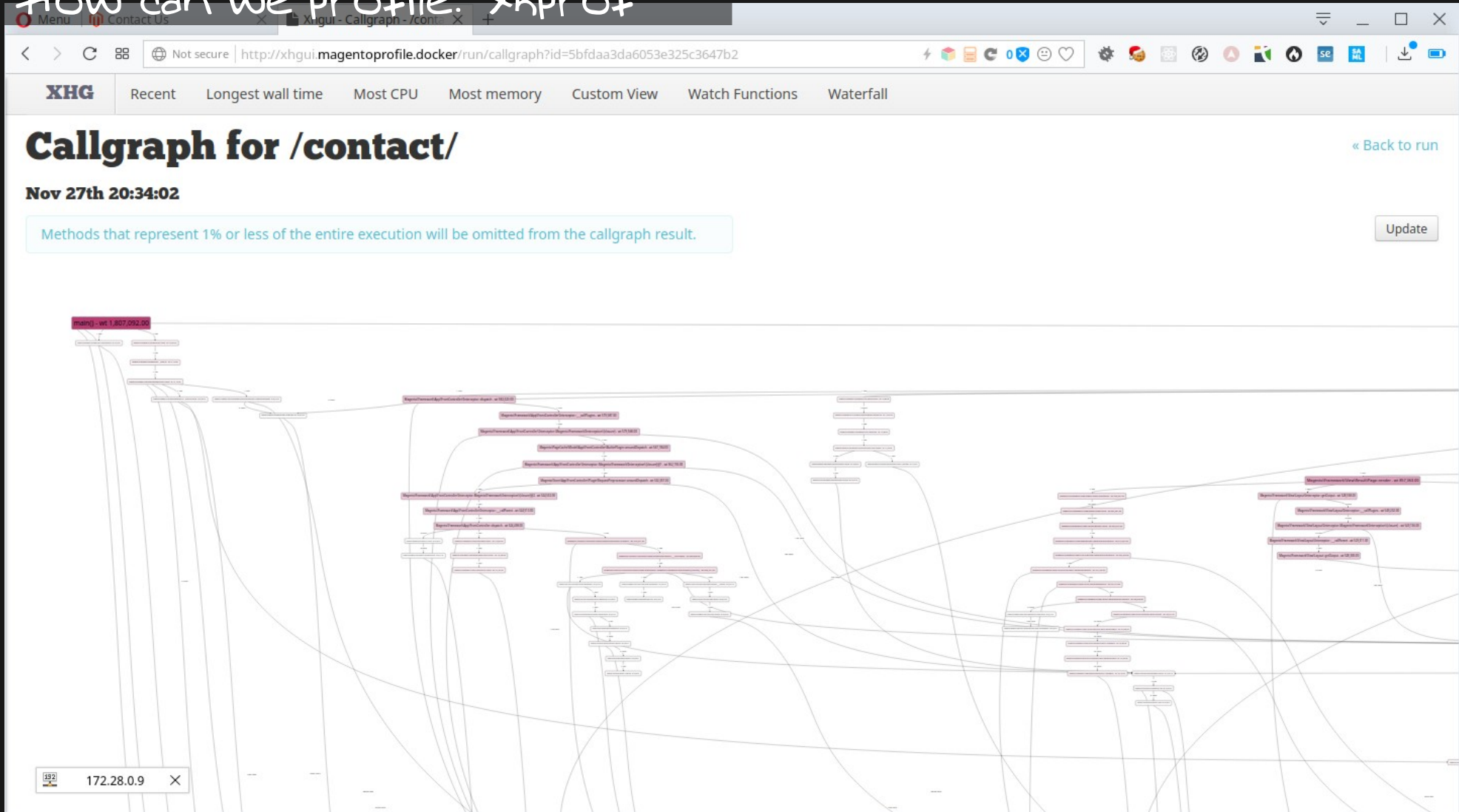
How can we profile: Xhprof



How can we profile: Xhprof

Filter by function name										
Function	Call Count	Self Wall Time	Self CPU	Self Memory Usage	Self Peak Memory Usage	Inclusive Wall Time	Inclusive CPU	Inclusive Memory Usage	Inclusive Peak Memory Usage	
Composer\Autoload\includeFile	2370	3,744,715 µs	3,625,509 µs	18,251,536 bytes	31,453,576 bytes	4,488,326 µs	4,342,105 µs	22,942,248 bytes	36,312,480 bytes	
DOMXPath::query	21270	2,259,003 µs	2,275,958 µs	7,838,328 bytes	5,400 bytes	2,259,003 µs	2,275,958 µs	7,838,328 bytes	5,400 bytes	
Composer\Autoload\includeFile@1	533	570,691 µs	550,974 µs	3,189,512 bytes	3,551,048 bytes	707,084 µs	680,786 µs	4,684,896 bytes	4,858,904 bytes	
Magento\Framework\ObjectManager\Factory\AbstractFactory::resolveA...	29628	364,979 µs	349,782 µs	-5,394,936 bytes	718,120 bytes	2,602,384 µs	2,543,361 µs	7,905,392 bytes	8,684,512 bytes	
gzcompress	35	349,982 µs	348,580 µs	855,080 bytes	6,165,008 bytes	349,982 µs	348,580 µs	855,080 bytes	6,165,008 bytes	
Magento\Framework\Interception\PluginList\PluginList::getNext	71279	345,640 µs	306,305 µs	-2,126,040 bytes	2,328 bytes	1,913,234 µs	1,941,625 µs	1,715,128 bytes	626,880 bytes	
PDOStatement::execute	435	316,754 µs	46,441 µs	10,586,504 bytes	384,232 bytes	316,754 µs	46,441 µs	10,586,504 bytes	384,232 bytes	
SimpleXMLElement::xpath	5942	258,187 µs	262,350 µs	1,206,592 bytes	968 bytes	258,187 µs	262,350 µs	1,206,592 bytes	968 bytes	
Magento\Framework\Config\Dom::_getMatchedNode	19299	215,652 µs	193,402 µs	-7,063,592 bytes	0 bytes	2,571,768 µs	2,583,062 µs	327,032 bytes	0 bytes	
Magento\Framework\Interception\PluginList\PluginList::_loadScoped...	71279	176,769 µs	177,069 µs	-2,361,888 bytes	976 bytes	1,477,504 µs	1,506,800 µs	421,816 bytes	276,104 bytes	
Magento\Framework\View\TemplateEngine\Php::render	47	170,648 µs	169,569 µs	36,848 bytes	1,113,920 bytes	5,817,524 µs	5,507,395 µs	13,564,992 bytes	14,169,472 bytes	
Magento\Framework\Config\Dom\NodePathMatcher::match	38681	170,382 µs	149,163 µs	-1,372,928 bytes	22,160 bytes	372,724 µs	393,338 µs	3,872 bytes	27,912 bytes	
Magento\Framework\Config\Dom\NodePathMatcher::simplifyXpath	38681	158,156 µs	137,784 µs	696 bytes	5,688 bytes	184,094 µs	204,984 µs	1,376,232 bytes	5,688 bytes	
Magento\Framework\ObjectManager\Factory\AbstractFactory::resolveA...	5045	155,057 µs	132,419 µs	9,319,960 bytes	3,464 bytes	2,758,911 µs	2,685,547 µs	17,225,952 bytes	8,687,976 bytes	
unserialize	468	144,475 µs	144,368 µs	106,296 bytes	226,944 bytes	144,475 µs	144,368 µs	106,296 bytes	226,944 bytes	
Magento\Framework\ObjectManager\Config\Mapper\Dom::convert	12	139,502 µs	122,971 µs	-3,515,008 bytes	111,064 bytes	822,787 µs	815,202 µs	8,753,352 bytes	4,565,480 bytes	
file_exists	9474	132,423 µs	128,382 µs	6,168 bytes	0 bytes	132,423 µs	128,382 µs	6,168 bytes	0 bytes	
gzuncompress	36	127,945 µs	127,623 µs	4,338,216 bytes	1,398,896 bytes	127,945 µs	127,623 µs	4,338,216 bytes	1,398,896 bytes	
Magento\Store\Model\Config\Placeholder::_getValue	14346	116,901 µs	93,407 µs	-7,517,136 bytes	50,384 bytes	122,179 µs	130,385 µs	-509,512 bytes	254,696 bytes	
Composer\Autoload\includeFile@2	111	111,117 µs	105,938 µs	1,251,608 bytes	1,287,920 bytes	128,654 µs	122,237 µs	1,493,488 bytes	1,307,856 bytes	
DOMXPath::__construct	21273	106,519 µs	119,067 µs	6,360 bytes	0 bytes	106,519 µs	119,067 µs	6,360 bytes	0 bytes	
Magento\Store\Model\Config\Placeholder::_setValue	11357	102,872 µs	102,877 µs	-3,434,832 bytes	952,928 bytes	105,493 µs	111,583 µs	2,235,672 bytes	952,928 bytes	
Magento\Framework\Config\Dom::_mergeNode@1	6645	101,324 µs	84,560 µs	-1,259,408 bytes	0 bytes	3,290,819 µs	3,293,311 µs	38,592 bytes	0 bytes	
172.31.0.10 X Magento\Framework\ObjectManager::get	21082	99,336 µs	87,772 µs	183,904 bytes	1,336 bytes	5,454,145 µs	5,320,686 µs	22,228,616 bytes	17,860,864 bytes	

How can we profile: Xhprof



How can we profile: Xhprof



Local setup

Profiles everything

How can we profile: Xhprof



Local setup

Profiles everything

Not so fancy

How can we profile: Tideways



Tideways



How can we profile: Tideways

Tideways php extension

Daemon for communication

Browser extension

Configuration needed

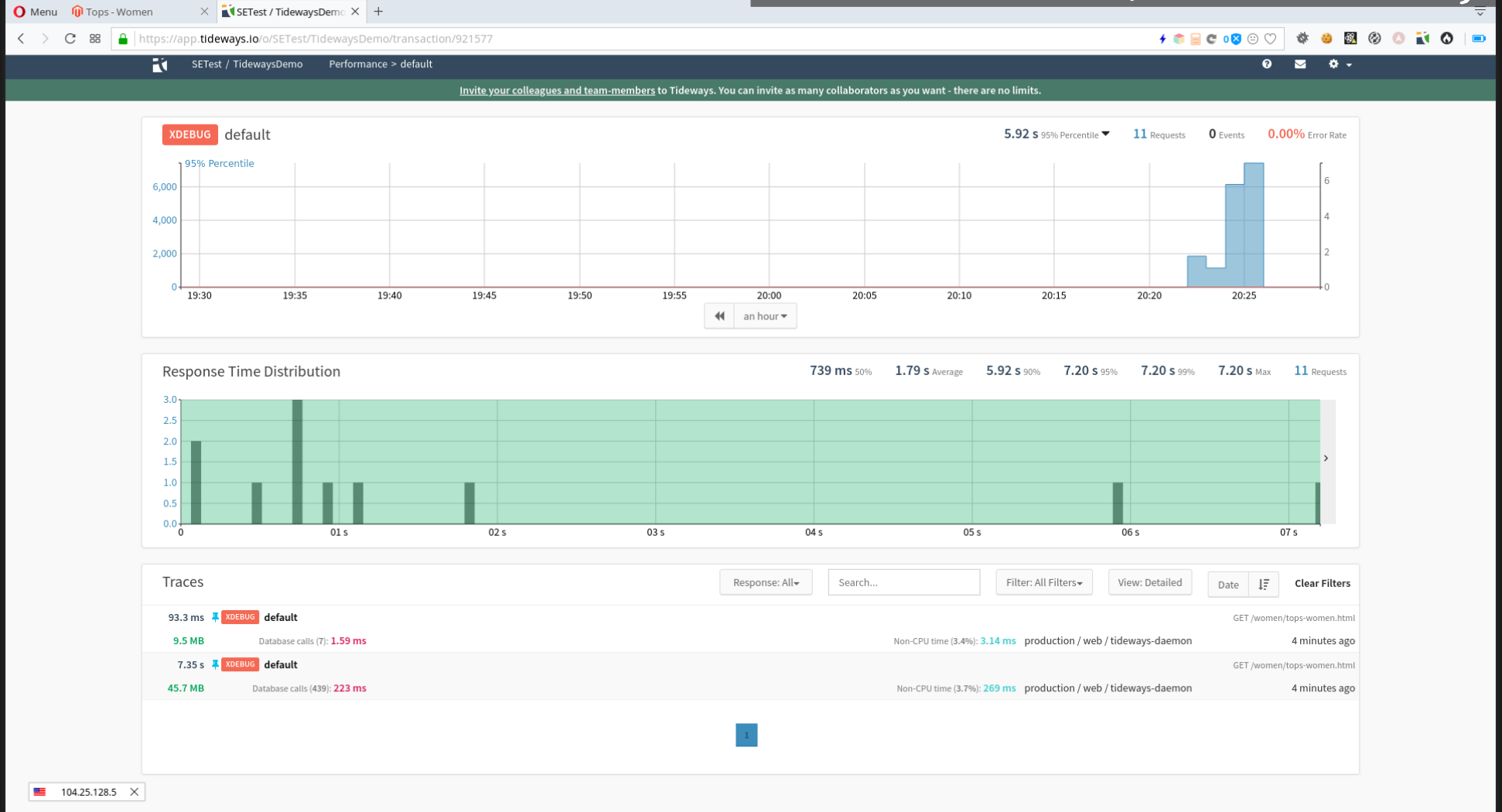
30 day trial

Token to identify

Hosted web interface

Also has APM functionality

How can we profile: Tideways



How can we profile: Tideways

Menu Tops - Women X SESTest / TidewaysDemo X +

http://magento2.test/women/tops-women.html

Default welcome msg! Sign In

Tideways Help

Select the application for this domain to start profiling:

SESTest/TidewaysDemo [Take Profile](#)

LUMA

Search entire store here

What's New **Women** Men Gear Training Sale

Home > Women > Tops

Tops

Shopping Options

CATEGORY ▾

STYLE ▾

SIZE ▾

PRICE ▾

COLOR ▾

MATERIAL ▾

PATTERN ▾

CLIMATE ▾

Compare Products


You have no items to compare.

My Wish List

You have no items in your wish list.

Items 1-9 of 50


Sort By Position ↑



Breathe-Easy Tank
★★★★★ 2 reviews
34,00 €

XS S M L XL


Color swatches: Purple, White, Yellow



Antonla Racer Tank
★★★★★ 3 reviews
34,00 €

XS S M L XL


Color swatches: Black, Purple, Yellow



Maya Tunic
★★★★★ 1 review
29,00 €

XS S M L XL





Color swatches: Green, White, Yellow



Chloe Compete Tank
★★★★★ 3 reviews
39,00 €

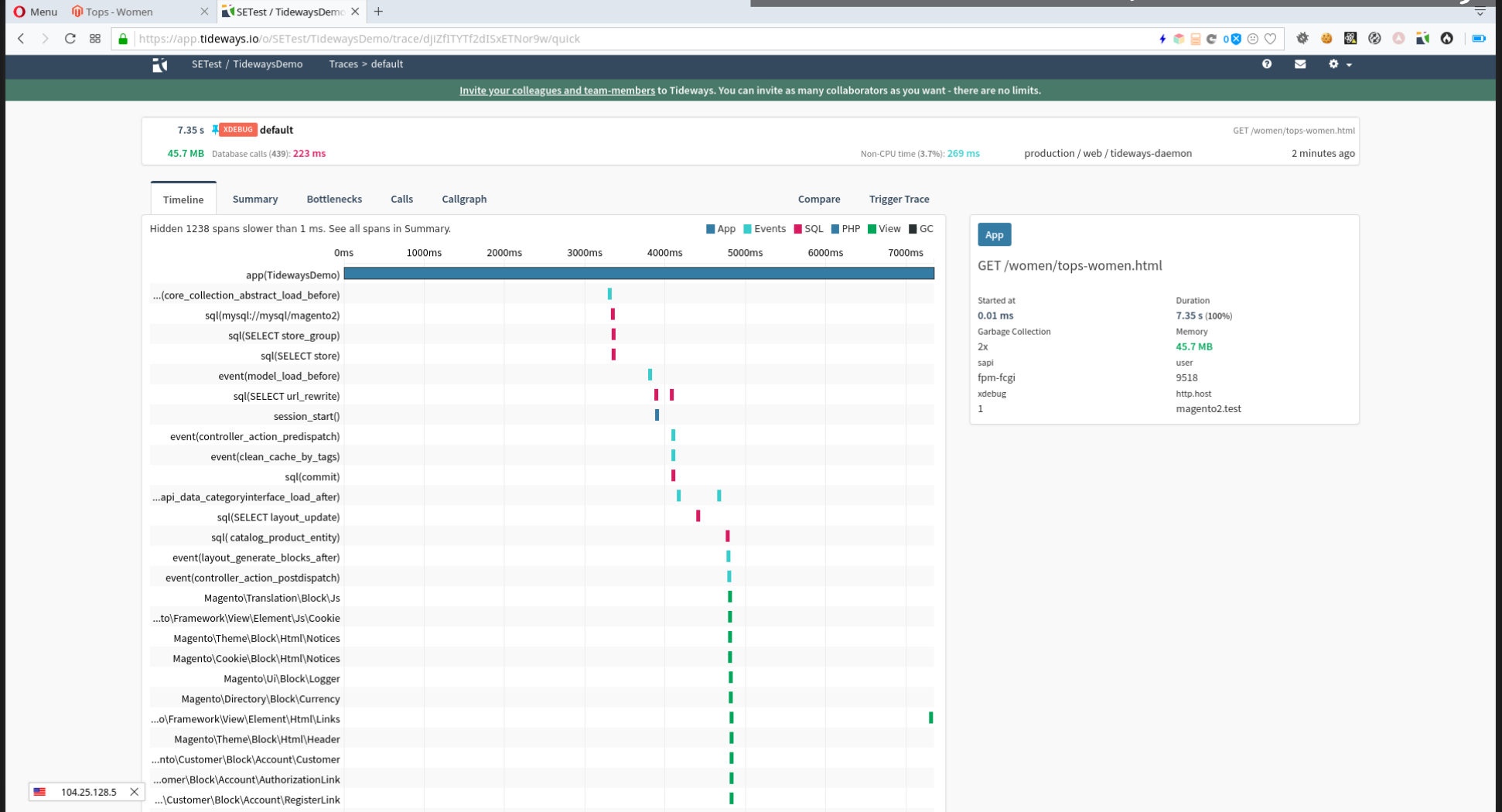
XS S M L XL

Color swatches: Blue, Red, Yellow



172.31.0.2 X

How can we profile: Tideways



How can we profile: Tideways

Menu Tops - Women X SEStest / TidewaysDemo X +

https://app.tideways.io/o/SEStest/TidewaysDemo/trace/djIzflTYTf2d15xETNor9w/summary

SEStest / TidewaysDemo Traces > default

Invite your colleagues and team-members to Tideways. You can invite as many collaborators as you want - there are no limits.

7.35 s **XDEBUG** default GET /women/tops-women.html
45.7 MB Database calls (439): 223 ms Non-CPU time (3.7%): 269 ms production / web / tideways-daemon 2 minutes ago

Timeline Summary Bottlenecks Calls Callgraph Compare Trigger Trace

Category	Summary	Count	Total Duration	Self Duration		
App	GET /women/tops-women.html	1	7.35 s	100%	4.70 s	64%
View	Magento\Swatches\Block\Product\Renderer\Listing\Configurable\Interceptor	9	1.04 s	14%	956 ms	13%
View	Magento\Framework\Pricing\Render\Amount	9	346 ms	4.7%	342 ms	4.6%
View	Magento\ConfigurableProduct\Pricing\Render\FinalPriceBox\Interceptor	9	662 ms	9.0%	269 ms	3.7%
Events	catalog_block_product_list_collection	1	207 ms	2.8%	168 ms	2.3%
View	Magento\LayeredNavigation\Block\Navigation	1	199 ms	2.7%	164 ms	2.2%
View	Magento\Catalog\Block\Product\ListProduct\Interceptor	1	2.10 s	29%	121 ms	1.6%
View	Magento\Theme\Block\Html\Topmenu\Interceptor	1	79.8 ms	1.1%	75.5 ms	1.0%
Events	core_collection_abstract_load_before	46	39.4 ms	0.54%	39.4 ms	0.54%
Events	core_layout_render_element	135	36.1 ms	0.49%	36.1 ms	0.49%
SQL	SELECT catalog_product_entity	48	35.5 ms	0.48%	35.5 ms	0.48%
View	Magento\Checkout\Block\Cart\Sidebar\Interceptor	1	29.1 ms	0.40%	28.0 ms	0.38%
View	Magento\Review\Block\Product\ReviewRenderer	9	23.4 ms	0.32%	23.0 ms	0.31%
Events	model_load_before	7	20.3 ms	0.28%	20.3 ms	0.28%
View	Magento\Framework\View\Element\Template	15	189 ms	2.6%	19.9 ms	0.27%
View	Magento\Swatches\Block\LayeredNavigation\RenderLayered	2	18.6 ms	0.25%	18.2 ms	0.25%
SQL	SELECT	23	16.0 ms	0.22%	16.0 ms	0.22%
SQL	SELECT catalog_product_entity_int	19	14.6 ms	0.20%	14.6 ms	0.20%
SQL	SELECT catalog_product_super_attribute	27	13.3 ms	0.18%	13.3 ms	0.18%

104.25.128.5 X

How can we profile: Tideways

MenuTops - Women

SETest / TidewaysDemo

+

<>C

https://app.tideways.io/o/SETest/TidewaysDemo/trace/djIzfiTYf2d15xETNor9w/full

SETest / TidewaysDemoTraces > default

Invite your colleagues and team-members to Tideways. You can invite as many collaborators as you want - there are no limits.

7.35 sXDEBUG default

45.7 MBDatabase calls (439): 223 ms

Non-CPU time (3.7%): 269 msproduction / web / tideways-daemon2 minutes ago

GET /women/tops-women.html

TimelineSummaryBottlenecksCallsCallgraphCompareTrigger Trace

Search

Q

MagentoComposerZendMonologCmDotdigitalgroupTidewaysPelagoSymfony

Function Name	Calls	Incl. Wall Time	Excl. Wall Time
DOMXPath::query	21270	2.09 s	28%
SimpleXMLElement::xpath	5942	232 ms	3.2%
PDOStatement::execute	435	209 ms	2.8%
Magento\Framework\Interception\PluginList\PluginList::getNext	71279	1.31 s	18%
Magento\Framework\Config\Dom::__getMatchedNode	19299	2.30 s	31%
fgets	2463	102 ms	1.4%
Magento\Framework\ObjectManager\Factory\AbstractFactory::resolveArgumentsInRuntime	5045	764 ms	10%
DOMXPath::__construct	21273	93.5 ms	1.3%
Magento\Framework\Interception\PluginList\PluginList::__loadScopedData	71279	1.13 s	15%
Magento\Framework\Config\Dom\NodePathMatcher::match	38681	180 ms	2.5%
Magento\Framework\ObjectManager\Factory\AbstractFactory::resolveArgument	29628	666 ms	9.1%
Magento\Framework\Config\Dom\NodePathMatcher::simplifyXPath	38681	88.1 ms	1.2%
DOMDocument::loadXML	939	61.4 ms	0.84%
DOMNode::appendChild	7826	61.2 ms	0.83%
Magento\Framework\Config\Dom::__mergeNode@1	6645	2.71 s	37%
Magento\Framework\ObjectManager\Config\Mapper\Dom::convert	12	283 ms	3.8%
Magento\Framework\Config\Dom::__getNodePathByParent	11473	233 ms	3.2%
Magento\Framework\ObjectManager\ObjectManager::get	21082	1.75 s	24%

DOMXPath::query

Call Details

Inclusive Wall Time	2.09 s (28%)
Inclusive Wall Time/Call	0.10 ms
Exclusive Wall Time	2.09 s (28%)
Calls	21270 (0.73%)

Parent functions

Function Name	Calls	Incl. Wall Time
Magento\Framework\Config\Dom::__getMatchedNode	19299	2.09 s
Magento\Ui\Config\Argument\Parser\XPathType::parse	1293	2.36 ms
Magento\Ui\Config\Argument\Parser\ConverterType::parse	531	0.99 ms

Show all

104.25.128.5

How can we profile: Tideways



More than a profiler
Easy to use

How can we profile: Tideways



More than a profiler
Easy to use

Trial → Paying

How can we profile: Blackfire



Blackfire



Blackfire php extension

Daemon for communication

Browser extension

Configuration needed

Token to identify

Hosted web interface

Freemium

How can we profile: Blackfire

Menu Tops - Women Blackfire

http://magento2.test/women/tops-women.html

Default welcome msg! Sign In or Create Account

blackfire Connected as Ike Devolder

Profile!

☐ Disable aggregation when the page has side-effects
Blackfire Companion 1.16.3 - Troubleshooting

LUMA

Search entire store here...

What's New Women Men Gear Training Sale

Home > Women > Tops

Tops

Shopping Options

CATEGORY

STYLE

SIZE

PRICE

COLOR


MATERIAL

PATTERN

CLIMATE

Items 1-9 of 50

Sort By Position




Breathe-Easy Tank

★★★★★ 2 reviews

34,00 €

XS S M L XL

Color swatches: Purple, White, Yellow




Antonla Racer Tank

★★★★★ 3 reviews

34,00 €

XS S M L XL

Color swatches: Black, Purple, Yellow




Maya Tunic

★★★★★ 1 review

29,00 €

XS S M L XL

Color swatches: Green, White, Yellow



Chloe Compete Tank

★★★★★ 3 reviews

39,00 €

XS S M L XL

Color swatches: Blue, Red, Yellow

Compare Products

You have no items to compare.

My Wish List

You have no items in your wish list.

172.31.0.6

How can we profile: Blackfire

Menu Men X Tops - Women profile - X +

https://blackfire.io/profiles/05107995-27d8-4625-bcc4-4e775ab4b6ef/graph?settings%5Bdimension%5D=wt&settings%5Bdisplay%5D=landscape&settings%5BtabPane%5D=nodes&selected=&calln

Tops - Women 128 ms 8.74 MB Start Premium Free Trial

search

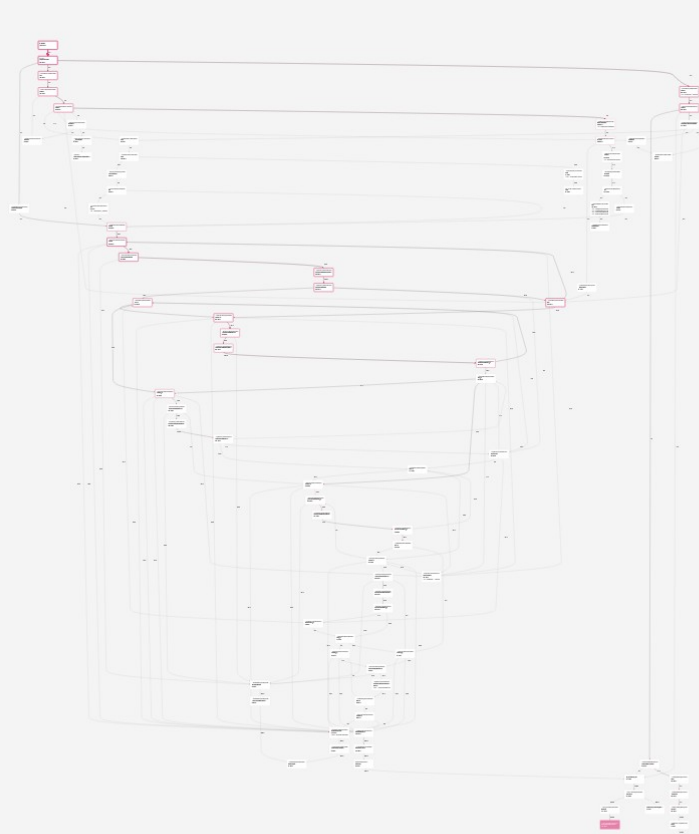
Functions

Recommendations

Assertions

Function / Metric	% Excl.	% Incl.	Calls
..ssLoader::findFileWithExtension			548
Composer\Autoload\includeFile			383
..er\ClassReader::getConstructor			214
gzuncompress			11
..AbstractFactory::createObject			190
..er(Config\Mapper\Dom::convert			1
..eader\ClassReader::getParents			499
...gl\Converter\Dom\Flat::convert			228
...ObjectManagerFactory::create			1
unserialize			9
..nfig\Config::inheritInterception			167
file_exists			988
...onverter\Dom\Flat::convert@1			131
..mposer\Autoload\includeFile@1			114
..nvironment\Request::setServer			2
..8357adda20c9567af7c555867			161
...Manager\Config\Config::extend			3
...fig\Developer::getInstanceType			266
..fig\Proxy::getConnectionName			4
..nterpreter\Composite::evaluate			228
..rk(App)\PageCache\Kernel::load			1
...Config::inheritInterception@1			140
...Relations\Runtime::getParents			674
...onfig::collectConfiguration@1			197
stream_socket_client			4
...anager\Relations\Runtime::has			674
...stem\DirectoryList::__construct			3
...nList\PluginList::inheritPlugins			6
...pe\System::get			11

main()



Support

Relatively easy to use

How can we profile: Blackfire



How can we profile: Blackfire

Relatively easy to use

Freemium

→ not all features



Comparing

Xdebug

Local use, easy to setup

Relatively hard to interpret the results correctly

Xhprof/Xhgui

Local use, some work to setup

Fairly easy to use, UI looks a bit dated

Tideways

Cloud Based

30 day trial with all features

Easy to use, nice UI + additional APM functionality

Blackfire

Cloud Based

Premium, not all features for free testing

Easy to use

Great new tool: Phpspy



Phpspy

Great new tool: Phpspy

Sampling Profiler

Written in C

Must Be Build against the
correct version of PHP

Linux only for the moment

Great new tool: Phpspy

```
phpspy -V73 -@ -P -x php
```

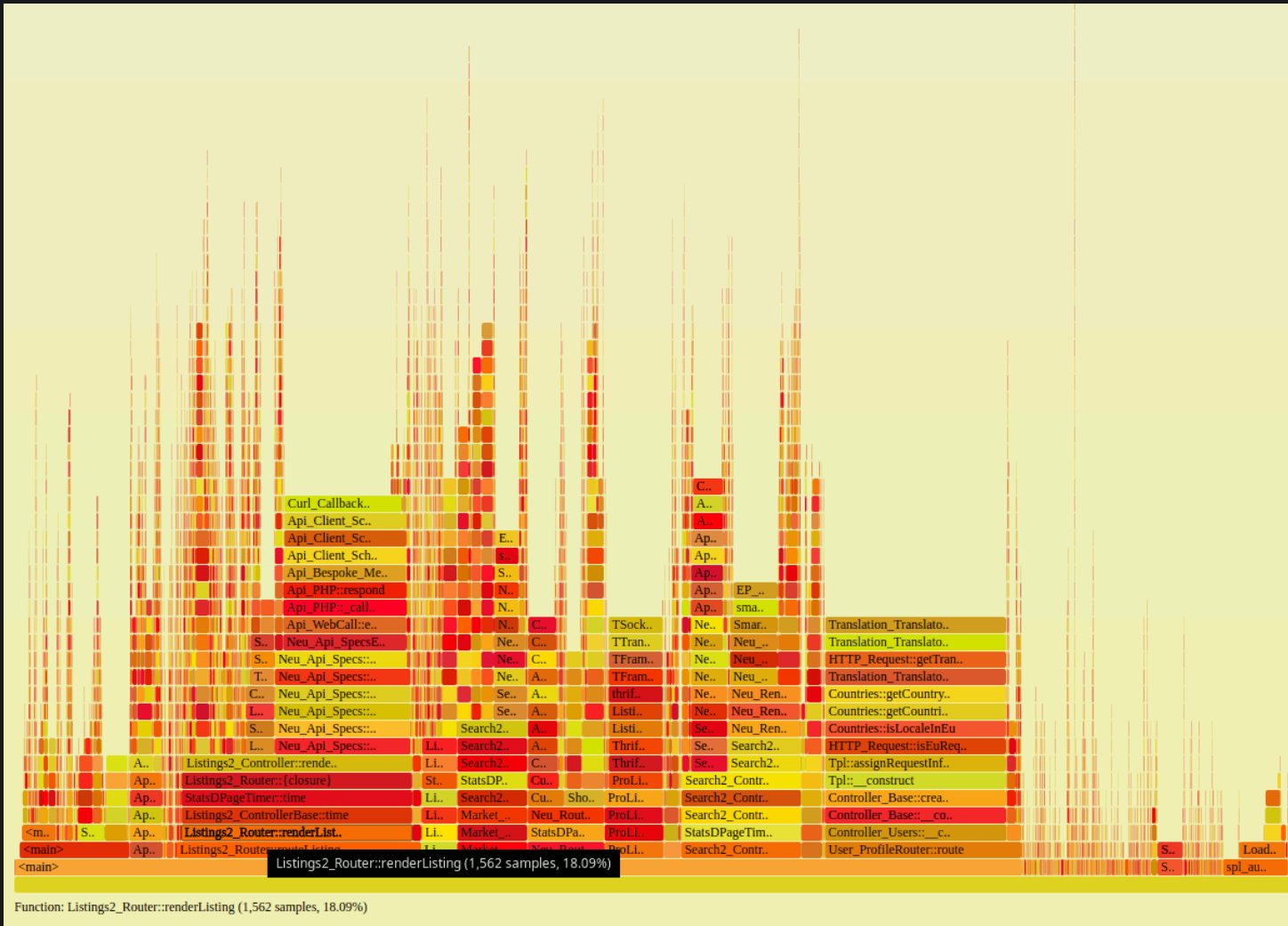
```
samp_count=1 total_err_count=0 func_count=5
```

tincl	texcl	incl	excl	incl%	excl%	func
1	1	1	1	100.00	100.00	stream_select <inter
1	0	1	0	100.00	0.00	system_with_timeout
1	0	1	0	100.00	0.00	run_test /home/adam/
1	0	1	0	100.00	0.00	run_all_tests /home/
1	0	1	0	100.00	0.00	<main> /home/adam/ph

Great new tool: Phpspy

```
adam@asx1c3:~/phpspy$
```


Great new tool: Phpspy



Pick one
Learn it!





How to approach profiling

How to approach profiling



Photo by Victor Van Weiden on Unsplash

What first?

How to approach profiling



Photo by Victor Van Weiden on Unsplash

What first?

- Slow things

How to approach profiling



What first?

- Slow things
- popular things

How to approach profiling



What first?

- Slow things
- popular things
- application initialisation

Analyse the profile

- hot path
- find the cause
- fix it
- ...
- 👍



demo





Popular Bottlenecks

Popular Bottlenecks



Photo by rihaj on Pixabay

Slow code

Popular Bottlenecks



Photo by rihaj on Pixabay

Slow code

Bad sql queries

Popular Bottlenecks



Photo by rihaj on Pixabay

Slow code

Bad sql queries

Disk I/O

Popular Bottlenecks



Photo by rihaj on Pixabay

Slow code

Bad sql queries

Disk I/O

Bad external services



And then it happens, slowness in production

First response

Don't Panic

Slowness in Production



First response

Don't Panic

Add more CPU

Slowness in Production



First response

Don't Panic

Add more CPU

Add more RAM

Slowness in Production



First response

Don't Panic

Add more CPU

Add more RAM

Block malicious actors

Slowness in Production





When system is
normalized

- Find slow parts
- Start profiling

Slowness in Production

Some usefull tools in production

- Monitoring
- APM
- atop
- strace
- ...

Slowness in Production



Closing



- find slower things while developing
- xhprof + xhgui
- don't trust profiles from systems under stress
- make popular pages cachable
- profile periodically

Questions?

I'm Ike, Developer / Operations
at Studio Emma



@BlackIkeEagle



PHP-WVL



DockerWest



Parchive



BlackIkeEagle



Archlinux TU



Vdebug



herecura.eu



Thanks

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