## How to break Matomo and also some inputs on how to fix it

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## Digitalist



## Who I am



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# Who we are Digitalist

a digital product agency

that loves Open Source

Because we know that good ideas multiply when shared



Oops... there was a problem during the request. Maybe the server had a temporary issue, or maybe you requested a report with too much data. Please try again. If this error occurs repeatedly please contact your Matomo administrator for assistance.

## Breaking Matomo pro tips

- 1. Give users in Matomo too much permissions without proper Matomo training
- 2. Write bad applications and blame Matomo for the issues
- 3. Let your IT department host Matomo without proper Matomo training

## Give users in Matomo too much permissions without proper Matomo training

- Creating reports, segments, dimensions, tag manager tracking etc requires skills.
  - often leading to bad data or reports
- Segments in particular should be handled carefully
  - They can kill your performance
  - Done wrong they will also make your reporting bad

## Write bad applications and blame Matomo for the issues

Matomo is just a "stupid" system

- If you send bad data into Matomo, you will get bad reports
- URL's and titles are the 2 most important things to manage properly
  - o and to many URLs can affect your performance

## Let your IT department host Matomo without proper Matomo training

#### This often fails since

- You need to know Matomo to maintain it (and honestly this is not something that your IT department usually focus on)
  - Constant updates & testing
  - Constant monitoring
  - Constant optimization
  - Constant configuration

### **Users**

Segment, custom reports and aggregation

When you create a segment or a custom report

 You add a new job in Matomo (which will require more server power)

Avoid having more than 100 segments for a site

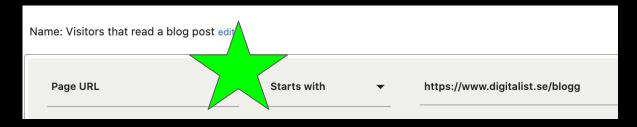
#### Avoid segments och custom reports with wildcards (contains)

These segments and reports create sql queries that cannot use indexes in the database (full table scan). For example:

#### SELECT \* from TABLE where TITLE like %search\_string%



#### Instead try to create segments using "Starts with" if possible



#### Only give users with knowledge ability to create segments

- To avoid "bad configurations"
- To avoid having similar segments
- To avoid performance issues

Look into global.ini.php

adding\_segment\_requires\_access = "admin"

• Possible values are "view", "write", "admin", "superuser"

## **Bad applications**

#### Number of urls

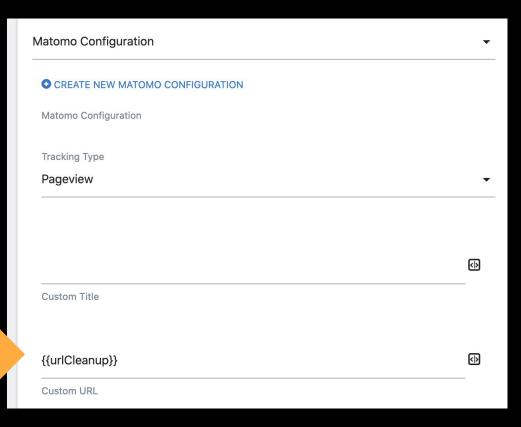
The number of unique urls affects the performance of archiving.

#### Tips:

- Make sure all urls and searches are stored with lowercase.
- Delete url parameters (if you can)
- Remove any training slashes
  - o /my-page "is not the same as" /my-page/
- Do you have pages for, for example, unique cases with ID in the url /
- /issue/123, /issue/124 etc
  - o anonymize them: /issue/issuepage

#### Fixing bad URLs in Matomo

```
Custom JavaScript
Name
urlCleanup
Configure this variable
JavaScript Function
function () {
 //Store URL as lowercase
var customURL = location.href.toLowerCase();
//Remove trailing slashes
customURL = customURL.replace(/\/$/, "");
 //Anonymize ordernumber in URL
 // /order/123456 will become /order/orderpage
 customURL = customURL.substring(0, customURL.indexOf('order/') + 5) +
"orderpage";
return customURL;
```



#### Url structure

The URL structure is important to do good reporting

Good	Bad
/section	
/section1/page1	/page1
/section1/page2	/page2
/section2/page3	/page3
/section2/page4	/page3

#### A good url structure gives you this nice aggregations

Pages	
PAGE URL	▼ PAGEVIEWS
± blogg	17,407
☑ /index	11,357
☑ /om-oss	2,532
± kundcase	2,415

## **Optimizing Matomo**

### How do you know if you have problems?

#### **Common issues**

- Transition report is slow (especially over longer periods of time)
- Custom date ranges are slow
- Loading visitor log is slow
- No data for today (or data comes in late)
- Users get 500 errors (time outs)

## Basic tips

#### HOW TO CONFIGURE MATOMO FOR SPEED

https://matomo.org/docs/optimize-how-to/

Good general advices to start with

#### **Performance basics for Matomo (LAMP stack)**

Component	APACHE	MySQL	PHP
Hardware	CPU intensive	Memory & Disc	Memory
Optimize	Threads	MySQL Variables	PHP cache

### Set up Queued Tracking

- Will offload you Database significantly
- Will make it possible to restart Matomo (for updates etc) without loosing tracking data

### Example of Matomo configs to look into

- Review the number of allowed rows you allow in the reports (do not add more than necessary)
- Turn off auto-scan forms (if you have the Form Analytics plugin)
- Keep track of how long you store raw data (Visitor Logs)
- Turn off plugins you do not use plugins consume resources!

## **MYSQL**

**Use MySQL (not Maria DB)** 

Keep track of DB size https://matomo.org/docs/managing-your-databases-size/

MySQL tuning (Use tools like tuning-primer or MySQLTuner för insights)

Monitor number of tables over time (Adjust open\_table\_cache + table definition cache)

#### Matomo specific database Indexes

**WARNING - test first!!** 

#### **Transition reports**

https://matomo.org/faq/how-to/faq\_161/

#### **Visitor log**

https://forum.matomo.org/t/new-index-need-for-piwik-log-visit-table-and-code-chang e-for-php-as-well/31467/18

If you have several sites (usually one is larger that the other)
Separate archiving between sites.

- ./console core:archive --url="https://example.com/" --skip-idsites=1
- -./console core:archive --url="https://example.com/" --force-idsites=1

#### Run segments separately

- ./console core:archive --url="https://example.com/" -skip-all-segments
- -./console core:archive --url="https://example.com/"
- --force-idsegments=1,2,3,4,5,6
- ./console core:archive --url="https://example.com/"
- --force-idsegments=7,8,9,10

#### Run segments separately

- ./console core:archive --url="https://example.com/" -skip-all-segments
- -./console core:archive --url="https://example.com/"
- --force-idsegments=1,2,3,4,5,6
- ./console core:archive --url="https://example.com/"
- --force-idsegments=7,8,9,10

#### **Optimize memory and threads**

- ./console core:archive --url="https://example.com/" --php-cli-options="-d memory\_limit=4G" --concurrent-requests-per-website=10 --concurrent-archivers=10

Warning: Test and monitor this carefully

## Getting some help

https://github.com/digitalist-se/DBHealth

A Matomo plugin that will give you some help

## Questions?