

# Analytics Backup by QA

## Preparation Guide

November 30, 2023

In this guide, we refer to "Analytics Backup by QA" as "GABQ" for short.  
 "WP" is an abbreviation for "WordPress."  
 Google Universal Analytics may be abbreviated as 'UA'.

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# Step 1. Estimate Environment to Be Prepared

When it comes to taking backups, the primary requirements include the following four elements:

1. Server
2. WordPress ← To be installed on the server
3. Analytics Backup by QA Plugin ← To be installed on WordPress
4. Google Cloud Project ← For API integration with Analytics Backup by QA

Especially, it's important to consider server specifications based on the backup data volume.

Here are some tips for evaluating the environment you need to prepare before implementing GABQ.

## 1. Server

- What type of server should be prepared?

It's necessary to have a server that can accommodate the volume of data you want to back up.

The main criteria for judgment are as follows:

- (1) A storage capacity sufficient to hold the data volume
- (2) Adequate PHP memory capacity to download and process data from Universal Analytics (UA)

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Be sure to refer to Step 2 "[Setting up the environment](#)" for additional details regarding the server and server settings.

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### (1) Storage Capacity

Because GABQ data is stored in files, a server with SSDs is strongly recommended.

When it comes to the size of your backup data files, we advise referring to the size calculated using the "Data Backup Calculator" link provided below. (It's crucial that the storage can accommodate the calculated number of files and data volume.) Generally, it's advisable to have a storage capacity of 100MB or more.

▼ Data Backup Calculator (Analytics Backup by QA website)

<https://ga-backup.com/en/#simulator>

### (2) PHP Memory Capacity

GABQ sends requests to the Google API and takes backups in units of "URLs retrieved per day." During this process, the server's PHP memory is utilized.

Table A below shows the estimates of the number of "URLs retrieved per day" that GABQ can back up based on the PHP "memory\_limit".

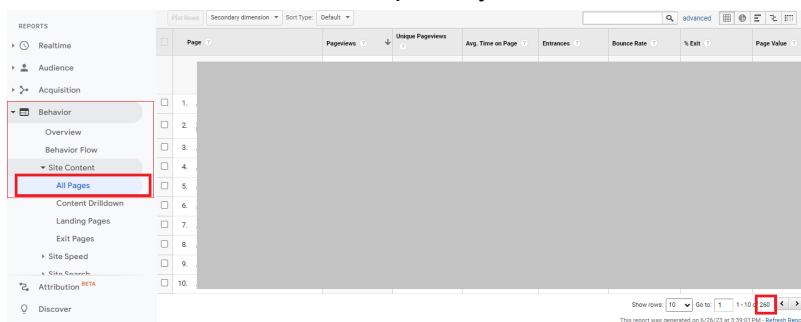
(Table A)

memory_limit	Approx. Number of URLs Retrieved Per Day (*)
256M or more	1000-3000
512M or more	2000-5000
1000M or more	3200-8000
2000M or more	4000-10000
3500M or more	10000-30000

- This is an estimate when a server is used exclusively for GABQ.
- The values presented in the table are intended as approximations and should not be considered as absolute guarantees.

(a) Determine the "Number of URLs retrieved per day" in Universal Analytics (UA).

- i) Log in to Google Analytics.
- ii) Select and display your backup target view.  
(If you plan to back up many views, check the one with the highest traffic.)
- iii) (Left menu) Behavior > Site Content > Display "All Pages."
- iv) Select a single date with a highest traffic for the date range.  
(If unsure, you may want to display 1 to several months' data, and use graphs as reference to find a high-traffic day.)
- v) The number of total rows, displayed in the lower-right corner, represents the "number of URLs retrieved per day".



(b) Within Table A, find the "memory\_limit" value that meets the number of URL determined in (a).

The "memory\_limit" value that fulfills the URL count determined in (a) will become the necessary server memory capacity for taking backups without reducing data.\*

\*See Step 2-4: Adjusting Server Environment > [About "Backup Mode"](#)

PHP Memory is used not only for backup processes but also when viewing lists and displaying data. Please ensure that you have a server with ample resources.

## 2. WordPress

- How many WordPress are needed?

**You need one WordPress for one license key.**

### **【Example 1】**

If you've purchased licenses for different backup periods (Three-Year and Whole-Period):

Each backup period's license comes with a distinct license key. If you have two license keys, for example, you'll need two WordPress.

### **【Example 2】**

If you're planning to set up several WordPress tailored to your backup data needs:

You'll need a separate license key for each WordPress.

(Using one license key for several WP isn't possible.)

\* Have many licenses?

If you purchase more than one license, they will be like, for example:

-----  
3 views x Three-Year  
License key  
Email address  
-----

-----  
10 views x Whole-Period  
License Key  
Email address  
-----

Each license key and license content are tied together.

When activating a license, make sure which license key you want to apply to which WordPress. It will be less confusing and easier to manage if you have organized the data to be downloaded, WordPress, license contents, and license key in advance.  
(Example)

Data to be downloaded	WordPress	License contents	License key Email address
Account "AAA" data Account "aaa" data	WordPress A	3 views * Three-Year	License key A Email address xxx
Views 1-3 in account "BBB"	WordPress B	10 views * Whole-Period	License Key B Email address xxx

- How many servers do I need?

**One server for one WordPress is recommended.**

GABQ connects with Google API to download data from UA.

The Google Analytics Reporting API we use has IP address restrictions (for communication).

▼ Google Analytics "Limits and Quotas on API Requests"

<https://developers.google.com/analytics/devguides/reporting/core/v4/limits-quotas?hl=en>

For maximum performance, it is recommended to use one WordPress and one server per license key.

You can install more than one WordPress by setting up several domains on one server, or by using subdomains or subdirectories, but if you install many WordPress and run GABQ, they will communicate with the API in parallel on one server. This will have a significant impact on performance, so we do not recommend it. Also, do not use a WordPress multi-site configuration.

### 3. Analytics Backup by QA (GABQ)

- License Key and License Content

To turn on the GABQ functionality, you will need a license.

A license consists of the following three components:

-----

License content

License key

Email address

-----  
These three components are tied together.

A combination of a license key and an email address is used for GABQ license authentication.

Once the license is activated, you will be able to back up data for the licensed amount (e.g., "10 views x 2 years").

#### - Unit of Backed Up UA Data

The data to be backed up will be in units of "view" of Google Analytics. (Refer to the Setup Guide for backup instructions.)

▼ Google Analytics Help Center "Hierarchy of organizations, accounts, users, properties, and views"

<https://support.google.com/analytics/answer/1009618?hl=en>

## 4. Google Cloud Project (Regarding API Integration)

### - What does "API Integration" mean?

GABQ communicates with Google API to download data from Google Analytics (Universal Analytics).

To use Google API, an app needs to be created at Google Cloud.

The app has a "client ID" and a "client secret" which will be the key.

GABQ uses the key to access the app, and the app allows GABQ to use Google API and to download data from Google Analytics (Universal Analytics).

### - How many Google Cloud projects should I create?

To use API integration, you need to prepare (create and register) a project (app) on Google Cloud Platform.

There is "one redirect URI" for one WordPress (GABQ).

Create a project for each WordPress (GABQ).

Although you can give multiple OAuth client IDs (redirector) to one project, we recommend you to use one project per WordPress to avoid limitation of Google API communication.

▼ Google Analytics Guides "Limits and Quotas on API Requests"

<https://developers.google.com/analytics/devguides/reporting/mcf/v3/limits-quotas>

\* Have many licenses?

Projects can be named.

You may want to distinguish it with an easy-to-understand name. For example, the project name is WP-GABQ-A because it connects to WordPress-A (GABQ).

> When to create a project?

To prepare a project (app), you need a "redirect URI" in GABQ. The redirect URI will be displayed on the backup settings screen after license authentication.

It is well in time to create a project when you do the API authentication in GABQ.

> Whose Google account will be used to create the project?

A person who has permission to access the Universal Analytics "views" is recommended to create a project.

\* Have many licenses?

You can create many projects with one Google account.

Prepare projects as many as the number of WordPress (GABQ) you need.

About the maximum number of Google Cloud Platform projects

Note that there is an allotted number of projects (maximum number of projects you can create). (That number may vary depending on your Google account.)

▼ Google Cloud "Quotas and usage limits"

<https://cloud.google.com/resource-manager/docs/limits?hl=en>

- Which Google account will be used to download data = API Integration?

When you authenticate Google API integration on GABQ, you will be asked for the Google account you want to integrate with.

The Google account must have permissions to access the "views" of Universal Analytics which you want to back up. The permission should be "viewer" or higher.

Only the account of the user who has Chrome open (logged into Chrome) will be the destination of choice.

So when you are at the step of Google API integration:

- The person with Google Analytics user permissions for the data to be downloaded,
- Using Chrome browser,
- Do: WordPress Login > GABQ > Backup Settings > API Integration.

▼ Google Analytics Help Center “Hierarchy of organizations, accounts, users, properties, and views“

<https://support.google.com/analytics/answer/1009618?hl=en>

▼ Google Analytics Help Center “Access and data-restriction management” (See a term of “Universal Analytics”)

<https://support.google.com/analytics/answer/9305587?hl=en>



## Step 2. Setting Up the Environment

### 1. Prepare a Server for Backup (WordPress Server)

The server where WordPress (GABQ) is installed is responsible for data downloading (communication), data processing (aggregation, molding, and display), and data storage. Ensure that you have a suitable environment.

#### - Backup Server Requirements

**Please set up a separate server from a published website server.**

To avoid problems caused by server overload during data acquisition and aggregation, we strongly recommend that you use a separate server. (\*)

#### Server Specs

- **1 CPU or more (recommended)**
- **Memory size: 4GB or more (recommended)**
- **PHP version: 7.4 or higher (required)**
  
- Recommended requirements for general rental servers
  - Should meet the above "server specs".  
For memory size estimation, also see the "memory\_limit value/number of URLs retrieved per day" table in the term of "[adjusting the server environment](#)" as a reference.
  - Easy to install WordPress.
  - Has storage space which is more than 100GB.
  - Able to change php.ini file settings (Required ...See Adjustment of server environment for details).
  - Easy to apply SSL (Let's Encrypt, etc. should be available).

## Requirements

- **PHP version 7.4 or higher**
- **SSD (Solid-State Drive)**

It must be able to store the number of files and amount of data required.  
▼ Use the "Data Migration Simulator" as a reference for size estimation.  
<https://ga-backup.com/en/#simulator>  
Since backup data will be stored as files, SSD is strongly recommended.
- **Domain (Subdomain is acceptable)**

You need a domain (or subdomain) of the server where you want to install WordPress.
- **SSL must be applied** to the domain (or subdomain).

To use Google API, SSL is required.
- WordPress installed  
**WordPress version: 5.9 or higher** (supported: 5.9-6.2)  
(Refer to the "WordPress Installation" section below for details.)
- **Permission for intercommunication with Google API servers**

Communication must be possible between "the server where WP (GABQ) is installed ⇔ Google API server" using a domain name (or subdomain name). (Communication in both directions is required.)

▼ Specific Purpose

  - UA data request/download
- **Permission for mutual communication with our license server**

Communication must be possible between "the server where WP (GABQ) is installed ⇔ our license server (mem.quarka.org)" using a domain name (or subdomain name). (Communication in both directions is required.)

▼ Specific Purpose

  - Operation of cron
    - \*Permission to access 'wp-cron.php' in particular is required.
  - License authentication, distribution of GABQ update files

▼ Note

If you apply basic authentication to a WordPress site with GABQ installed, communication will not be possible. Do not apply basic authentication.

- The settings described in the "Adjusting the server environment" section below must be configured.

*If you are using a dedicated hosting service with security and need the IP address of our license server to restrict access by a firewall, please contact support.*

## 2. Obtaining a Domain and Applying SSL

(1) Get a domain where you want to install WordPress.

- A domain is necessary for communication with Google API.
- Subdomain or subdirectory is acceptable.

(2) Apply SSL to the domain you have acquired (subdomain acceptable).

- SSL is required for Google API communication.
- Complete SSL application before GABQ license activation.

(If you change to an SSL-applied domain in the middle after starting to use GABQ, an error may occur in the license authentication and Google API integration.)

## 3. Install WordPress

- It is strongly recommended to use WordPress only for GABQ.  
We DO NOT recommend using GABQ on WordPress used for a published website.  
(It may increase the server load and cause problems.\*)
- One WordPress is required for one license key.
- Required WordPress version: 5.9 or higher (Supported 5.9-6.2)
- Please avoid automatic updates for "major updates" of WordPress to prevent unexpected errors.  
▼WordPress Documentation / Configuring Automatic Background Updates  
<https://wordpress.org/documentation/article/configuring-automatic-background-updates/>
- If you use WordPress exclusively for GABQ, you are encouraged not to publish your site externally.  
You may want to go to WP Admin > Settings > Reading Settings and check the "Discourage search engines from indexing this site"; and to remove posts and pages that are published by default.  
▼WordPress Documentation / Settings Reading Screen  
<https://wordpress.org/support/article/settings-reading-screen/>

- GABQ is a plugin, so it uses the WP admin screen. You do not need to prepare posts or pages.
- If you apply Basic Authentication to a WordPress site with GABQ installed, GABQ will not work because it cannot communicate with our license server. Do not apply Basic Authentication.

## 4. Adjusting the Server Environment

### - Saving Error Logs

Especially during the download of backed-up data, it's crucial to monitor the server status. To ensure that no errors are occurring on the server and to have a trace in case any errors do occur, it's recommended to configure the server to save error logs.

※ Please note that GABQ plugin cannot monitor the server status.

⇒ Related: [5. Checking Server Status After Backup Initiation](#)

### - Server's PHP Configuration

The server environment should be adjusted according to the amount of data to be backed up.

The setting values below are estimates. Adjust them according to your situation.

Configure the php.ini settings for the backup server. Review and adjust the settings for the following four parameters:

- `upload_max_filesize`
- `post_max_size`
- `max_execution_time`
- `memory_limit`

#### 1) Check the Default Settings

In the WordPress admin interface, there is a page to check the server's PHP configuration values.

Navigate to WordPress Dashboard > Tools > Site Health > [Info] tab > [Server]. Please check the following:

- Is the Upload max filesize (`upload_max_filesize`) set to 12M or more?
- Is the PHP post max size (`post_max_size`) set to 12M or more?

- Is the PHP time limit (max\_execution\_time) set to 240 or more?
- What is the PHP memory limit (memory\_limit) currently set to?

## 2) Configuration in php.ini

For any values identified as insufficient in step (1), configuration adjustments are necessary. Particularly, the memory\_limit setting significantly impacts operations such as backup acquisition. Please ensure the following points are reviewed and configured:

※ For instructions on configuring php.ini, refer to the manual or documentation of your server.

- **Set 'upload\_max\_filesize' to 12M or more**

Especially if you are using servers like AWS, the default value might be relatively low. Adjust the 'upload\_max\_filesize' to 12M or more in the php.ini settings. (12M is a minimum guideline; no change is necessary if it's already larger.)

- **Set 'post\_max\_size' to 12M or more**

Similar to 'upload\_max\_filesize,' for servers like AWS, adjust the 'post\_max\_size' to 12M or more in the php.ini settings. (12M is a minimum guideline; no change is necessary if it's already larger.)

- **Set 'max\_execution\_time' to 240 seconds or more**

Increase the 'max\_execution\_time' to 240 seconds or more in the php.ini settings. (240 seconds is a rough guide. Adjust according to your situation.)

- **Set 'memory\_limit' to "a stable and maximum value possible"**

In the php.ini settings, set 'memory\_limit' to "a stable and maximum value possible".

\*1,2,3

Memory is crucial not only for backup processes but also when viewing lists and displaying data. Memory allocation is highly important for using GABQ.

Please check the maximum value you can configure on your server. Set it to "a stable and maximum value possible" on your server.

If you are using a server with recommended memory (4GB or more), use the [TableA in the section titled "About Backup Mode"](#) as a reference and set it *with some margin*.

Important:

Memory significantly affects the amount of backup that can be acquired. Insufficient memory may prevent obtaining the intended amount of backup. Always refer to the documentation regarding "[Backup Mode](#)."

### **Considerations for 'memory\_limit' Configuration**

Generally, servers have predefined limits.

If you're unsure about the appropriate configuration value, be sure to confirm with your server provider.

#### **\*1 Available Notations and Configuration Values**

- Whether abbreviated byte notations (G / M, etc.) are applicable
- Treatment of "-1" ... While php.ini settings consider it as the maximum value, its actual configurability depends on the server. (⇒\*3 GABQ doesn't support this)
- Maximum Configuration Value

#### **\*2 Actual Available PHP Memory Limit**

- Even though you have configured the memory limit in php.ini, the actual memory limit that the server can provide may not meet the set value.
- If the actual available PHP memory is smaller than the configured value in php.ini, there is a higher likelihood of encountering memory errors, as this can prevent accurate determination of the correct backup mode.

#### **\*3 GABQ does NOT support "memory\_limit=-1"**

- If you set "memory\_limit" to "-1", GABQ will use the lowest backup mode, which corresponds to [ memory\_limit value: less than 256M / Number of URLs acquired per day: 0-1000 ].

## **About "Backup Mode"**

If your server has less than 4GB of memory, which is a recommended specification, GABQ will automatically operate in a "stable mode" that is designed to conserve server memory. This is because on servers with less memory, attempting to retrieve up to 30,000 URLs per day, as allowed by the Google API specifications, could result in memory errors.

The number of URLs retrieved in relation to PHP's memory\_limit value is outlined in Table A below.

(Table A)

memory_limit	Approximate number of URLs retrieved per day (*)
Less than 256M	0-1000
256M or more	1000-3000
512M or more	2000-5000
1000M or more	3200-8000
2000M or more	4000-10000
3500M or more	10000-30000

- This is an estimate when a server is used exclusively for GABQ.
- The values presented in the table are intended as approximations and should not be considered as absolute guarantees.

\*The "number of URLs retrieved per day" can be checked by looking at the number of URLs displayed in the "All Pages" report of Universal Analytics.

⇒ See [Step 1-1-\(2\) PHP Memory Capacity](#).

GABQ initiates backups by downloading data from pages with higher traffic. If the number of URLs retrieved by GABQ, based on PHP's memory\_limit value, is lower than the count of URLs reported in UA's 'All Pages' report, there might be pages with lower traffic that won't be included in the backup process. As a result, the overall number of backed-up pages could be reduced.

#### Notes Regarding Table A:

There is a range in the "Approximate number of URLs retrieved per day" due to variations in data size for individual URLs depending on the site (UA view). If you prioritize the certainty of backup acquisition, use the 'minimum value' in the "Approximate number of URLs retrieved per day" of the table as a reference and adjust the memory\_limit value accordingly.

Memory is used not only for backup processes but also when viewing lists and displaying data. Especially if you are using a typical shared hosting server, we strongly recommend setting the 'memory\_limit' value to the maximum value your server can handle (and remain stable) rather than just meeting the minimum line for the daily URL acquisition count. \*1,2,3

## 5. Checking Server Status After Backup Initiation

After starting the backup process for the target data, closely monitor the server for issues like timeouts or memory errors\*<sup>4</sup>. Keep an eye on the server's error logs and other relevant information.

⇒ If server errors occur, there is a possibility that the backup data might be incomplete. In such cases, we recommend redoing the backup process.

To prevent these errors, be sure to adjust your server environment before initiating the backup process.

\*<sup>4</sup> Typically, errors are recorded in the following format (numeric values may vary depending on the situation):

- Timeout Error:  
Fatal error: Maximum execution time of {60} seconds exceeded
- Memory Error:  
Fatal error: Allowed memory size of {134217728} bytes exhausted (tried to allocate {20480} bytes) in ... on line {1078}

## What Needed for Backup

- Google Analytics "Viewer" or higher permissions for the views to be downloaded from GA.
- "Analytics Backup by QA" zip file
  - Download the zip file "gabq.zip" from the GABQ site's download page\*.  
\*▼Software Download Page  
<https://ga-backup.com/en/gabqdownload/>  
The password for the page can be found in the email sent to you under the subject "[Analytics Backup by QA] Your License and Download Information."
- Security plugin (recommended)
  - Although not required for backup, installing a security plugin (such as SiteGuard or Wordfence) is recommended for security reasons, as this is a WordPress server.



## Other Requirements

- Supported Browsers
  - Google Chrome

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(\*) Analytics Backup by QA is not responsible for any problems (including problems that affected the website environment) caused by installing the software on the website server due to server load, etc.