



Introduction to Tideways

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Seravo Webinar: Dismantling Wordpress Performance Bottlenecks

Performance and User Experience

“Delays of just 1 second are enough to interrupt a person’s conscious thought process, changing the experience into one of waiting for the system to catch up, rather than feeling as though you are directly controlling the interface.

This delay reduces conversion.”

The Need for Speed, 23 years later, Nielsen Norman Group
<https://www.nngroup.com/articles/the-need-for-speed/>

Tideways' foundation is a Tracing Profiler

- **Tracing:**
Recording and Reporting on the Execution of a Program
- **Profiling:**
Measuring Frequency or Duration of Function Calls, Memory, ...

Traces are then converted into different visualizations:

- **aggregated monitoring data**
High-level, macro view to provide context
- **profiling traces**
detailed insights for individual requests or scripts
- **error/exception traces**
aggregation of traces that failed with errors or exceptions
- **slow SQL traces**

Tideways lets you experience performance from a user perspective

Application and Use-Case Centric: What is the performance if the user performs an action?

For example “Look at a category page”, “search for products”, ...

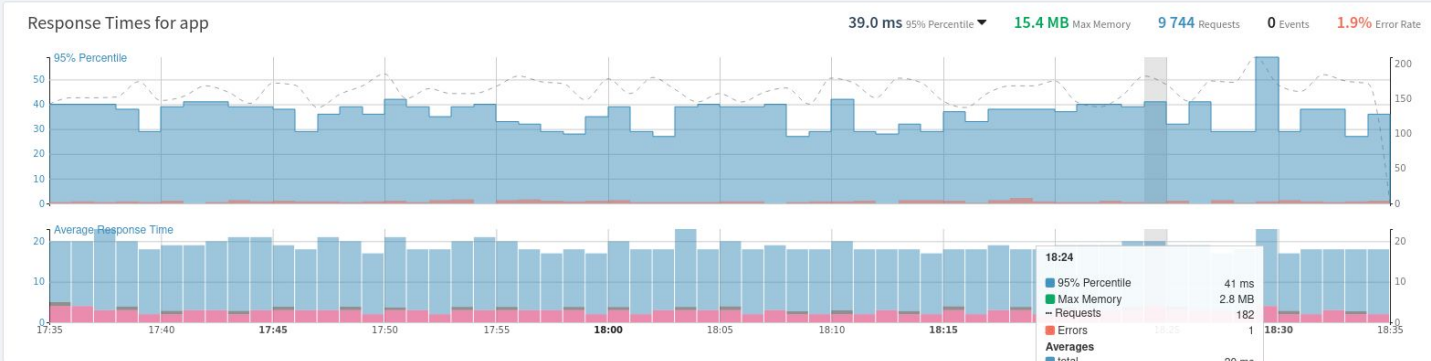
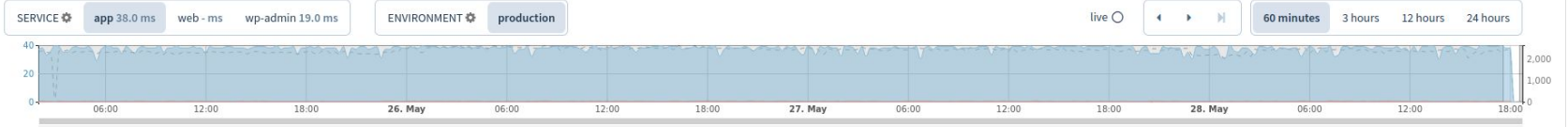
MONITORING OVERVIEW

The Macro Level

Aggregated View on Performance

Minute by Minute Data of

- Transactions
(Page Types, API Endpoints, Scripts)
- Services
(Frontend, Backend, CLI/Crons)
- Environments
(Production, Staging)
- Layers
(SQL, HTTP, Redis, ...)
- Releases/Deployments



Transactions

Name	Requests	Typical Response	Problem Response	Memory	Errors	Impact
single	2 089	23.0 ms	41.0 ms	2.8 MB	183	28%
404	3 835	10.0 ms	23.8 ms	2.7 MB	0	27%
front_page	975	21.0 ms	34.7 ms	2.8 MB	0	13%
search	966	21.0 ms	35.4 ms	2.8 MB	0	12%
date	906	21.0 ms	34.1 ms	2.8 MB	0	11%

PROFILING OVERVIEW

The Micro Level

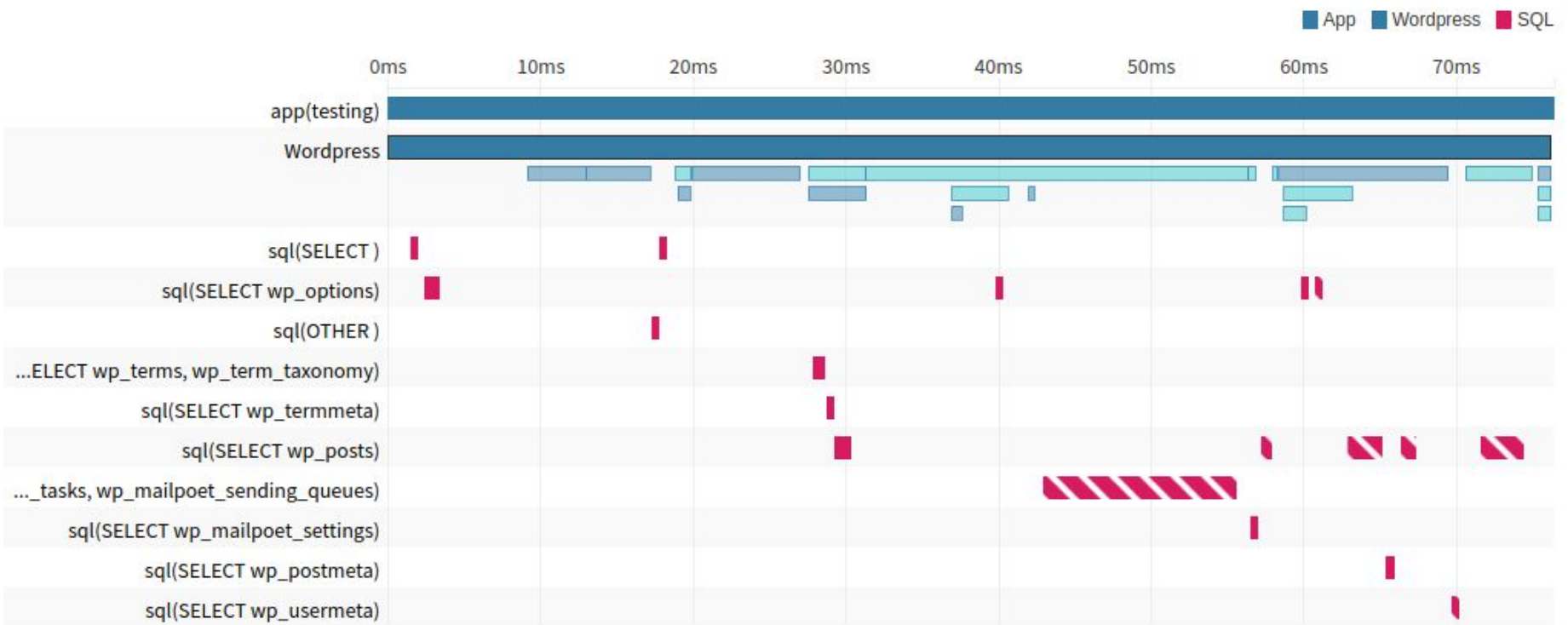
Understanding User Request Performance

Timeline Profiler

High-Level Profiler with Low Overhead records duration of events such as SQL Queries, HTTP requests and framework specific data.

Callgraph Profiler

Records duration and memory consumption of every userland and internal PHP function call with higher overhead.



Wordpress

Wordpress

Started at
0.06 msDuration
76.2 ms (100%)

Parent Spans

App /**PHP**

get_header

Started at
58.4 msDuration
11.1 ms

SQL

SELECT wp_posts

Duration

1.38 ms

Number of Calls

5x

SQL

```
SELECT
  *
FROM
  wp_posts
WHERE
  (
    post_type = ?
    AND post_status = ?
  )
  AND post_parent = ?
ORDER BY
  wp_posts.post_title ASC
LIMIT
  ?, ?
```



load_textdomain ☰

+2 folded calls

🕒 Time (total/self)	29.3 ms (28%)	0.06 ms (0.06%)
📄 Calls		9x (0.00%)

Search 🔍

pear/mail_mime 1.1% composer/composer 0.21% Sudzy 0.13% nesbot/carbon 0.11% symfony/polyfill-mbstring 0.01%

symfony/polyfill-php72 0.00% ✕

Function Name	Calls	Total Time		Self Time	
mysqli_query	32x	10.5 ms	10%	10.5 ms	10%
MO::import_from_reader	6x	28.2 ms	27%	9.18 ms	8.8%
PDOStatement::execute	40x	7.45 ms	7.1%	7.45 ms	7.1%
unpack	11662x	4.93 ms	4.7%	4.93 ms	4.7%
MO::make_entry	5819x	7.48 ms	7.1%	4.20 ms	4.0%
explode	17833x	2.84 ms	2.7%	2.84 ms	2.7%
WP Hook::apply_filters@1	1179x	14.2 ms	14%	2.55 ms	2.4%

Parents (4)

Function Name	Calls	Total Time	
load_default_textdomain	1	13.6 ms	46%
load_plugin_textdomain	5	8.59 ms	29%
Localizer::loadGlobalText MailPoet\Config	1	5.93 ms	20%
load_plugin_textdomain@1	2	1.25 ms	4.2%

Children (9)

Function Name	Calls	Total Time	
MO::import_from_file	6	28.3 ms	97%
Translations::merge_with	1	0.90 ms	3.1%
is_readable	9	0.05 ms	0.16%

TRIGGERING TRACES

Three different ways to control the collection of traces.

Randomly (Default)

Based on a random sampling percentage Tideways automatically collects Timeline traces in the background by default to provide a broad picture of the application performance.

CLI / Chrome Extension

During performance debugging sessions you can instantly collect traces using the CLI tool or Chrome Extension. Instant access to profiling data helps identifying bottlenecks without delay.

Tracepoints

Reconfigure the sampling mechanism from random to collecting only specific traces based on endpoint, http status, url or any other request variable for a few hours, concluded with a report afterwards.

RESOURCES

Register for a free, 30 day trial of Tideways

<https://app.tideways.io/register>

The Undercover ElePHPant Podcast

<https://undercover-elephpant.com/>

Tideways Newsletter

<https://tideways.com/newsletter>