

JaJuMa

Smart Speculations Rules

05/2024

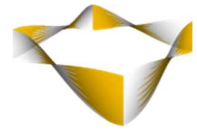


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1. Introduction

[JaJuMa Smart Speculations Rules](#) for Magento 2 automatically fetches user navigation data from Google Analytics or Matomo Analytics. Based on this data, the most likely clicked link is calculated for each URL on a site. These “most likely clicked links” are then added to each page as Speculations Rules for prerendering with high priority.

Please see below for more details and configuration options provided by this extension.



2. System Requirements & Installation

For installing the extension, follow installation process as with any Magento Extension.

!!! Please note:

For using Google Analytics as data source, please see additional steps for setting up Google Analytics API access described in section 2.3.

For using Matomo Analytics as data source, please see section 2.4.

!!!

2.1. Extension Installation via composer

For installing the extension via composer, follow installation process as with any Magento Extension from Magento Marketplace.

See: <https://devdocs.magento.com/extensions/install/>

2.2. Manual Extension Installation via FTP

For manual installation by FTP, please follow these steps:

Before Installing

1. We recommend you to duplicate your live store on a staging/test site and try installation on your staging/test site before deploying to your live store
2. Backup Magento files and the store database

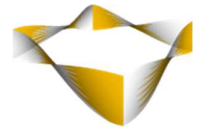
Please Note: It's very important to backup all themes and extensions in Magento before installation, especially when you are working on a live server.

We strongly recommend you to do not skip this step.

Upload the Extension

1. Log into your hosting space via a FTP client (e. g. FileZilla, WinSCP, cuteFtp)
2. Create Folder: <magentoroot>/app/code/Jajuma/SmartSpeculationsRules
3. Unzip extension package and upload files into:
<magentoroot>/app/code/Jajuma/SmartSpeculationsRules
4. Enter and run the following commands at the command line:

```
php bin/magento setup:upgrade  
php bin/magento setup:static-content:deploy
```



2.3. Setup Google Analytics API Access

For using Google Analytics API, this extension requires the following package to be installed:

- google/analytics-data

When installing this extension

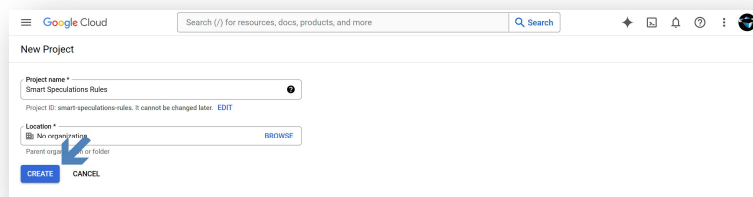
- via composer, this package will be installed automatically.
- Manually, please install from here: <https://github.com/googleapis/php-analytics-data>

2.3.1. Setup Google Cloud Project

Enable Google Analytics Data API:

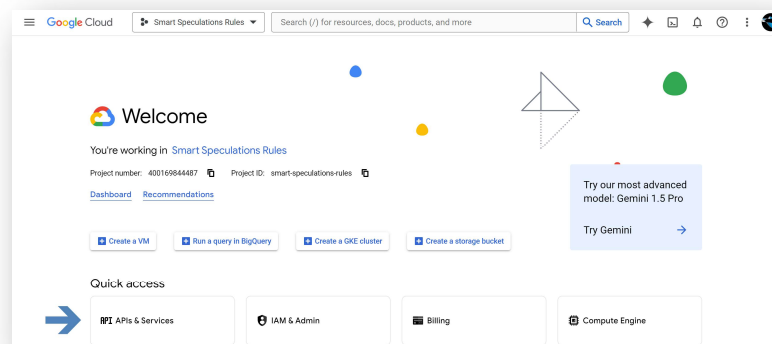
1. Project Dashboard:

Go to your Google Cloud Project dashboard and create a new project or use an existing one: <https://console.cloud.google.com/>



2. APIs & Services:

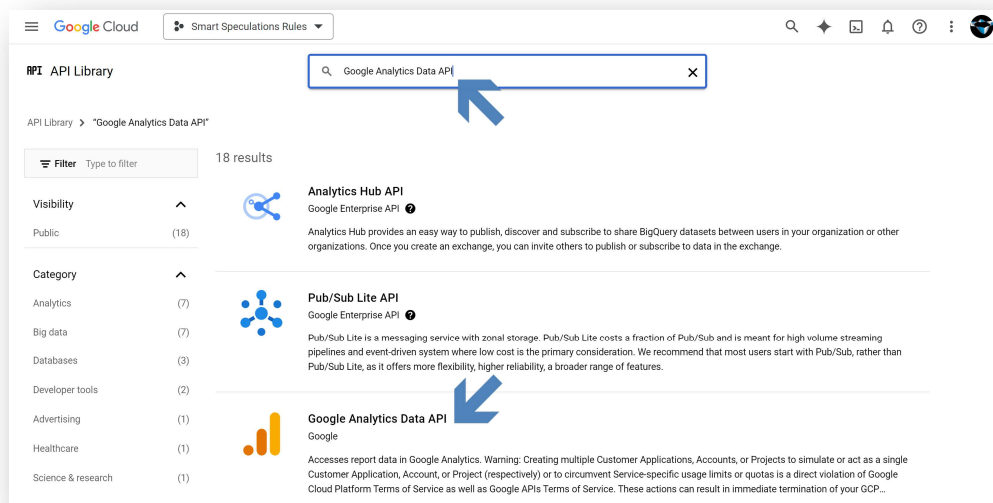
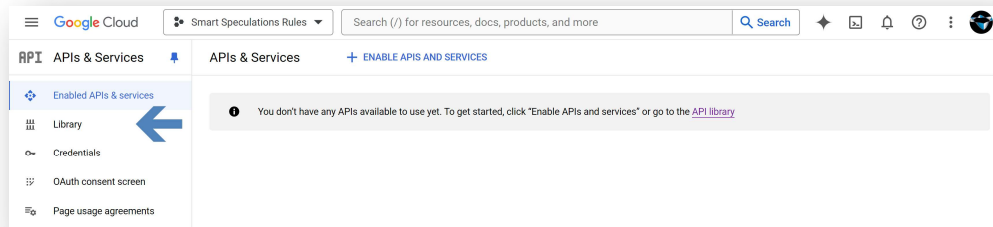
Navigate to the "APIs & Services" section.



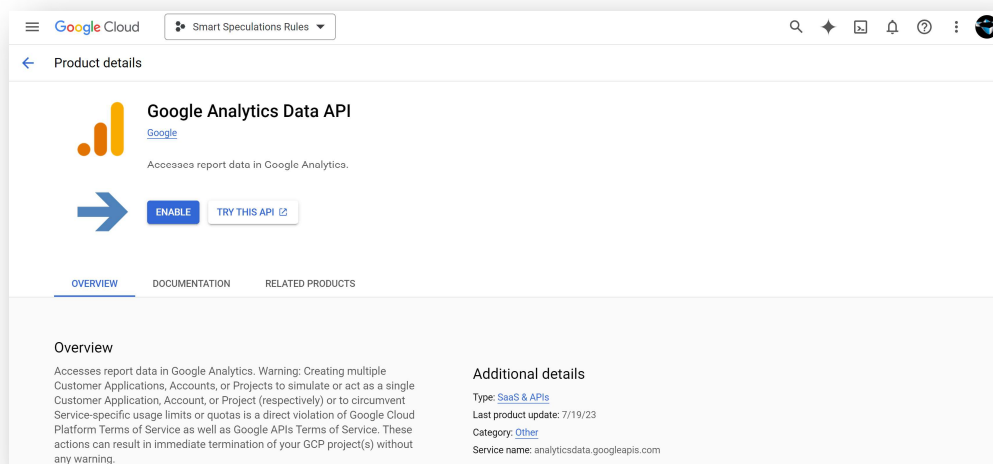


3. Search and Enable:

Go to "API Library" and search for "Google Analytics Data API"



and click "Enable".

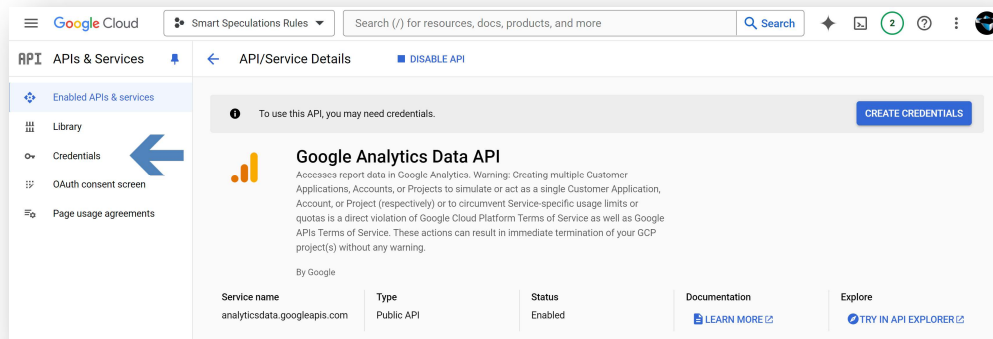




Create Service Account:

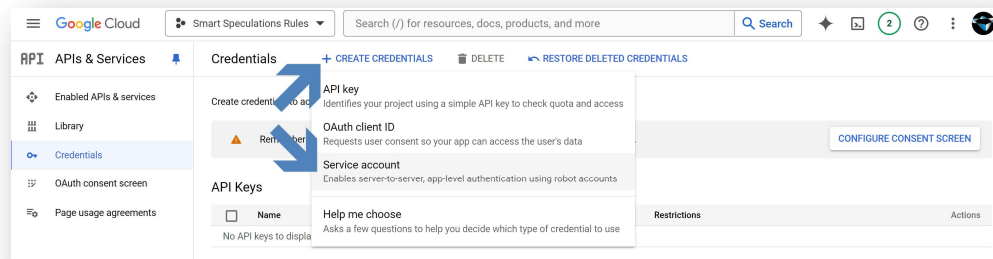
1. APIs & Services -> Credentials:

Go to the "Credentials" subsection within APIs & Services in your GCP project dashboard.



2. + Create Credentials:

Click "+ Create Credentials" and choose "Service Account."





3. Service Account Details:

Fill in a descriptive name for your service account (e.g., "smart-speculations-rules-ga4-api"). You can also add a brief description if you'd like. Click on "Create and Continue."

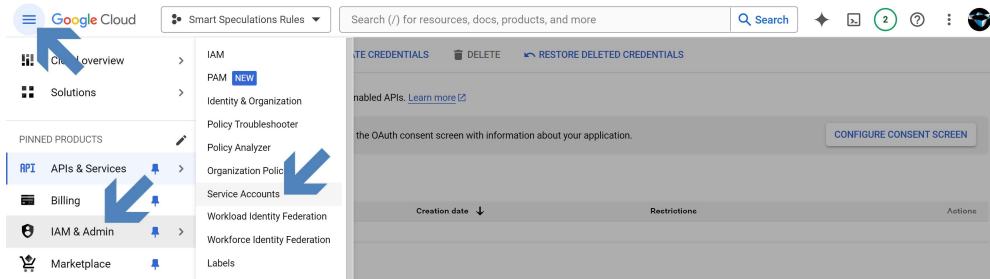
4. Other Details:

You can leave "Grant this Service Account Access to Project" and "Grant Users Access to this Service Account" empty and proceed to the button "Done."

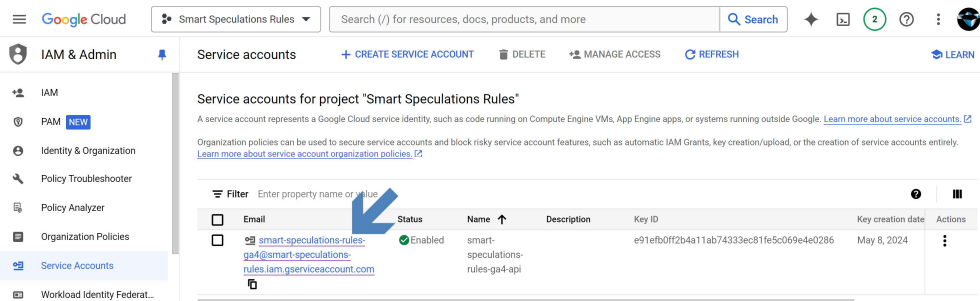


5. Download JSON Key:

In your GCP Project, navigate to the "IAM & Admin" section and select "Service Accounts."

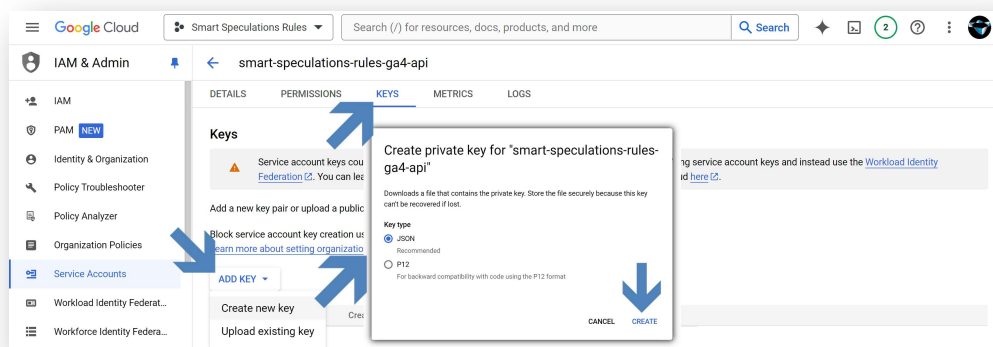


Locate the service account you just created (e.g., "smart-speculations-rules-ga4-api") and click to see the account details.



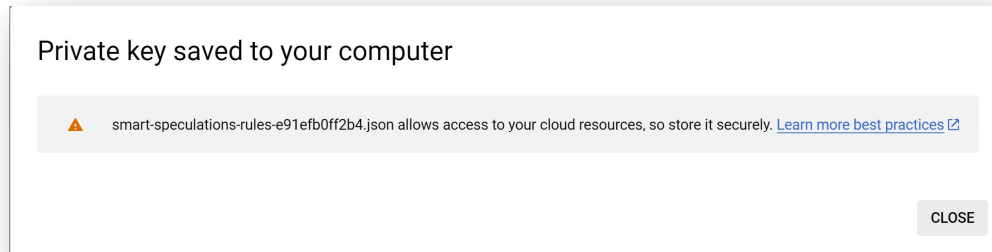
Click on the "Keys" tab within your service account's details.

Click on the "Add Key" button, choose "Create New Key", and select the "JSON" format.



The JSON key file will be downloaded to your local computer.

→ **This JSON key file needs to be uploaded in your Magento Backend (section 4.2.1- Google Analytics) and includes the email address that needs to be granted access to your GA4 property (see next section).**



2.3.2. Setup API Access in Google Analytics

Grant Service Account Access to GA4 Property:

1. Find Your Service Account Email:

Open the JSON key file you downloaded earlier when creating your service account in GCP. Locate the "client_email" field and copy the email address. This is the unique identifier for your service account.

2. Navigate to Your GA4 Property:

Go to the Google Analytics platform and access the specific GA4 property where you want to extract data.

3. Admin Settings:

Within your GA4 property, navigate to the "Admin" settings.

4. Property Access Management:

Look for a section labeled "Property Access Management". This is where you'll add new users.

5. + Add Member:

Click the "+ Add Member" button to add a new member (your service account).

6. Paste Email and Set Permissions:

Paste the service account's email address you copied earlier. Since you need to read data, grant the "Viewer" permission level.

7. Save:

Click "Save" to finalize granting the necessary permissions to your service account.



2.4. Setup Matomo Analytics API Access

For using Matomo Analytics as data source, you need either Matomo on premise or Matomo Cloud integrated on your site.

For accessing the Matomo API an authentication Token with “View” permissions is needed. Please see this link on how to get this Token:

https://matomo.org/faq/general/faq_114/



3. Extension Scope

[JaJuMa Smart Speculations Rules](#) for Magento 2 provides following options for prerendering via Speculations API:

- Fetch tracking data from Google Analytics and determine the “most likely next clicks”
- Update Google Analytics data automatically via cron
- Add the “most likely next clicked” URLs to each page as prerender Speculations Rule with priority “immediate”
- Debug Tool



4. Configuration

In Magento Backend see

JaJuMa -> Smart Speculations Rules -> Configuration

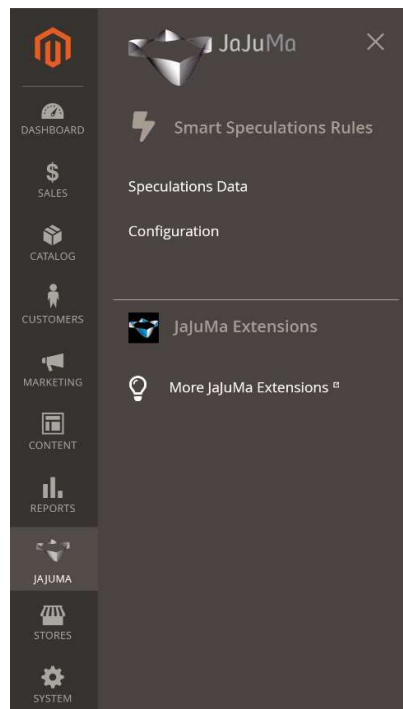
For JaJuMa Smart Speculations Rules configuration:

Extension Information	☺
General	☺
Data Source	☺
Speculations Rules	☺
Cron Jobs	☺

The grid in

JaJuMa -> Smart Speculations Rules -> Speculations Data

Displays the raw data used for Speculations Rules fetched from Google Analytics.





4.1. General

To enable Smart Speculations Rules, select from Drop Down “Enable”:

- Yes → Smart Speculations Rules is enabled
- No → Smart Speculations Rules is disabled

General

Enable [store view] Yes
Enable Smart Speculations Rules

Debug Mode [store view] No
When enabled, a small popup will display in Frontend.
The popup shows if current page view was prerendered or not,
together with performance KPIs for current page view

To enable the Debug Mode, select from Drop Down “Debug Mode”:

- Yes → Debug Mode is enabled
- No → Debug Mode is disabled

With debug mode enabled, a small popup will display in Frontend.

The popup shows if current page view was prerendered, together with Performance KPIs for current page view

4.2. Data Source

The module supports Google Analytics OR Matomo Analytics as data source.

Please select the data source to be used from drop-down and configure as described in following sections.

Data Source

Source Type [store view] Matomo
Google Analytics
Matomo



4.2.1. Google Analytics

For setting up Google Analytics as data source please first see section 2.3 - Setup Google Analytics API Access and follow steps as described to

- Setup your Google Cloud Project and get your credentials .json file
- Configure access to your Google Analytics 4 property four your Google Cloud Project.

With your Google Cloud Project and Google Analytics account setup completed, please configure the module as follows:

- **GA Property Code:**
Input your Google Analytics 4 Property Code
- **Upload Google Cloud Project Credentials json:**
Upload the json file obtained via steps as described in 2.3.1 - Setup Google Cloud Project
- **API Limit Requests/Month:**
The Google API for getting Analytics data can be used for free while usage is within a free quota of currently 50000 requests per month.
API usage above the free quota is chargeable.
To avoid costs for the Google API by this module, you can input the free quota limit here. Or leave input empty to fetch unlimited data, costs may occur in this case for the Google API.
- **Number of API Requests Current Month:**
Just for information, displays the API usage within current month.

Data Source

Source Type
[store view]
Google Analytics

Data Source GA

GA Property Code
[store view]
210148528

Input the property code of your Google Analytics 4 property.
e. g.: 210148528

Upload Google Cloud Project Credential json
[store view]

Choose File
No file chosen
google_analytics_api_1.json
Delete File

Upload the credentials .json file for your Google Cloud Project.
Please refer to the [Manual](#) for further instructions on how to set up your GCP and get the credentials .json.

API Limit Requests/Month
[store view]
50000

Input a requests per month limit for Google API,
to avoid or limit costs occurring from Google API usage.
Default value: 50000

Number of API Requests Current Month
[store view]
1

Displays the number of API requests so far within current month



4.2.2. Matomo Analytics

For setting up Matomo Analytics as data source, please create an authentication Token with “View” permissions as described here: https://matomo.org/faq/general/faq_114/ and configure as described below:

- **Matomo URL:**
Input URL to your Matomo Site, e. g. 'https://matomo.yourdomain.com/'.
- **Site ID:**
Input the SiteID as configured in your Matomo Site in Settings > Websites > Manage.
- **Access Token:**
Please create an auth token for a Matomo user with only view access and input here: https://matomo.org/faq/general/faq_114

Data Source

Source Type
[store view]

Matomo

⌵ Data Source Matomo

Matomo Url
[store view]

https://matomo.jajuma.de/

Site ID
[store view]

1

Access Token
[store view]

.....



4.2.3. Data Source General

Following configs allow you to control the data fetched from data source.

- Ignore URLs:**
 A list of | separated strings/RegEx.
 Links matching these strings/RegEx will NOT be saved as Speculations Data.
 Use this config to e. g. exclude unique/very rarely used URLs.
 Examples:
 - /sales/order/view/order_id/XXX
 - /checkout/cart/configure/id/XXX/product_id/YYYY/
 - /customer/account/login/referer/aHR0..lMkMv/
- Ignore URL Params:**
 A list of | separated strings/RegEx.
 URL params matching these strings/RegEx will be removed/ignored when saving URL as Speculations Data/when getting URLs for Speculation rules.

 Use this config to e. g. exclude URL Params with unique values (e. g. gclid, fbclid) or URL Params that do not change the page content (e. g. utm_source, mtm_campaign)
- Get Data For Last X Days:**
 Configure the time span in days for which data will be fetched from data source.
 E. g. 30 days -> Input '30'

Data Source
⌵

⌵ Data Source GA

Ignore URLs
[store view]

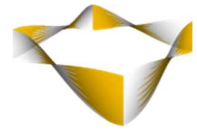
A list of | separated strings/RegEx.
Links matching these strings/RegEx will NOT be saved as Speculations Data.
Use this config to e. g. exclude unique/very rarely visited URLs.
Examples:
- /sales/order/view/order_id/XXX
- /checkout/cart/configure/id/XXX/product_id/YYYY/
- /customer/account/login/referer/aHR0..lMkMv/

Ignore URL Params
[store view]

A list of | separated strings/RegEx.
URL params matching these strings/RegEx will be removed/ignored when saving URL as Speculations Data/when getting URLs for Speculation rules.
Use this config to e. g. exclude URL Params with unique values (e. g. gclid, fbclid) or URL Params that do not change the page content (e. g. utm_source, mtm_source)

Get data for last X days
[store view]

Configure the time span in days for which data will be fetched from data source.
Example: 30



4.3. Speculation Rules

Following configs allow you to control how URLs are added to your site as Speculation Rules for prerender with eagerness = immediate.

- Output Max X Speculation URLs:**
 Configure the maximum number of URLs to be added as Speculation Rule for prerender.
 Input a value between 1 and 10. The recommended value for best result is 10
 Note: Values higher than 10 will be ignored by Browsers.
- Output Only Speculation URLs With Probability > X%:**
 The module calculates the probability with which a link will be clicked.
 Input a percentage value as minimum probability for a link to be added as Speculation Rule. E. g. 5% -> Input: '5'
- Black List Urls:**
 A list of | separated strings.
 Links matching these strings/RegEx will NOT be added to prerender list.
 Note:
 To avoid unexpected side effects by prerendering, it is strongly recommended to exclude certain URLs from prerendering.
 As a rule of thumb, at least URLs that are not cacheable by FPC, display confidential data, trigger actions etc. should not be prerendered.

Speculations Rules

Output Max X Speculation URLs

[store view]

10

Configure the maximum number of URLs to be added as Speculation Rule for prerender.

Input a value between 1 and 10. The recommended value for best result is 10

Note: Values higher than 10 will be ignored by Browsers.

Output Only Speculation URLs With Probability > X%

[store view]

5

The module calculates the probability with which a link will be clicked.

Input a percentage value as minimum probability for a link to be added as Speculation Rule.

Example: 5

Black List Urls

[store view]

customer|sales\order|review|login|logout|cart|checkout|search|dow

A list of | separated strings.

Links matching these strings/RegEx will NOT be added to prerender list.

Note: To avoid unexpected side effects by prerendering, it is strongly recommended to exclude certain URLs from prerendering.

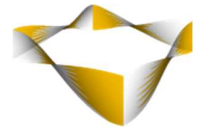
As a rule of thumb, at least URLs that are not cacheable by FPC, display confidential data, trigger actions etc. should not be prerendered.

Add Manual Rules

[store view]

This text input allows to add additional Speculations Rules supplementing the Speculations Rules added by this module based on tracking data and click probability.

Note: For setting up your custom Speculations Rules, please refer to the manual and general documentations and guides available online.



Add Manual Rules

This text input allows to add additional Speculations Rules supplementing the Speculations Rules added by this module based on tracking data and click probability.

A suggested setup would be for example like this:

Let the module add a Speculations Rule with

- Type: Prerender
- Source: List
- Output max 10 URLs based on collected Speculations Data
- With eagerness = immediate
- ➔ These rules will trigger as soon as possible and use the 10 slots allowed by browsers for prerendering with eagerness = immediate for high traffic pages

And then add another Speculations Rule manually, e. g.

- Type: Prerender
- Source: Document
- Defined scope /excluded URLs according to your site
- With eagerness = moderate
- ➔ These rules will trigger by user interaction (mouseover/pointerdown) and use the 2 slots allowed by browsers for prerendering with eagerness = moderate for pages not (yet) prerendered by the Speculations Rules added by the module

Note: This config is only for your convenience, you may also add your custom/manual rules via any template, static content or other config. For setting up your custom Speculations Rules, please refer to general documentations and guides.



4.4. Cron Jobs

To fetch the Speculations Data from Data Source, enable and configure cron jobs as described below:

To enable Cron Jobs, select from Drop Down **“Enable”**:

- Yes → Cron Jobs are enabled
- No → Cron Jobs are disabled

Update URL List Cron Schedule

This cron job updates the list of URLs in your data source and saves the URLs to DB.

E. g.: For updating URLs every Sunday at midnight: `0 0 * * 7`

See this online cron schedule editor for more options: <https://crontab.guru/>

Last Time URL List Was Updated:

Displays when the **Update URL List Cron** was running the last time.

Update Speculations URLs Cron Schedule

For each URL saved in DB, this cron job will fetch the links clicked by users and how often the links were clicked and saves this data in DB as Speculations URLs

E. g.: For running the update Speculations URLs cron every 5 minutes: `*/5 * * * *`

See this online cron schedule editor for more options: <https://crontab.guru/>

Limit Number of URL

The maximum number of URLs for which Speculations Data will be updated per cron run.

Pending Speculation URL Updates

Displays number of URLs pending an update for Speculations Data since last Update URL List Cron run.

Notes:

- Each *Update URL List Cron* will trigger an update of Speculations URLs by *Update Speculations URLs Cron*
- Please make sure to have enough time in between *Update URL List Cron* runs for the *Update Speculations URLs Cron* to update the Speculations URLs for all your URLs
- When using Google Analytics, configure update frequency with potential costs for API usage in mind
- When using Matomo Analytics Cloud, the API rate limit is 500 requests / 5 mins



Cron Jobs

Enable Cron
[store view]

Yes

Select "Yes" to enable the cron jobs for collecting and updating Speculations data from configured data source.

Update URL List Cron Schedule
[website]

0 0 * * 7

This cron job fetches and updates the list of URLs for your Speculations Data from your data source and saves the URLs to DB.

E. g.: For updating URLs every Sunday at midnight: `0 0 * * 7`

See this online cron schedule editor for more options: [\(Link\)](#)

Last Time URL List Was Updated
[store view]

No API Call to Get Current Uri

Displays when the **Update URL List Cron** was running the last time.

Update Speculation URLs Cron Schedule
[website]

* / 5 * * * *

For each URL saved in DB, this cron job will fetch the links clicked by users, calculates the probability with which a link will be clicked next and saves this data in DB as Speculations Data.

E. g.: For running the update Speculations URLs cron every 5 minutes: `* / 5 * * * *`

See this online cron schedule editor for more options: [\(Link\)](#)

Limit Number of URL
[website]

50

☐ Use system value

The maximum number of URLs for which Speculations Data will be updated per cron run.

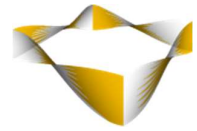
Pending Speculation URL Updates
[store view]

0

Displays number of URLs pending an update for Speculations Data since last Update URL List Cron run.

Notes:

- Each Update URL List Cron will trigger an update of Speculations URLs by Update Speculations URLs Cron
- Please make sure to have enough time in between Update URL List Cron runs for the Update Speculations URLs Cron to update the Speculations URLs for all your URLs



5. Command Line Interface (CLI)

The module provides a CLI with 2 commands.

For updating the URL list from data source via CLI same as with *Update URL List Cron*, please run following command:

```
php bin/magento jajuma:speculation_url:collect_current_url
```

For updating the Speculations URLs from data source via CLI same as with *Update Speculations URLs Cron*, please run following command for update Speculations URLs with configured Limit Number of URL:

```
php bin/magento jajuma:speculation_url: collect_next_url
```

or following command for update Speculations URLs with no limit:

```
php bin/magento jajuma:speculation_url: collect_next_url --limit=all
```

6. Storefront

This module does not show in Frontend.



7. Support

Please feel free to contact JaJuMa support team via support@jajuma.de.

In case any additional information is required. We'd be more than happy to assist in setting up the extension.