HarePoint Analytics

For SharePoint

Maintenance Manual

HarePoint Analytics for SharePoint SE/2019/2016 product version: 16.13
HarePoint Analytics for SharePoint 2013 product version: 15.18

November 2022

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Table of Contents

Introduction

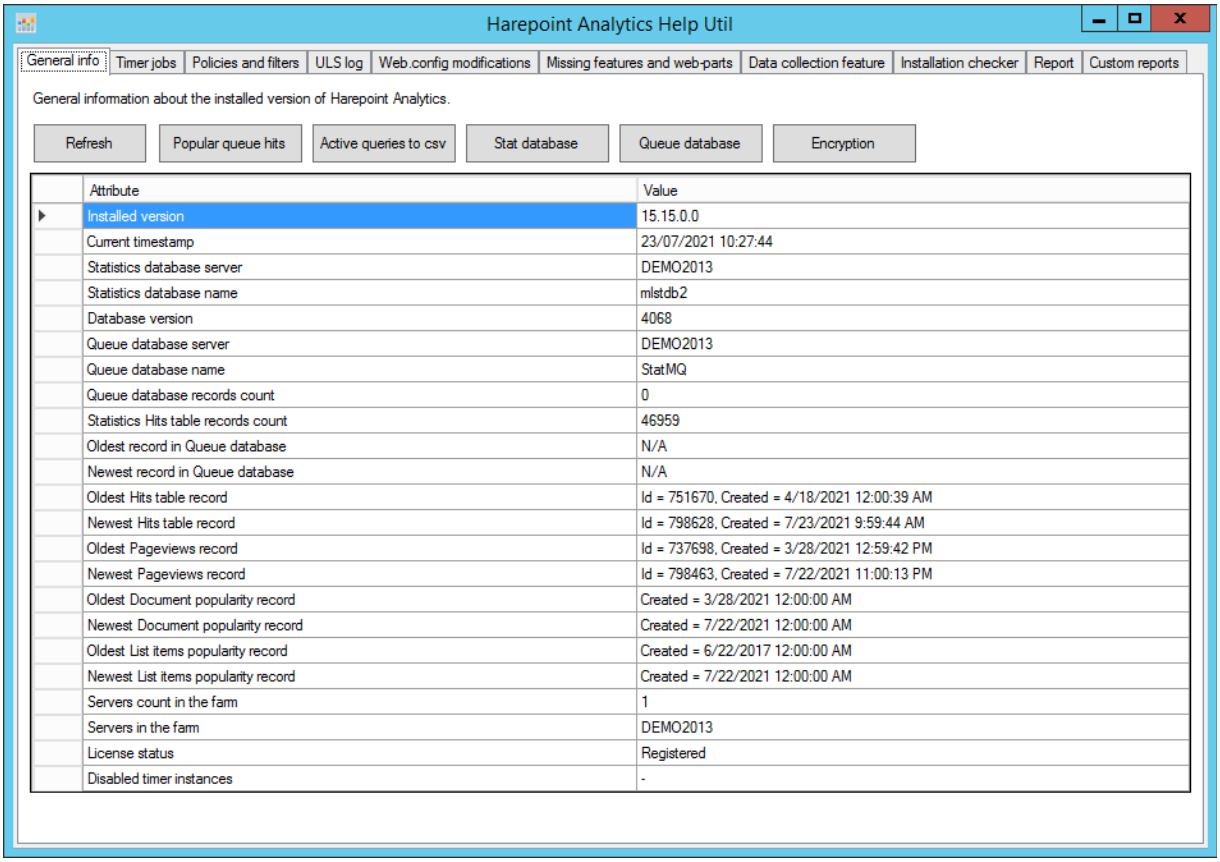
HarePoint Analytics for SharePoint is a solution designed for web analytics, document flow audit and retrieving administrative data about the usage of SharePoint-based intranet portals and web-sites.

This guide is intended for solution Administrators. It describes the functioning of the essential components of HarePoint Analytics, contains guidelines how to troubleshoot the Product, describes the Best Practices and provides useful advices regarding the Product configuration.

This guide is based on **SharePoint SE/2019/2016/2013**, but it is applicable for **SharePoint 2010** as well.

HarePoint Analytics Utility

In order to simplify maintenance and troubleshooting of HarePoint Analytics, we have developed a special Utility (**HarePointAnalyticsUtil.exe**).



You can find this Utility in the distributive package, in **Analytics Tools** and Analytics **Tools2013** folder, depending on your SharePoint edition:

SharePoint SE/2019/2016:
<path_to_distributive>\Analytics Tools
(<path_to_distributive>\Analytics Tools2016 in older distributives of HarePoint Analytics*)*

SharePoint 2013:
<path_to_distributive>\Analytics Tools2013

This Utility should be launched on **any WFE server** as Farm Administrator.

Please refer to the HarePoint Analytics Utility chapter for detailed information regarding the Utility.

Throughout this guide, examples will be given of how the Utility can be used to check necessary parameters or perform relevant tasks.

HarePoint Analytics Administrator Guide

This Maintenance Guide contains many references to **HarePoint Analytics Administrator Guide** that describes all technical aspects of HarePoint Analytics installation and setup in detail.

The HarePoint Analytics Administrator Guide is also available in the **Product distributive package** (along with the HarePoint Analytics Maintenance Guide and the HarePoint Analytics User Guide), or it can be downloaded from the HarePoint website:

https://www.harepoint.com/Products/HarePointAnalyticsForSharePoint/HarePoint_Analytics_Admin_Guide_EN.pdf

Data Collection and Processing

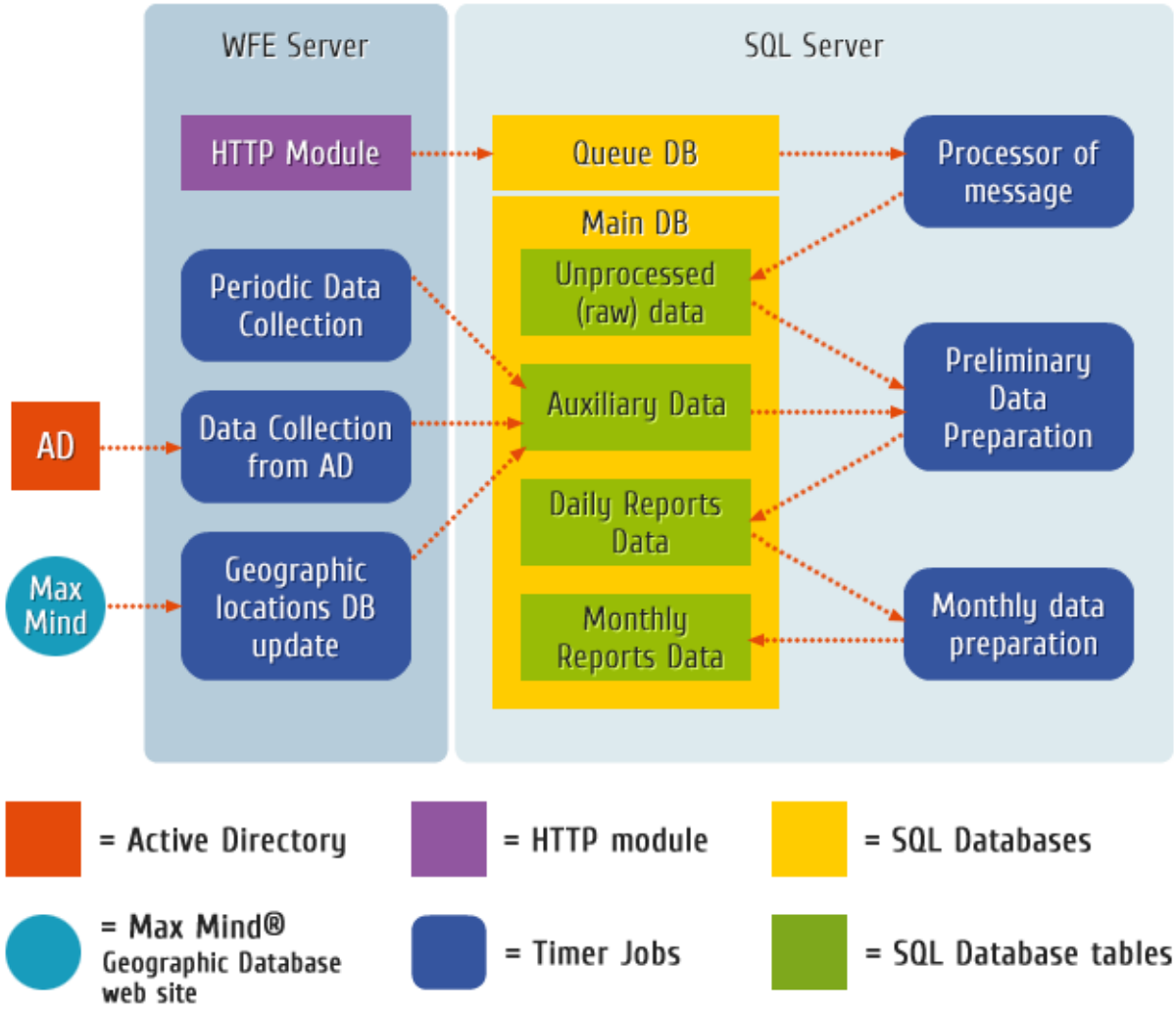
The key components of HarePoint Analytics architecture are:

1. **HTTP modules** installed on **each Web Front-End server**. They capture user activity and related parameters.
2. **Two databases on an SQL server**: a temporary Queue database, and the Main database.
3. **Timer jobs** that perform the collection of auxiliary data and data processing. The timer jobs execute on Web Front-End servers, however, some of them simply initiate the SQL procedures on the SQL server, which means they do not consume WFE server resources.

Data Collection and Processing Diagram

The logical structure of data collection and processing in HarePoint Analytics can be represented as follows:

(some components are not displayed, see below for more details)



Description of the components

HTTP Module

This module is added automatically to **each WFE server** during product deployment. Any user activity on SharePoint sites is captured by the HTTP module and delivered to a Queue Database. Owing to this method of data collection, no client-side JavaScripts, out-of-the-box SharePoint Web Analytics, or IIS logs are required to collect data, providing substantial advantages.

However, **special JavaScript** (not displayed on the diagram) **can be used in addition** to this HTTP module to collect data that cannot be collected by the HTTP module for technical reasons, such as activity within custom web-parts, custom actions, and tracking links that lead outside of SharePoint. (Implementation of this JavaScript is fully described in the **HarePoint Analytics Administrator Guide - Adding tracker for Java Script events**).

It is important to have the HTTP module **installed on each WFE server**, since normally all WFE servers participate in **load balancing**, thus any of the WFE servers may be used to provide content to the end

user. If some WFE servers don't have the HTTP Module installed, this will likely result in some activity not being tracked.

HTTP Module has **negligible performance impact** on WFE servers. In case the HTTP Module fails for any reason, it will never make the web site inaccessible; error messages will be logged in the SharePoint ULS log, nothing more.

The HTTP module is **not installed** on Application Servers in SharePoint.

The **Data collection filters** (described in detail in the Data collection filters chapter) can be set up in HarePoint Analytics to filter out unwanted data at the stage of data collection. Some of these filters are applied by HTTP Module, so that information is not delivered to Queue Database.

SQL Databases

HarePoint Analytics uses two databases on an SQL server: **Queue Database** and **Main Database**.

1. Queue Database

The Queue Database is used to store the information obtained from the HTTP Module temporarily. By default, every 5 minutes data from the Queue Database that **satisfy the Data collection filters** (described in detail in Data collection filters) are moved to the Main Database by the **Processor of message queue** timer job.

This database has only one table.

2. Main Database

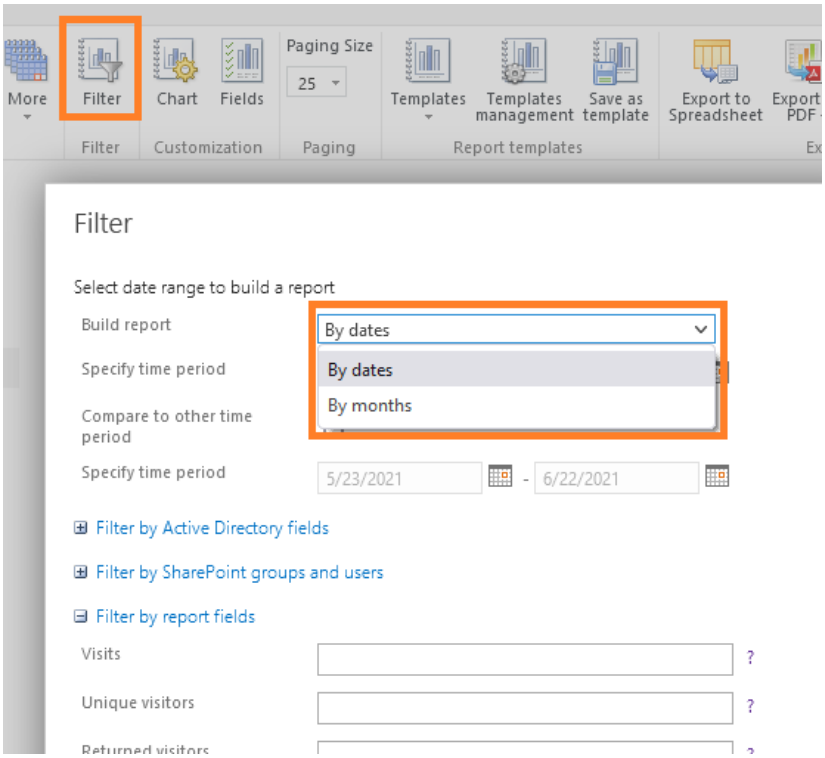
The Main Database is used to store the following data:

a. **Unprocessed (raw) data** –data transferred from the Queue Database
b. **Auxiliary information** – information about document libraries and lists, geographical IP addresses database, information about users from AD, and so on.
c. **Processed data for daily reports** –data used to build the daily reports
d. **Processed data for monthly reports** – data used to build the monthly reports

The Main database has many tables that are linked to each other in a complex way.

The data for both daily and monthly reports are stored in this database, which means that **nothing is processed on the fly as you browse the reports**: all necessary information has already been processed in advance. This ensures there is no load on the SQL server and SharePoint servers when viewing reports.
Additionally, because of this approach, HarePoint Analytics is **not a real-time reporting tool**; like the out-of-the-box analytics tools in SharePoint, the data in the reports are **from the previous day**.

You can **switch between Daily and Monthly reports** using the **Filter** button on the ribbon, when viewing reports:

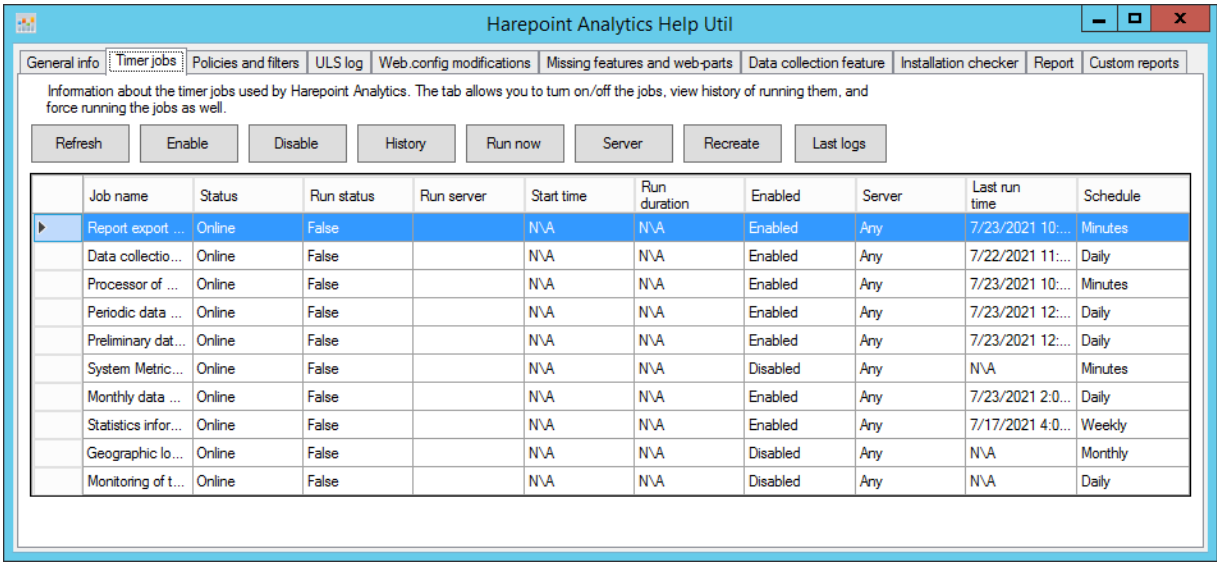


In order to prevent the significant growth in the **size of the Main Database** as time goes by and HarePoint Analytics stores more and more data, the **outdated detailed (daily) data** and **outdated raw (unprocessed) data** are **removed from the database automatically** by the **Statistics Information Cleaner** timer job (refer to the Data retention period chapter for more details). The **Monthly data** are never removed from the database.

Timer jobs

As can be seen from the Data Collection and Processing Diagram, **the collected data are processed by a succession of timer jobs** in order to have all the reports filled with information. Each timer job has an individual schedule and different execution time, so the proper configuration of timer jobs and their schedules is very important in HarePoint Analytics. In most cases, no data in reports indicates inconsistencies in the execution of the timer jobs.

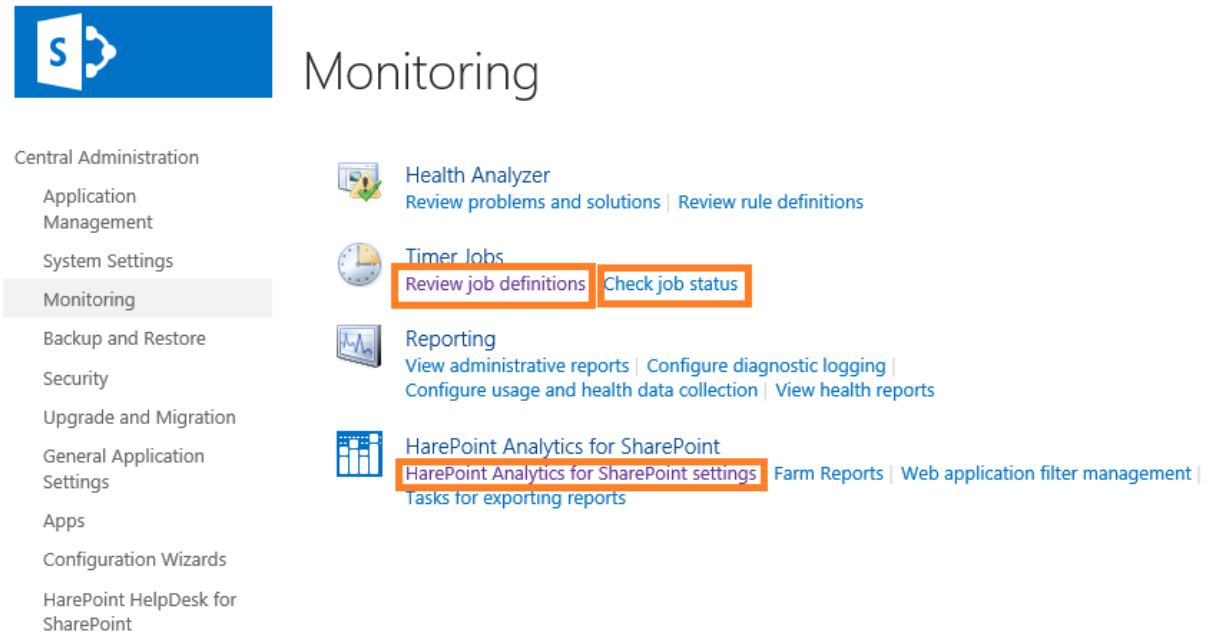
An especially convenient way to monitor and manage HarePoint Analytics timer jobs is available using the **HarePoint Analytics Utility** - **Timer jobs** tab:



Normally, HarePoint Analytics timer jobs should be managed from **HarePoint Analytics Settings**: **Central Administration – Monitoring - Settings of HarePoint Analytics for SharePoint.**

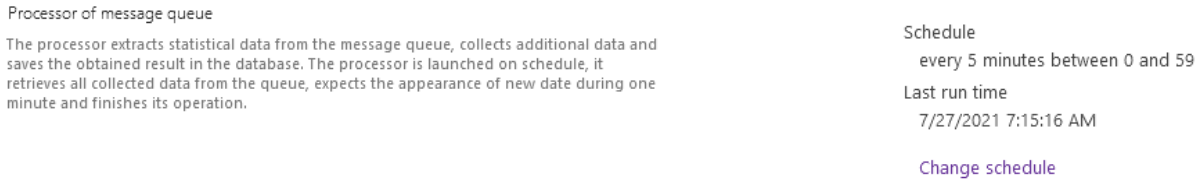
They can also be managed from SharePoint directly, in **Job Definitions**:
Central Administration – Monitoring – Job Definitions
Note: Timer jobs here are **named differently** (see below for details). Only basic configuration options available.

The **current status** of timer jobs can be monitored in **Check job status**:
Central Administration – Monitoring – Check job status

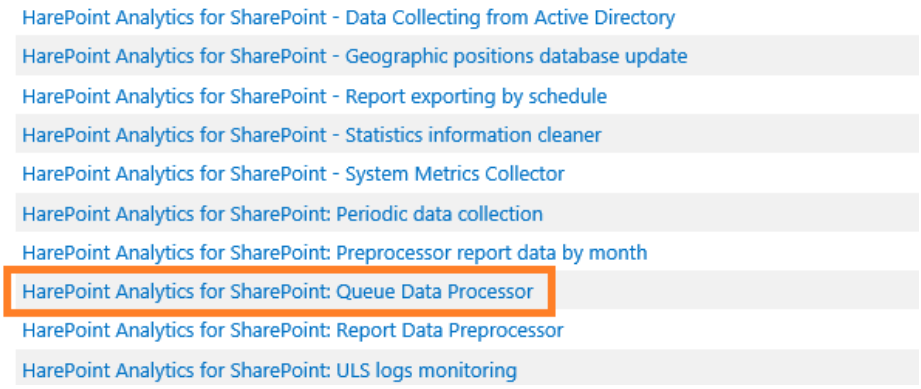


1. Processor of Message Queue

In HarePoint Analytics Settings:



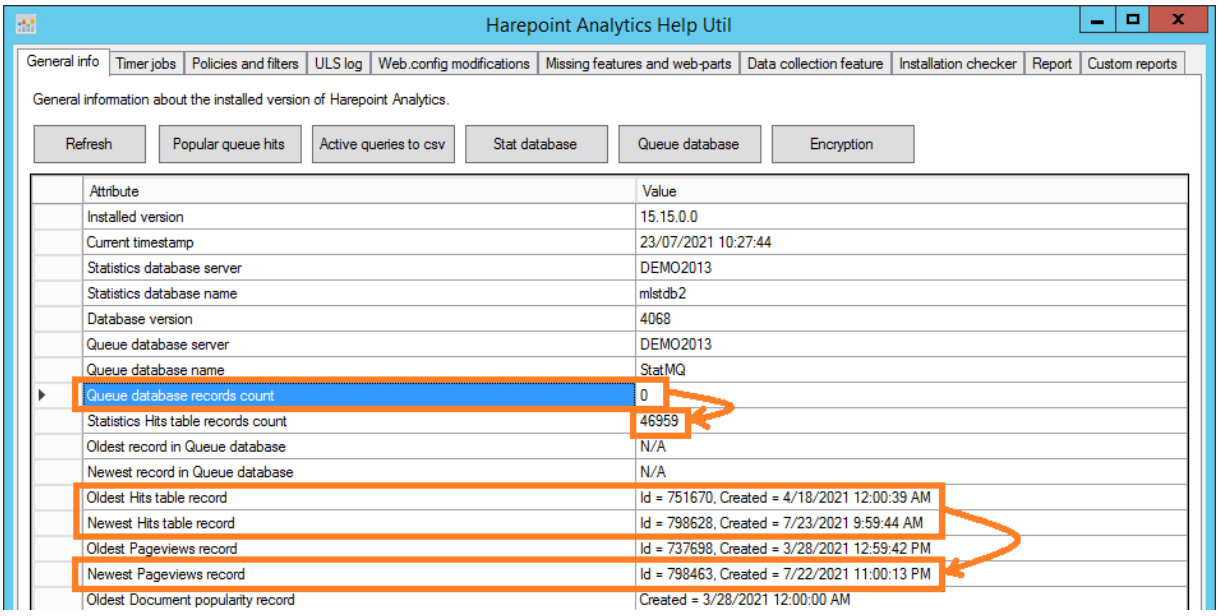
In SharePoint Job Definitions (named **HarePoint Analytics for SharePoint: Queue Data Processor**):



Description

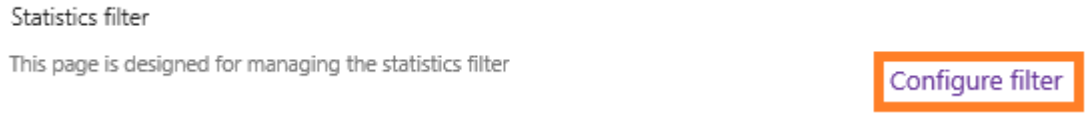
This timer job moves the data from the Queue Database to the Main Database (as unprocessed (raw) data tables, in particular to *dbo.Hits*).

This process can be seen in the **HarePoint Analytics Utility** - **General Info** tab, as follows:



Some **Data collection filters** are applied at this stage, so only the data that **satisfy** the data collection filters are transferred to the main database.

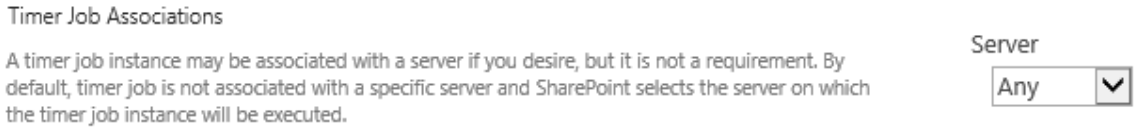
Data collection filters are managed in HarePoint Analytics Settings:
Central Administration – Monitoring – HarePoint Analytics Settings – Statistics filter



Guidance for using the Data Collection filters are described in Data collection filters section.

Execution

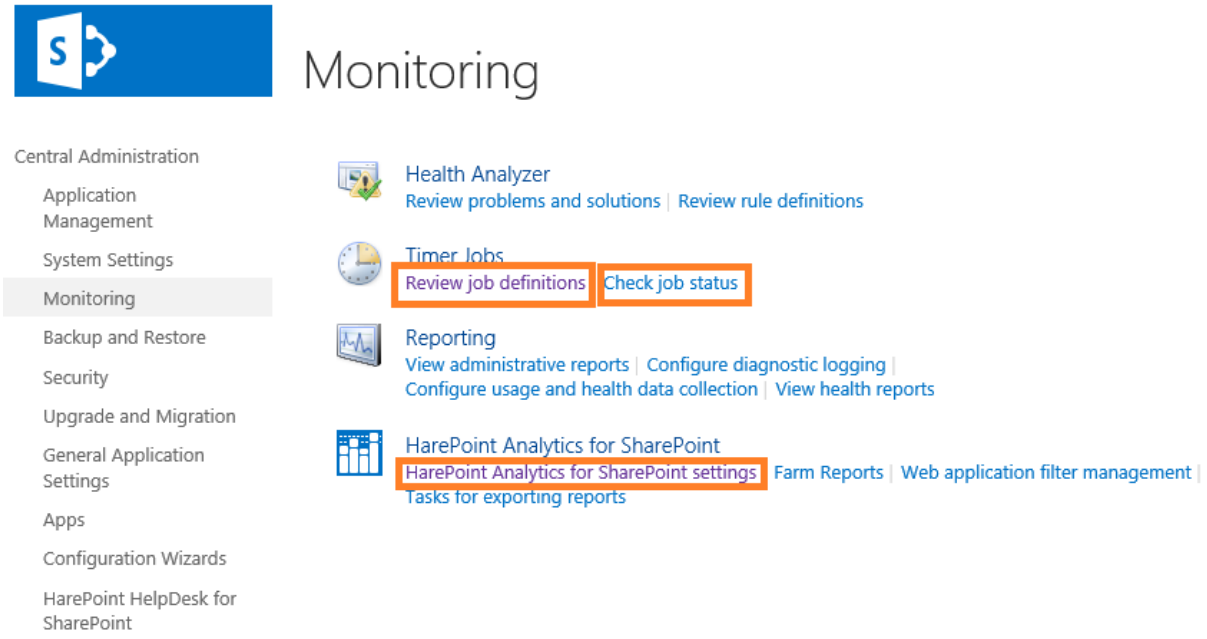
This timer job actually initiates procedures stored **on the SQL server**, so there is no load to SharePoint servers.
There is an option to change the **timer job association** in HarePoint Analytics Settings and explicitly specify the WFE server where this job should run, however, this doesn't make sense for this timer job. "**Any"** is the recommended setting.



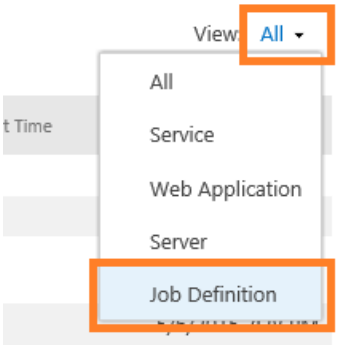
The **SQL server load** caused by this job is reasonably low and does not last long.

Tracking the Status

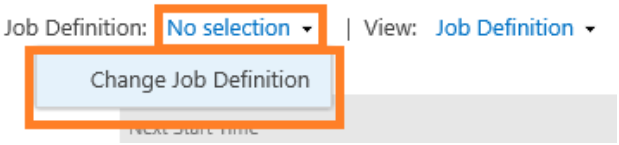
Normally, the Processor of Message Queue job completes quickly (seconds to minutes).
You can **track the status** from SharePoint **Check job status** section:



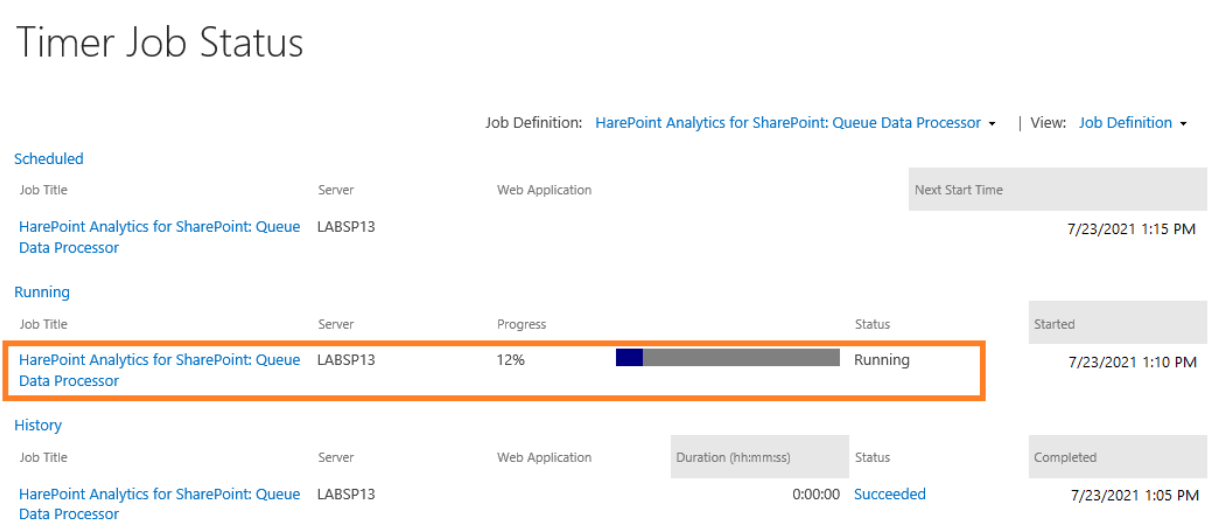
In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection** and choose **Change Job Definition**:



In the new window, scroll down until you can see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint: Queue Data Processor:**



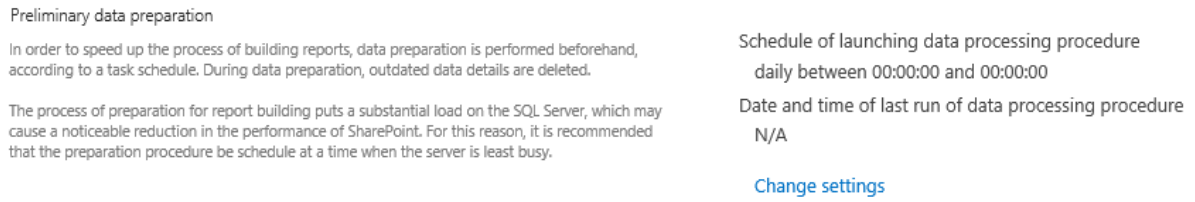
Recommended schedule

Every 5-10 minutes. This is suitable for all cases, whether you have tiny or huge number of hits per minute on the monitored site collections.

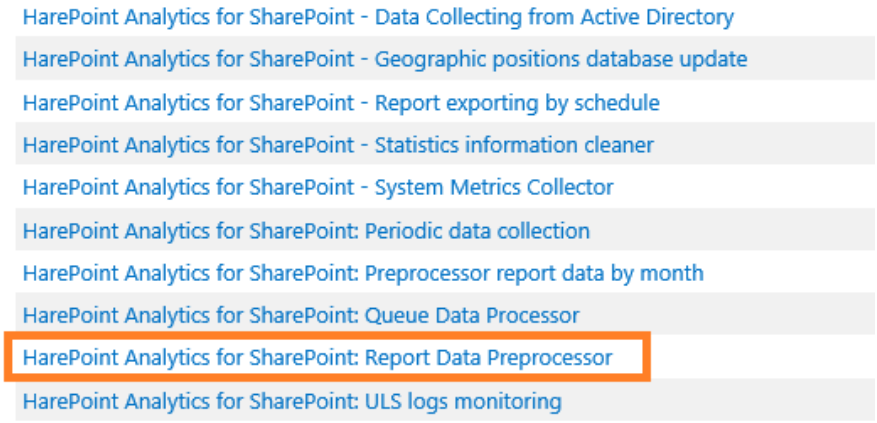
Important note: this timer job should always be enabled! Disabling it doesn't actually stop data collection by HarePoint Analytics: instead, all collected data will be stacked in Queue Database, and its size can grow significantly!

2. *Preliminary Data Preparation*

In HarePoint Analytics Settings:



In SharePoint Jobs definitions (named **HarePoint Analytics for SharePoint: Report Data Preprocessor**):



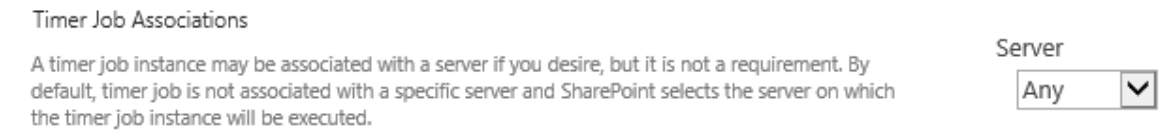
Description

Preliminary Data Preparation is a **key timer job** in HarePoint Analytics that processes the combination of the unprocessed (raw) data and auxiliary data (all within the Main Database) to prepare **all the information for the Daily reports**. If this timer job **fails to complete successfully, or is disabled**, **no new data will appear in the reports**.

Execution

This timer job actually initiates multiple stored procedures **on the SQL server**, so there is no load to SharePoint servers.

Even though there seems to be the option to change the **timer job association** in HarePoint Analytics Settings and explicitly specify the WFE server where this job should run, this option doesn't make sense for this timer job. "**Any"** is the recommended setting.



Generally speaking, this is **the most resource-heavy timer job** from HarePoint Analytics jobs, in terms of **SQL server load**, since it processes a **huge amount of data**, and passes through **multiple SQL**

procedures, each performing different calculations for different reports. The load and execution duration depend on the **amount of data** to be processed, and on the **performance of the SQL server**:

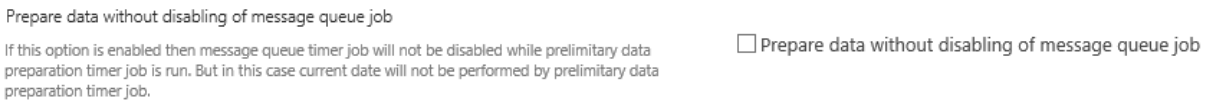
- refer to the Data collection filters section for more information on how to **optimize data collection**, so you don't waste time and resources processing data that will never be requested in reports.
- Refer to the **HarePoint Analytics Administrator Guide** for more technical details on the recommended **configuration of the SQL Server**.

Typically, processing thousands of hits can take minutes, and processing millions of hits can take up to several hours.

Note: Please keep in mind the facts mentioned above when you intend to run this job manually (**"Run now"** option) in order to force data processing so that data appears in the reports earlier. It is not recommended to perform this action during working hours in a production environment.

Optimization

Preliminary Data Preparation timer job may pause the **Processor of Message Queue** job in order to optimize SQL server load and to ensure that the SQL procedures of both timer jobs do not interfere with each other.
The later versions of HarePoint Analytics have an additional setting - **Prepare data without disabling of message queue job**:



When enabled, both timer jobs can work in parallel.
We recommend using this option when from some reason there is a large amount of data has been collected in the **Queue Database**.

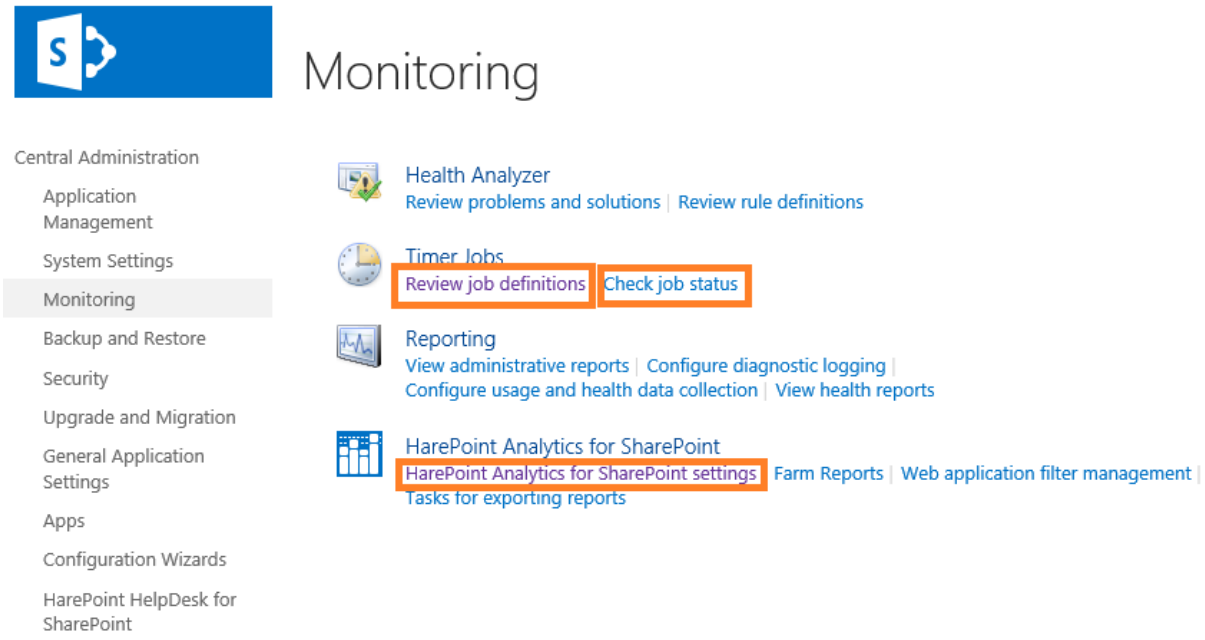
Disadvantages of enabling this option are:

- Data in reports will be **delayed by 2 days** instead of 1 day in normal mode: these data are stored in the database but not processed for optimization purposes.
- Potentially higher SQL server load since two jobs are running simultaneously.

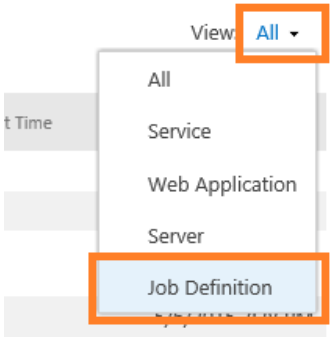
Be sure to disable this option as soon as backlog data from Message Queue Database have been processed.

Tracking the Status

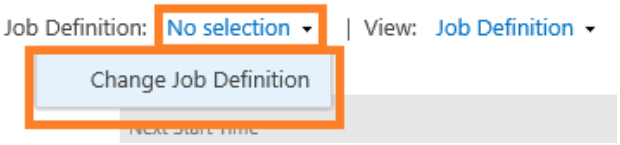
You can **track the status** from the SharePoint **Check job status** section:



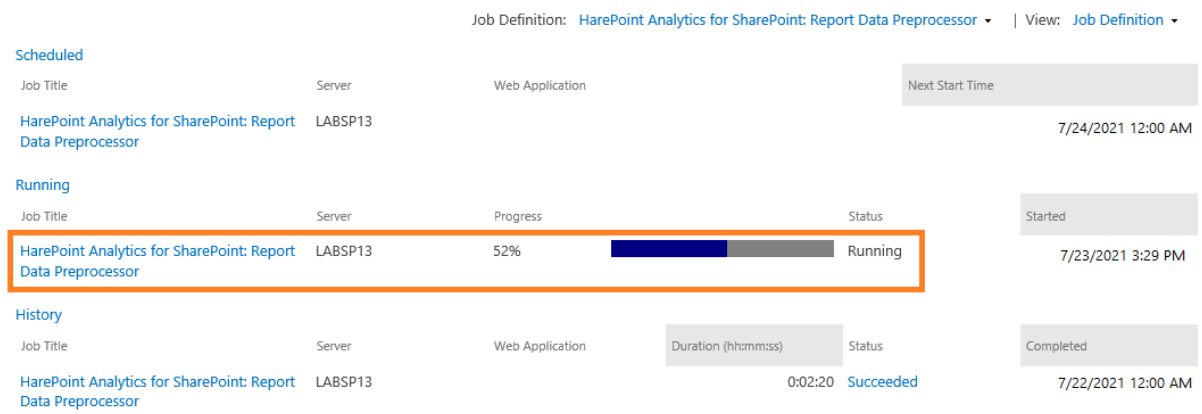
In the top right corner, click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, **scroll down** until you can see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint: Report Data Preprocessor:**



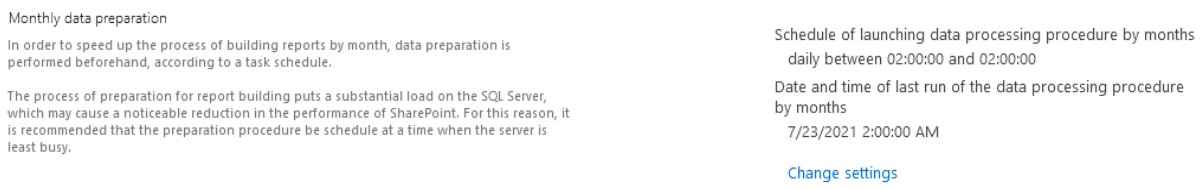
Important note: The progress bar actually displays **only an estimation** of the timer job's progress. It **jumps from one fixed value to another** as the next SQL procedure starts.
If it stays on the same value for quite a long time, that is not necessarily an indication of the slow speed of the overall process. It can go through following stages quickly.

Recommended schedule

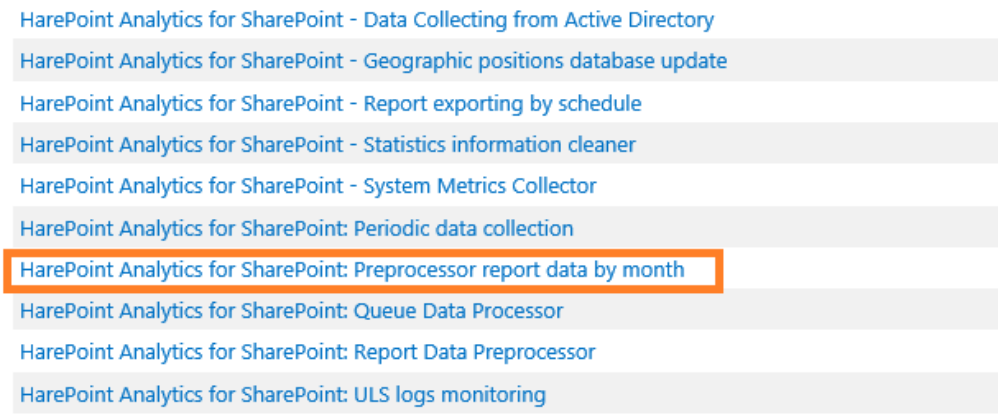
Once per day during non-working hours. By default, this job starts around 12am every day.
Every time this timer job successfully completes, a new portion of data becomes available in the reports.

3. Monthly Data Preparation

In HarePoint Analytics Settings:



In SharePoint Jobs Definitions (named **HarePoint Analytics for SharePoint: Preprocessor report data by month**):



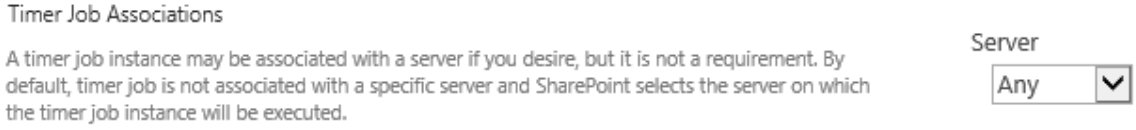
Description

The Monthly Data Preparation timer job prepares the data for **Monthly reports based on the data from Daily reports**, which in turn are prepared by the **Preliminary Data Preparation** timer job. If for some reason the daily data for the required date range are not available in the HarePoint Analytics Main Database, the monthly reports will be empty as well.

Execution

This timer job actually initiates multiple stored procedures **on the SQL server**, so there is no load on SharePoint servers.

There is an option to change the **timer job association** in HarePoint Analytics Settings and explicitly specify the WFE server where this job should run, however, this doesn't make sense for this timer job. "**Any"** is the recommended setting.



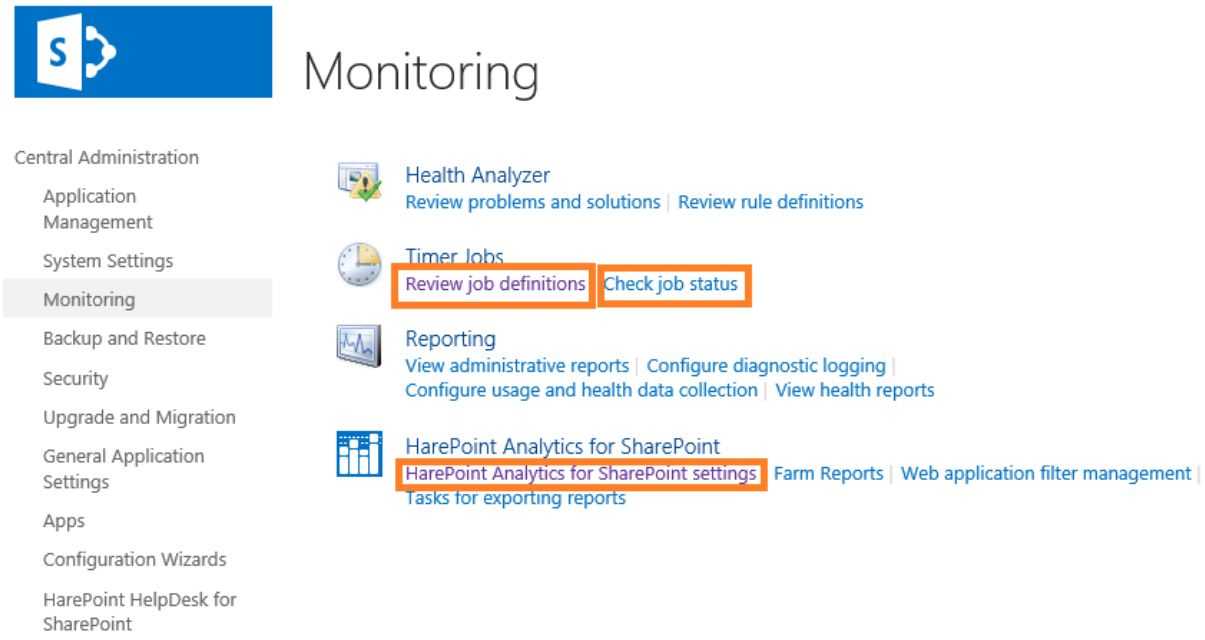
The **SQL Server** load and execution duration depend on the amount of data to be processed. Typically, execution can take **from minutes to several hours**.

Note: This timer job is scheduled to run every day by default (see below). It, however, actually processes data only on one day in a month. On other days, it just starts and completes immediately. It is designed this way for optimization purposes, since there is no reason to process the same monthly data every day again and again.

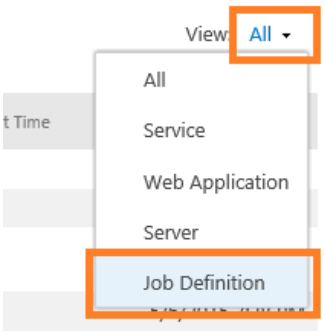
Note: This timer job consumes resources of the SQL server. Please keep this in mind when you intend to run this job manually (**"Run now"** option) to force data processing (to get the most recent data collected into the reports immediately). It is not recommended to do this during the working hours.

Tracking the Status

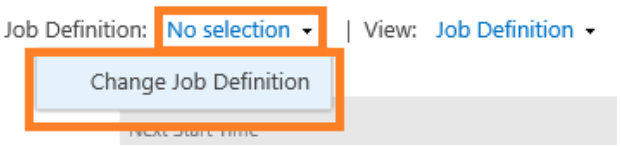
You can track the status of the Monthly Data Preparation job from the SharePoint **Check job status** section:



In the top right corner, click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you can see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint: Preprocessor report data by month.**

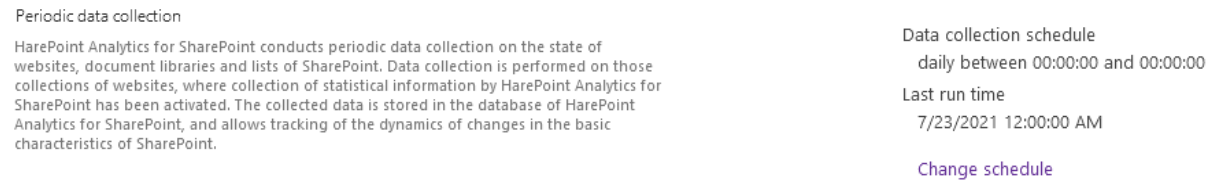
Recommended schedule

Once per day during non-working hours. By default, this job starts around 2am every day to be sure it will not be running in parallel with the resource intensive Preliminary Data Preparation job which starts at 12am by default. If necessary, you can adjust Monthly Data Preparation job to start at later time, if you notice that Preliminary Data Preparation takes longer than 2 hours to complete.

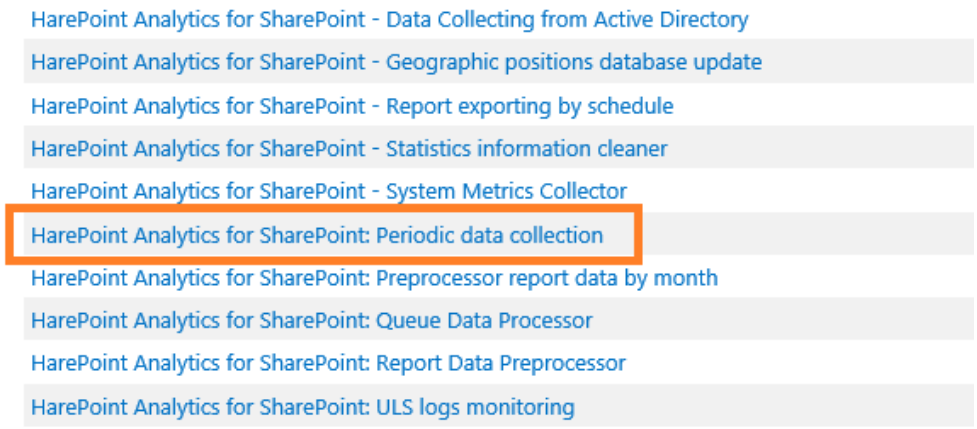
Every time this timer job successfully completes, a new portion of data becomes available in the reports for **by Month** mode.

4. Periodic Data Collection

In HarePoint Analytics Settings:



In SharePoint Jobs Definitions (named **HarePoint Analytics for SharePoint: Periodic data collection**):



Description

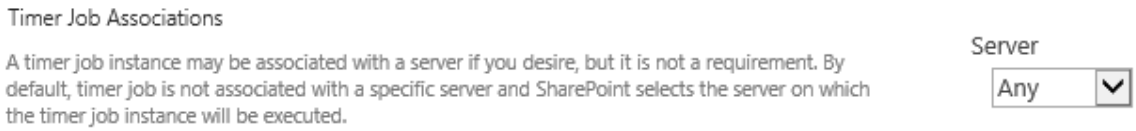
The Periodic Data Collection timer job collects **additional information** from SharePoint, such as the status and parameters of websites, lists, and document libraries. In most cases, it is sufficient to collect this information only once a week.

Note: This job **does not** collect data about the document usage or webpage clicks.

Execution

This timer job retrieves the required information mostly by interacting with the SharePoint Object Model. This process consumes some resources of the **WFE server** that it runs on, but normally this load is reasonably low.

By default, SharePoint automatically selects the WFE server to run this job, but you can **specify the preferred WFE server** explicitly in HarePoint Analytics Settings:



The SQL server utilization by this timer job is negligibly low.

Optimization

In later versions of HarePoint Analytics, there is an optimization option available for Periodic Data Collection timer job.

By default, the timer jobs re-collects its entire dataset every time it runs (**full data collection**). This process is very efficient, so in most cases, it takes reasonable time to complete.

However, on very large farms, with huge document libraries and lists it might be running for too long every time. For optimization purposes, you can enable **incremental data collection**, so that the job collects only the changed data on every run.

This can be done by running the following command from SharePoint Management Shell:

(Note: in SharePoint SE **stsadm** is no longer available, so you can use the HarePoint Utility command line **HarePointAnalyticsUtil.exe set-policy**, see Set policies for more details)

stsadm -o mlstsetpolicy -incrementalcrawler true

Furthermore, you can increase the **number of threads** used by this timer jobs (default is 1):

stsadm -o mlstsetpolicy -crawlerthreadcount <thread_count**>**

For example, setting it to 4-8 threads may further increase the processing speed.

To disable the incremental data collection and revert to original settings, use the following commands:

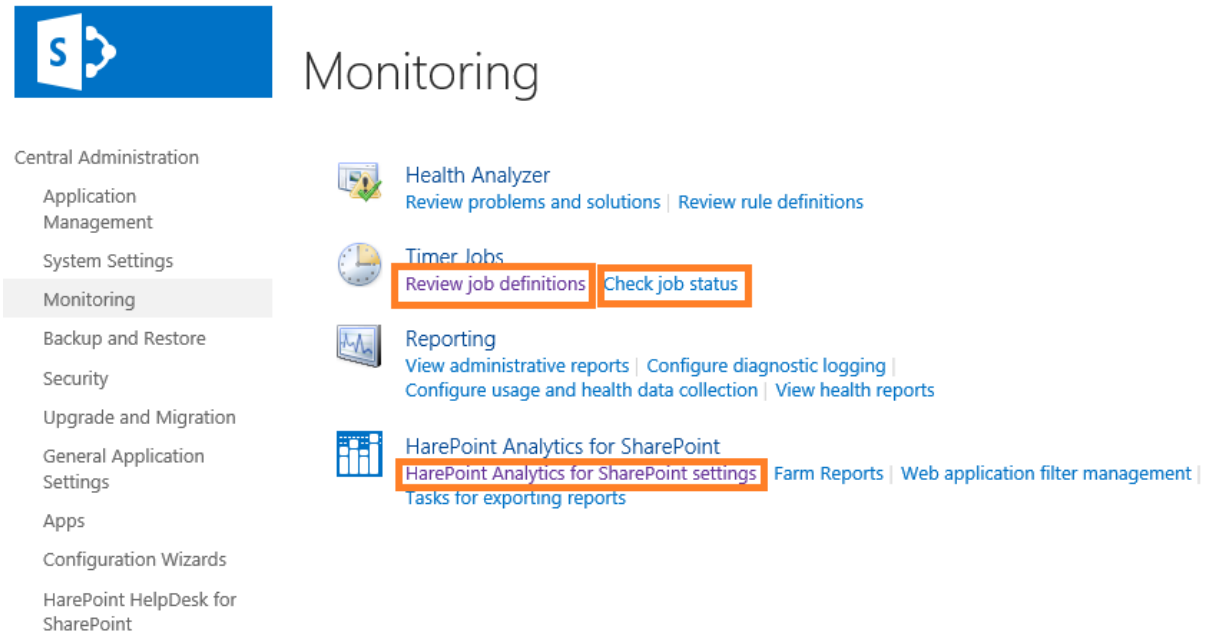
stsadm -o mlstsetpolicy -incrementalcrawler false
stsadm -o mlstsetpolicy -crawlerthreadcount 1

To review the current settings, use the following command (for more details on policies in HarePoint Analytics, refer to **Administrator Guide – Managing global policies** paragraph):

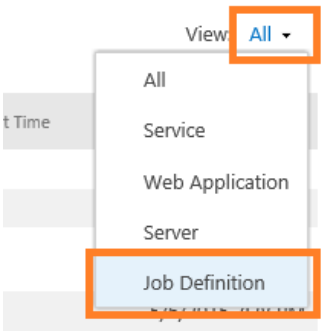
stsadm -o mlstdisplaypolicies | find /I `"crawler`"

Tracking the Status

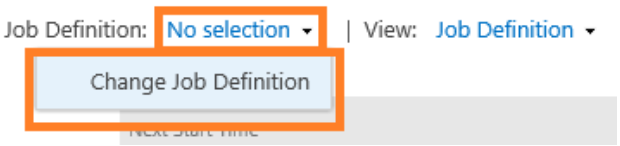
You can track the status of the Periodic Data Collection job from the SharePoint **Check job status** section:



In the top right corner, click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint: Periodic data collection.**

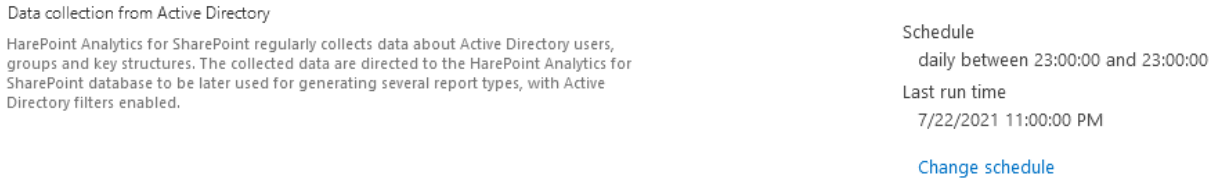
Recommended Schedule

Once per day during off-hours.

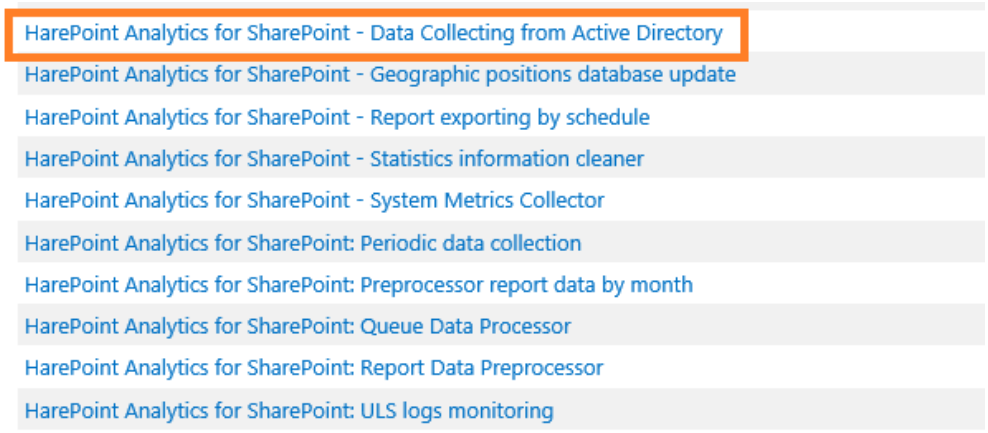
In cases with a **large number of web-sites** (10000 or more), this job may take quite a long time to complete, so the schedule may be changed to **once per week during off-hours**.

5. Data Collection from Active Directory

In HarePoint Analytics Settings:



In SharePoint Jobs Definitions (named **HarePoint Analytics for SharePoint – Data Collecting from Active Directory**):



Description

The Data Collection from Active Directory timer job collects **additional information** about Active Directory users and groups, as well as some other key parameters from AD. In many cases, it is sufficient to collect this information only once a week.

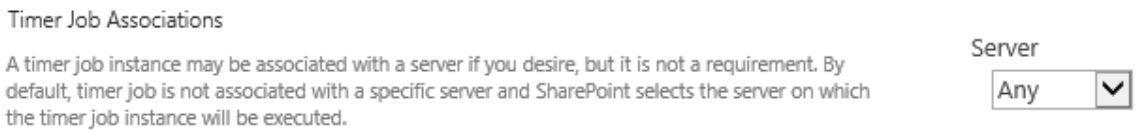
Note: No data about user activity on SharePoint sites is collected by this job.

In HarePoint Analytics Settings, you would need to specify the **account** that should be used to connect to AD, as well as the domain controller's **Fully Qualified Domain Name (FQDN)** to connect to, in case the default settings are not suitable.

Execution

The Data Collection from Active Directory timer job interacts with Domain Controllers in order to receive the required information from AD. This job consumes some resources of the **Domain Controllers** and of the **WFE server** that it runs on.

By default, SharePoint automatically selects the WFE server to run this job, but you can **specify the preferred WFE server** explicitly in HarePoint Analytics Settings:



The SQL server utilization by this timer job is negligibly low.

Optimization

If it takes too long for the timer job to complete due to large number of AD groups, and if you are not going to filter your reports by AD groups, then you can optimize the process. Since version 16.13/15.18 of HarePoint Analytics, you can reduce the execution time for this timer job by disabling data collection on AD groups.

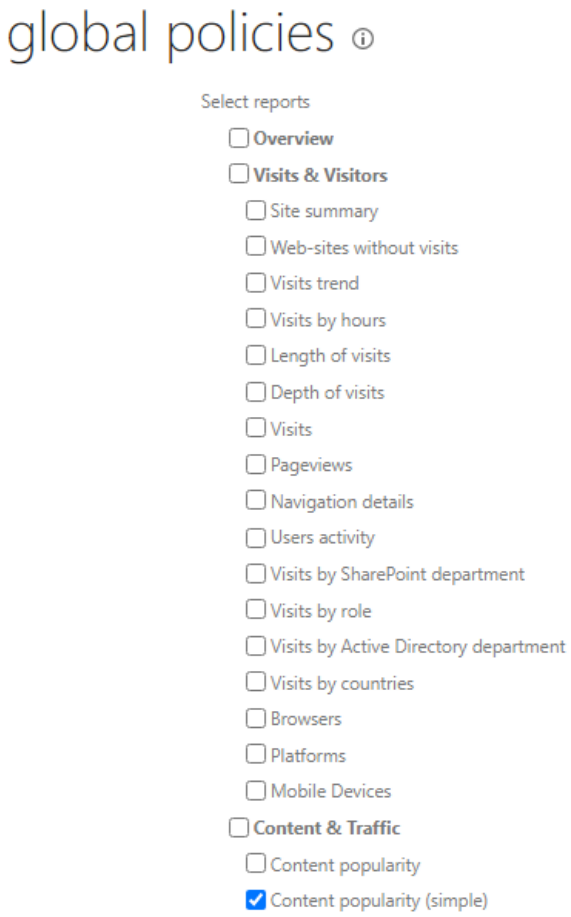
This can be done by running the following command from SharePoint Management Shell:
(Note: in SharePoint SE **stsadm** is no longer available, so you can use the HarePoint Utility command line **HarePointAnalyticsUtil.exe set-policy**, see Set policies for more details)

stsadm -o mlstsetpolicy -collectADGroups false

Note: you won't be able to filter reports by AD groups when this policy is set to **false**.

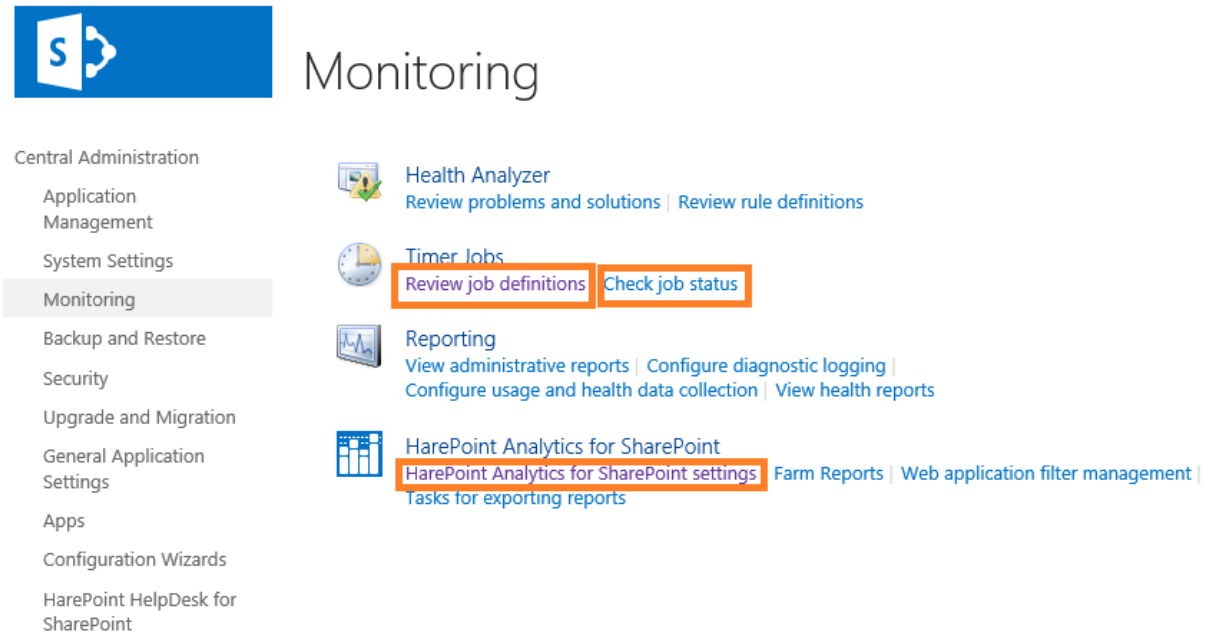
In addition, if Content Popularity report is slow due to large number of AD groups, you can use the lightweight version of this report – **Content Popularity (Simple)**. By default, this report is not visible in the list of reports, and needs to be enabled in **Central Administration – Monitoring – HarePoint**

Analytics settings – Statistics policies (uncheck the checkbox to make the report visible):

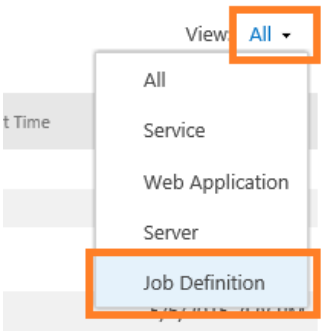


Tracking the Status

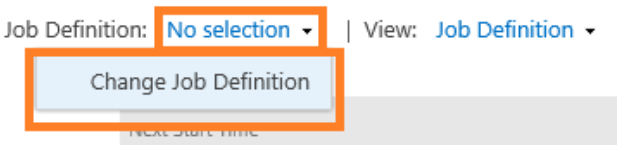
You can track the status of the Data Collection from Active Directory job from SharePoint **Check job status** section:



In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you can see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint – Data Collecting from Active Directory.**

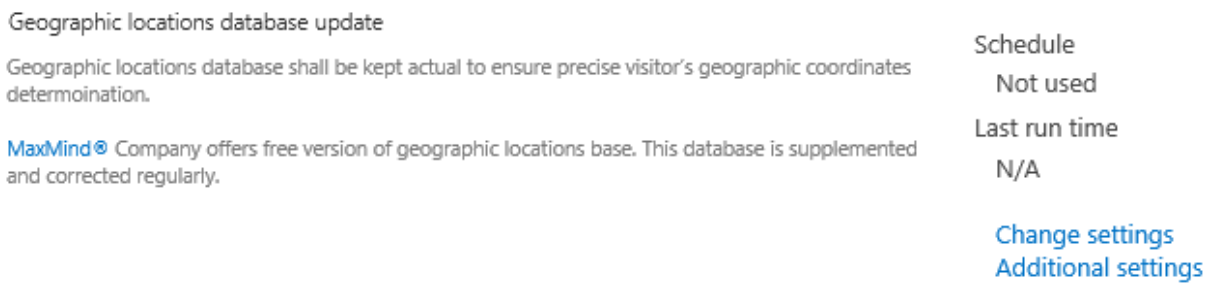
Recommended Schedule

Once per day during off-hours.

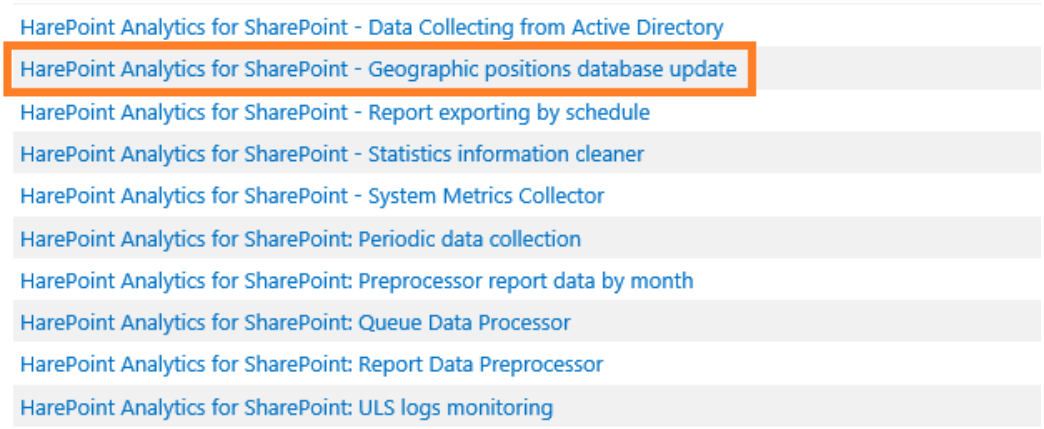
In case you have a **complex domain structure (multiple domains, forests, trusts)**, such that it takes quite a long time for this timer job to complete, the schedule can be changed to **once per week during off-hours**.

6. *Geographic locations database update*

In HarePoint Analytics Settings:



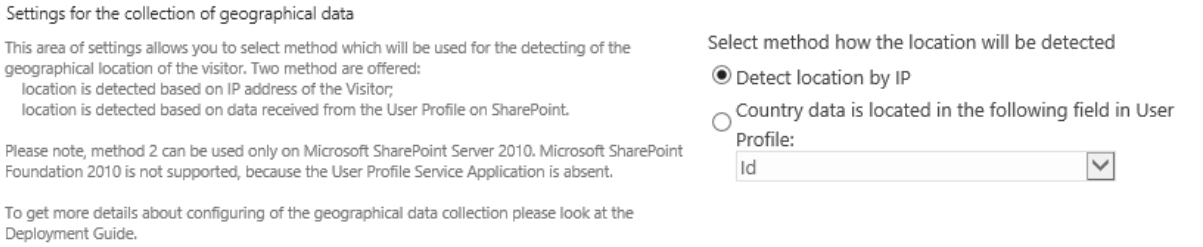
In SharePoint Job Definitions (named **HarePoint Analytics for SharePoint - Geographic positions database update**):



Description

The Geographic locations database update timer job is used to update the database of **geographical locations vs external IP addresses**, as well as some additional related information. This information is used in particular in the **Visits by Country** report. The data are provided by MaxMind® on a freeware basis.

Important note: It is necessary to have this database downloaded **at least once** in order to have data displayed in the **Visits by Countries** report.
Moreover, this is applicable for **both options:** when you have **Detect location by IP,** or **Country data is located in the following field in User Profile** selected in the **Advanced Settings** for this timer job:

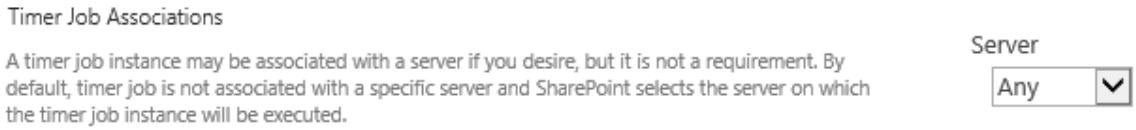


Please refer to [HarePoint Analytics Administrator Guide] – **Initial Settings - Setting the Geographic locations database update** for more details on the settings of this timer job.

Execution

This timer job connects to the **MaxMind®** website to retrieve the updated geographical locations database. This information is stored in one of the auxiliary tables of the HarePoint Analytics Main Database.

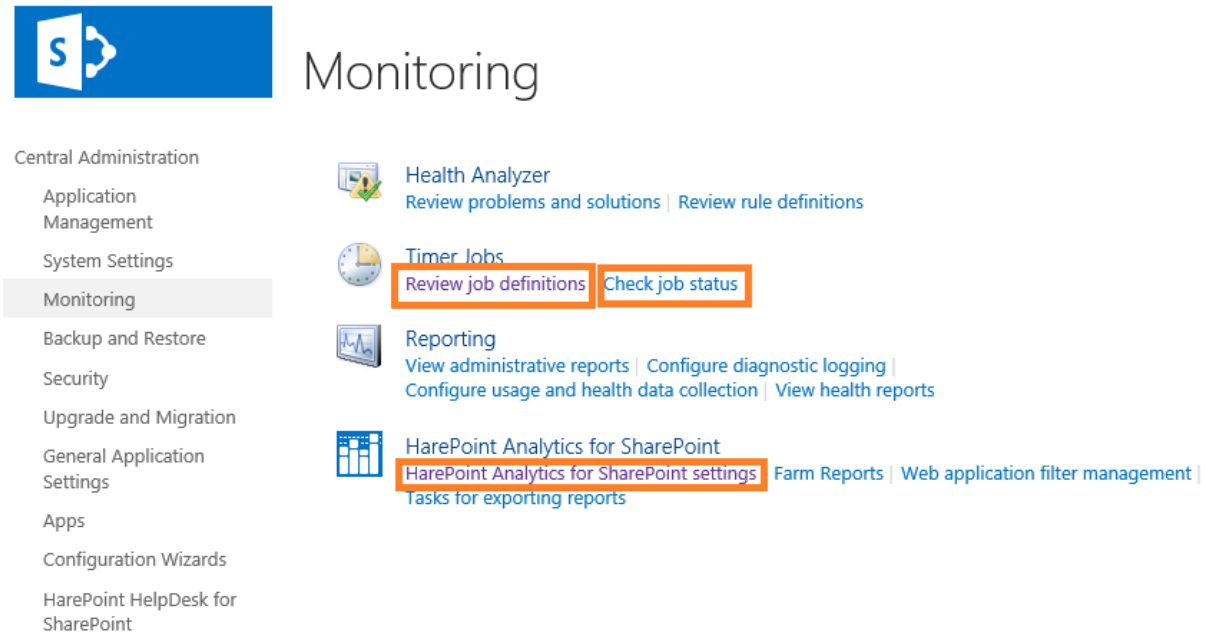
By default, SharePoint automatically selects the WFE server to run this job, but you can **specify the preferred WFE server** explicitly in HarePoint Analytics Settings:



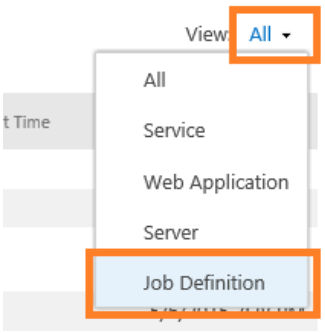
In particular, this could be useful if only a specific WFE server has access to the Internet.

Tracking the Status

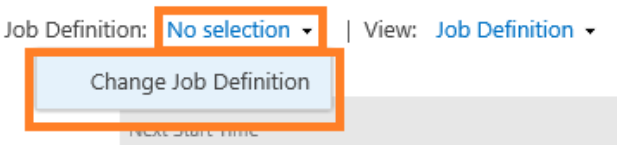
Normally, this job takes **minutes** to complete, mostly depending on your internet connection speed. You can track the status of the Geographic Locations Database Update job from SharePoint **Check job status** section:



In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you can see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint - Geographic locations database update.**

Recommended Schedule

Once per month or **Disabled**, depending on the location detection mode (see **Advanced Settings** for this job): **Detect location by IP** or **Country data is located in the following field in User Profile** respectively.

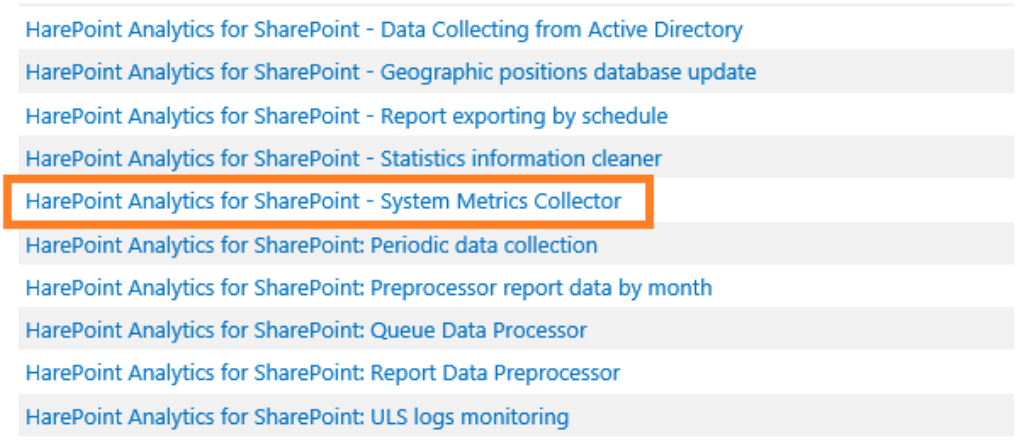
Important note: For both cases, it is necessary to have this database downloaded **at least once** in order to have data displayed in **Visits by Countries** report.

7. System Metrics Collector

In HarePoint Analytics Settings:

Note: this timer job is not displayed in HarePoint Analytics Settings.

In SharePoint Job Definitions (named **HarePoint Analytics for SharePoint – System Metrics Collector**):



Description

Note: This timer job is not displayed on the **Data Collection and Processing Diagram**.

The System Metrics Collector timer job is used to collect data on **WFE servers'** performance, such as **CPU Usage, Memory usage, Disk usage, Network usage**, etc. These data are **solely** available in the **Performance** category of reports in **Central Administration**. This fact makes this timer job **optional** – in case you don't need performance reports, you can disable the System Metrics Collector timer job and that will not affect data in any other report.

Note: some of the reports display the data in **real-time** (the delay only depends on this timer job's schedule, which is **"every 5 minutes"** by default). This means that data is retrieved by the System Metrics Collector timer job get to the report data tables of the Main HarePoint Analytics Database **directly**, unlike all other data in the reports (which need to pass through a succession of timer jobs and database tables).

Execution

This timer job collects the data about the performance from the **Performance Counters** of Windows Server.

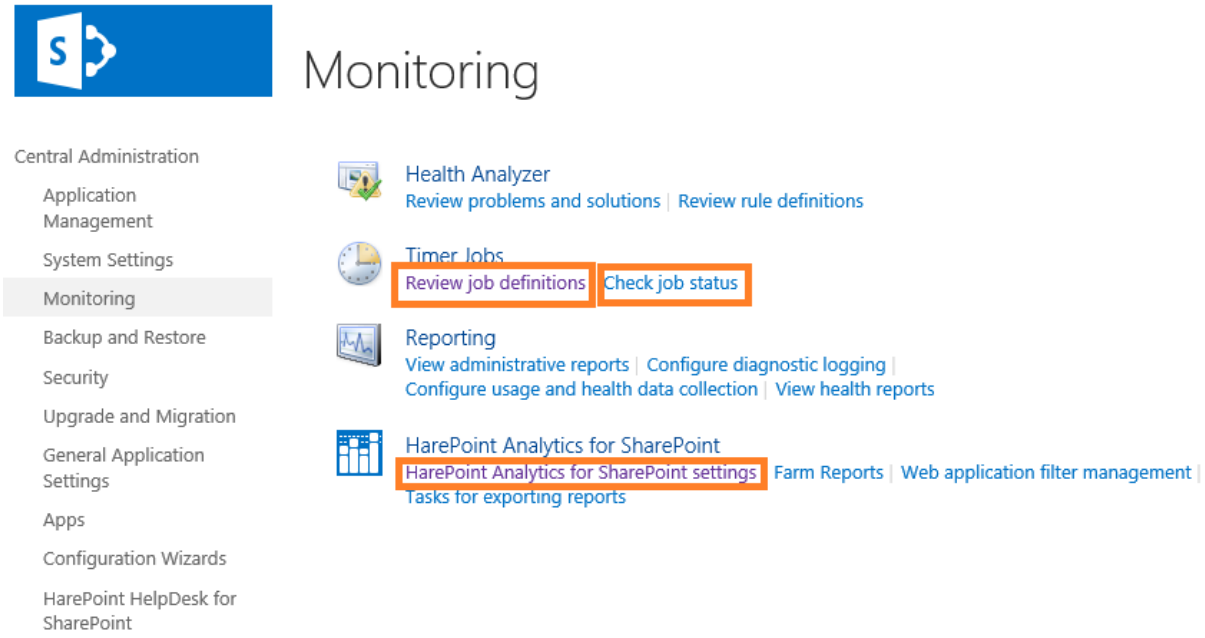
Important note: In order to be able to retrieve these data, the SharePoint **farm account** needs to be a member of **Performance Monitor Users** group on WFE servers (for more information on how to set up System Metrics data collection properly, please refer to **HarePoint Analytics Administrator Guide – Initial Settings - Data collection on server performance**).

Note: The System Metrics Collector job needs to run on **each WFE server** to have the correct information for the summary load for the **whole SharePoint Farm**.

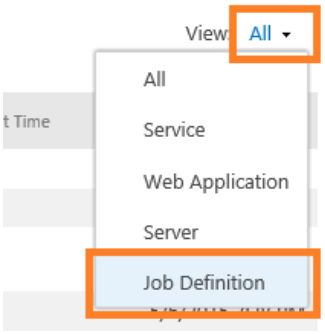
This timer job consumes the resources of **all WFE servers**.

Tracking the Status

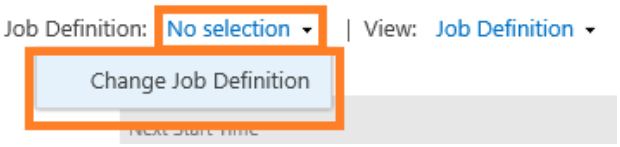
You can track the status of System Metrics Collector job from SharePoint **Check job status** section:



In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint - System Metrics Collector.**

Recommended Schedule

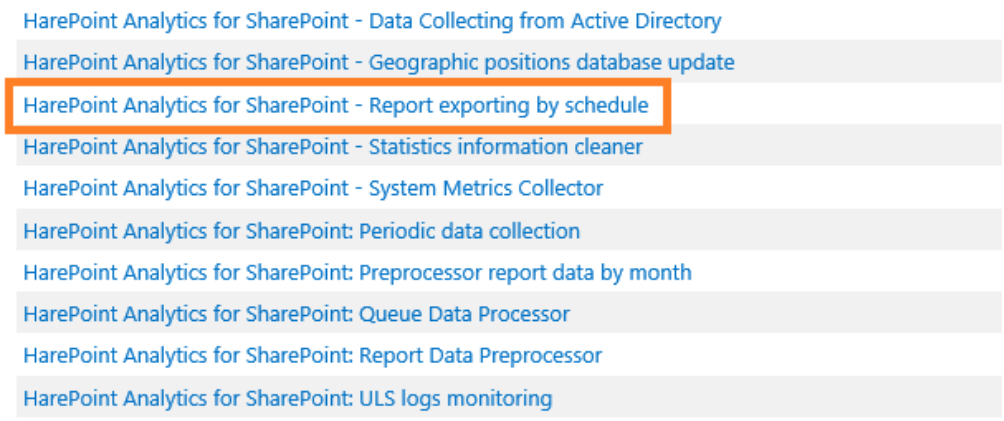
Disabled or **Every 5-10 minutes**, depending if you **don't** or **do** need the performance information in the reports respectively. Setting shorter intervals is not recommended due to increased load on WFE servers; longer intervals may cause some performance anomalies (CPU Usage spikes, etc.) to be unnoticed.

8. Report Exporting by Schedule

In HarePoint Analytics Settings:

Note: this timer job is not displayed in HarePoint Analytics Settings.

In SharePoint Job Definitions (named **HarePoint Analytics for SharePoint - Report exporting by schedule**):



Description

Note: This timer job is not displayed in the **Data Collection and Processing Diagram** above.

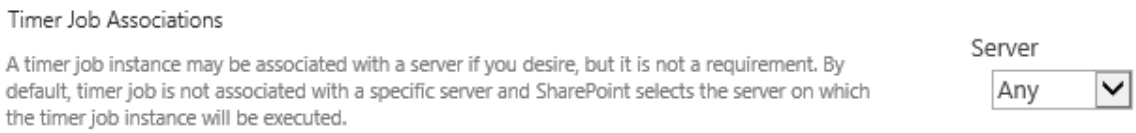
Report exporting by schedule timer job is used to **export the scheduled reports** and send them by-email, or save to selected document library. This is performed for all sites and site collections by a single timer job.

Execution

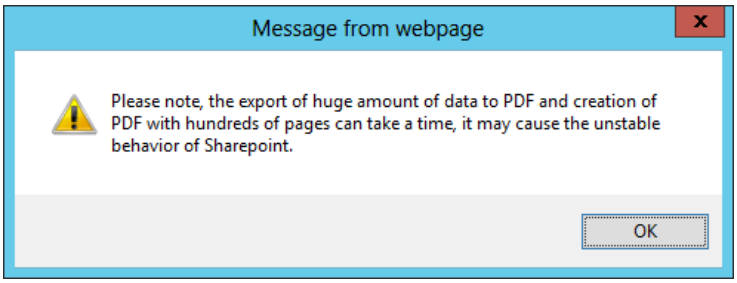
This timer job generates each required report, based on the data from the HarePoint Analytics Main Database, and saves it to an **XLS** or **PDF** file. After that, the file is either sent by e-mail or saved to a document library (it is possible to have both options simultaneously).

This process consumes the resources of the **WFE server** where it runs.

By default, SharePoint automatically selects the WFE server to run this job, but you can **specify the preferred WFE server** explicitly in HarePoint Analytics Settings:



Important Note: Currently there are **no limitations established** in HarePoint Analytics regarding the **size of reports**, so please consider in advance the **size of the exported report** (number of pages)..

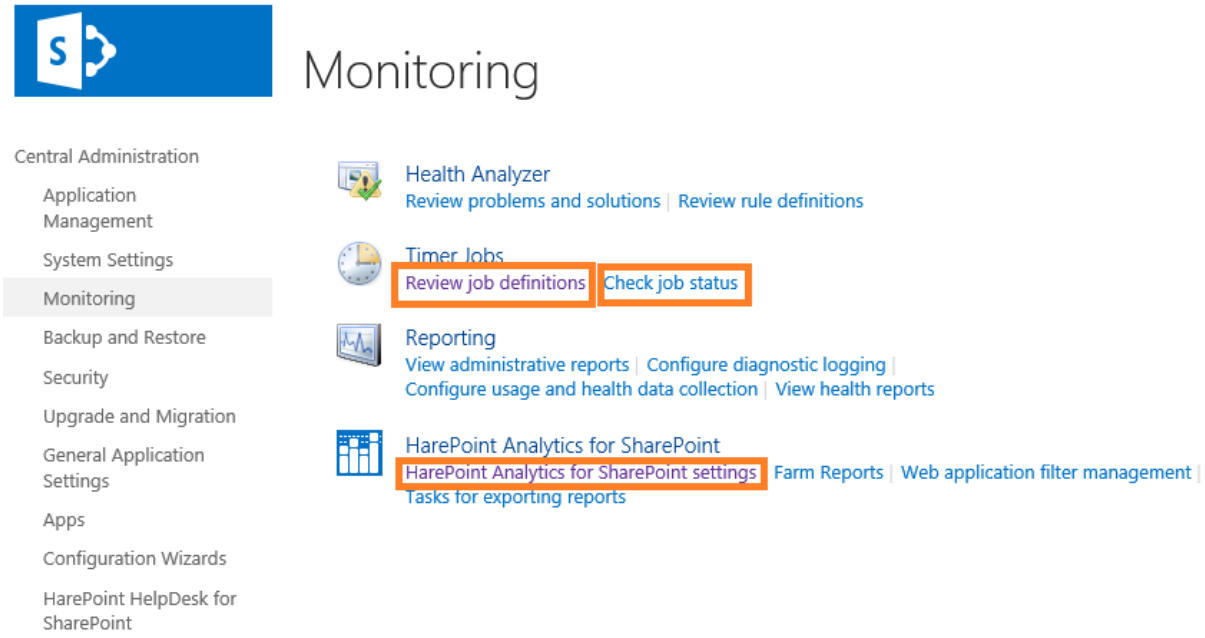


The subscription task to export a report consisting of thousands of pages will put a **substantial load on the WFE server** (where this job is running) for a lengthy period of time: either until the report is finally generated, or until the timer job fails with a timeout.
A running job **can only be stopped** by restarting SharePoint Timer Service, which in most cases is **not acceptable** in a production environment during working hours.

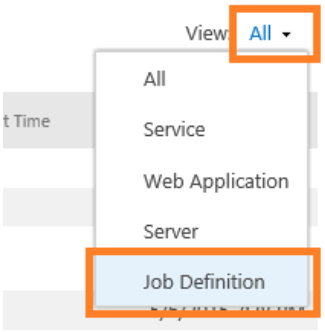
SQL Server usage by Report exporting by schedule timer job is low.

Tracking the Status

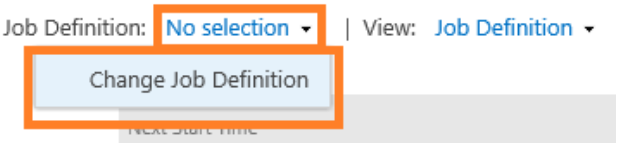
You can track the status of Report Exporting by Schedule job from SharePoint **Check job status** section:



In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:

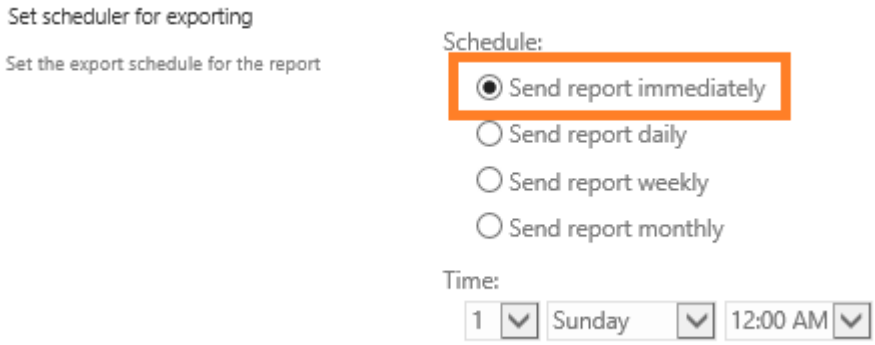


In the new window, scroll down until you see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint - Report exporting by schedule.**

Recommended Schedule

Every 10 minutes.

Note: This also means that when using the **Send report immediately** schedule option in **New Subscription Rule**, the reports will be sent within 10 minutes, but not actually immediately:



In case you are sure the **Send report immediately** option will never be used, you can **change the timer job schedule to Daily**.

Managing HarePoint Analytics Database size and growth rate

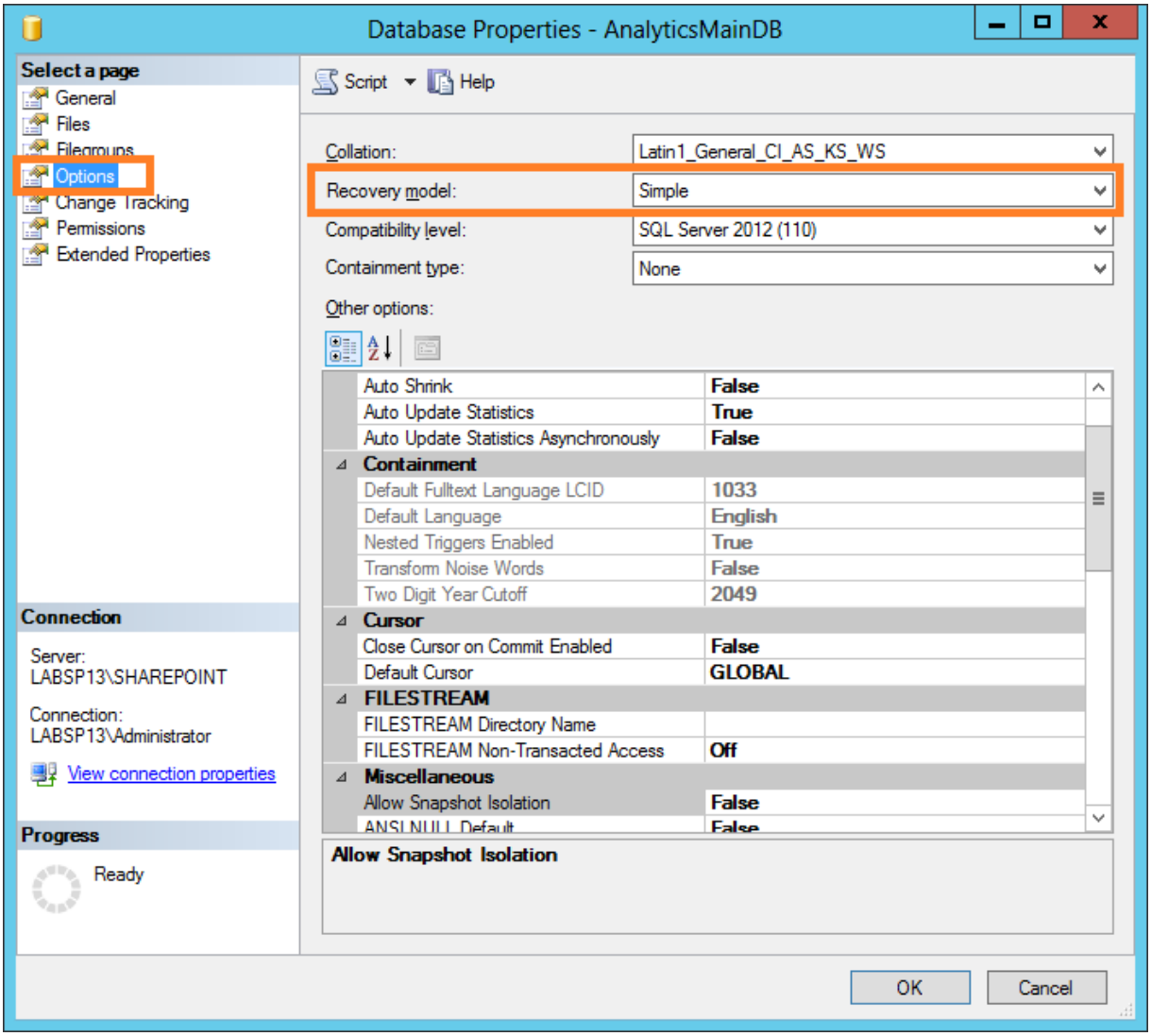
HarePoint Analytics collects a wide range of various information. Obviously, that huge amount of data means a huge database size. This chapter describes the ways to achieve the balance between

the amount of stored detailed historical data available in the reports and optimal database size for better SharePoint and SQL Server performance and maintenance.

Shrinking transaction logs

The size of transaction logs can grow substantially as HarePoint Analytics gathers data over time, especially if the **Full** recovery model is used for the SQL database.
Our **recommendation is to use the Simple** recovery model for both the Queue and Main Databases to reduce the logging level and improve overall SQL server performance:

Open **SQL Management Studio**, locate the HarePoint Analytics **Main Database**, and access its **Properties – Options**:



Please refer to the **HarePoint Analytics Administrator Guide** for more technical information on shrinking transaction logs (**Maintenance of Main statistics database** chapter).

Data collection filters

By default, HarePoint Analytics collects all the information it can technically capture, on site collections where the HarePoint Analytics feature is activated.
However, there might be some information that either you will **never view in the reports**, or that can **distort the reports** (e.g. the huge number of hits generated by **search crawlers**, scripts running technical accounts, many hits for certain file types like .gif, and so on).
It is **highly recommended to set up data collection filters** to prevent these kinds of information from being captured (and therefore stored in Analytics Database), as this will:

- ensure the data in reports are meaningful and not distorted by multiple hits generated by search crawlers
- reduce the database growth
- reduce the execution time of key timer jobs
- reduce the SQL Server load.

Important note: Data collection filters **do not affect the existing data that are stored** in the Main Database. They concern **only newly collected data**.

Important note: The information that has been filtered out by data collection filters will be **permanently lost and cannot be restored**! Make sure the data collection filters you apply will not filter out useful information!

How to determine the information that should be filtered out

1. Reviewing the reports

You can review the following reports in order to find data that is not worth collecting:

- **Content popularity** – to determine **pages** that are accessed very frequently, but which are either technical or are not of any use in reports.
- **Document popularity** - to determine what **document (file) types**, or entire **document libraries** displayed in the report which are technical, or for which there is no point in collecting usage data(**.gif, .bmp**, etc).
- **List items popularity –** to determine frequently accessed **list items** or **whole lists** for which reporting is unnecessary.
- **Users activity –** to determine **user accounts** that are used for technical purposes (such as site and site collection administrators' accounts, special accounts to run scripts, crawlers, and so on). There is generally no need to display such activity in reports. Quite often, **Anonymous** users need to be filtered out – see the highlight below.

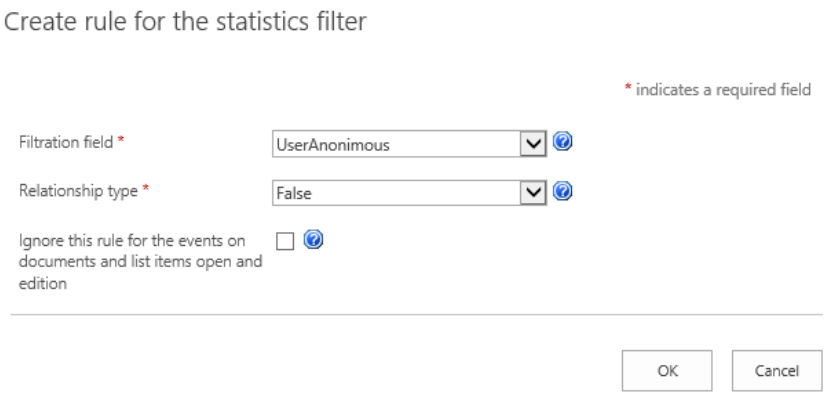
Why do Anonymous users appear in the reports, if anonymous access is not allowed in my SharePoint farm?

Seeing Anonymous as a user in reports even when anonymous access is not allowed is an entirely expected situation with HarePoint Analytics. This is caused by technical nuances of SharePoint's authentication mechanisms:

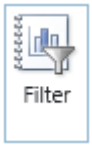
- There are pages where users authenticate, so they are actually initially accessed by anonymous users.
- This is the way browsers work: some pages/content are first accessed as anonymous, then the browser automatically authenticates and attempts to access the page again.

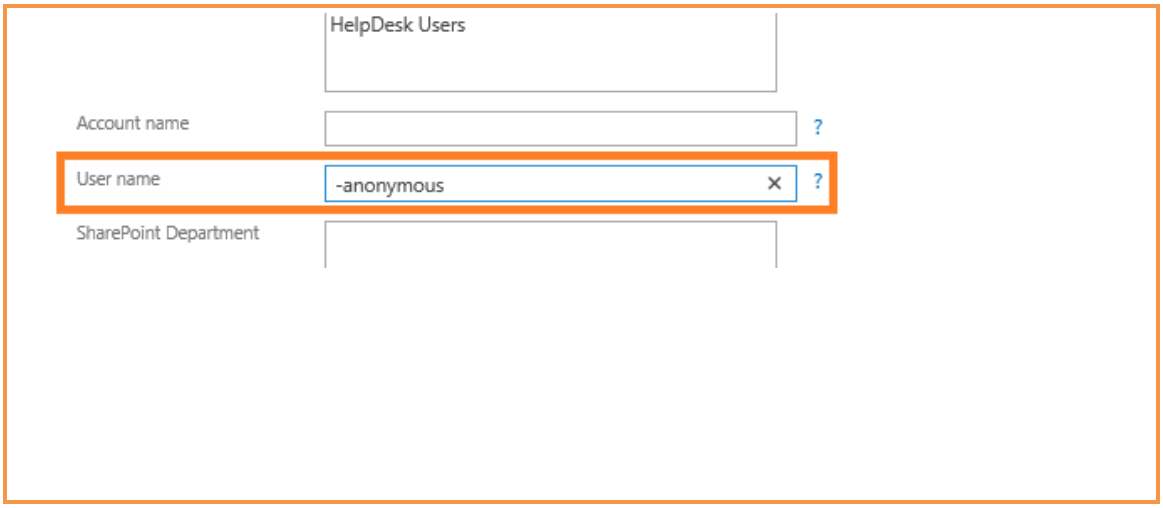
This is **normal behavior** of SharePoint and HarePoint Analytics, and it does not point to any issues in HarePoint Analytics' or SharePoint's configuration.

The solution in this case is to set up a farm level data collection filter:
UserAnonymous False



However, the previously collected information on Anonymous users will still be displayed in the reports. To hide them, you can apply a display filter:
Filter button on the ribbon → **Username** field, type **-anonymous**

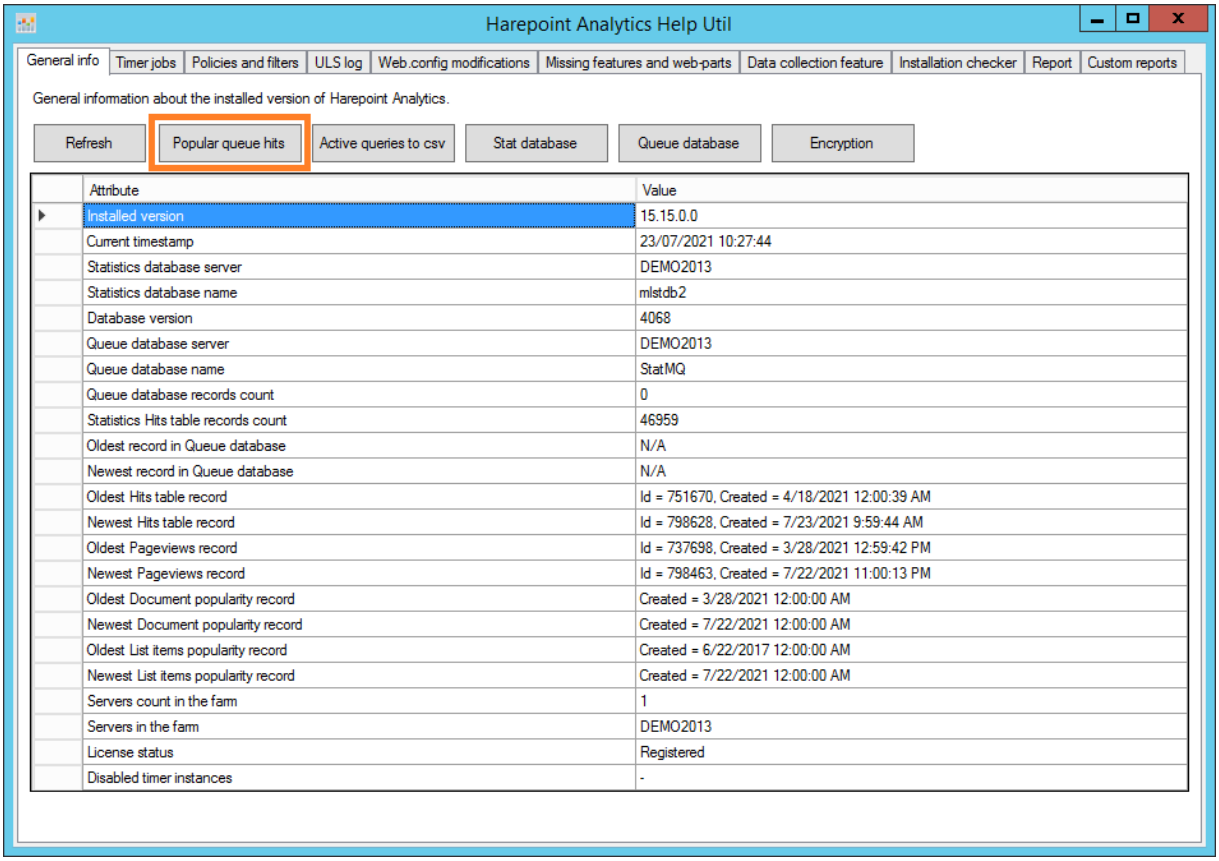




2. Using HarePoint Analytics Utility

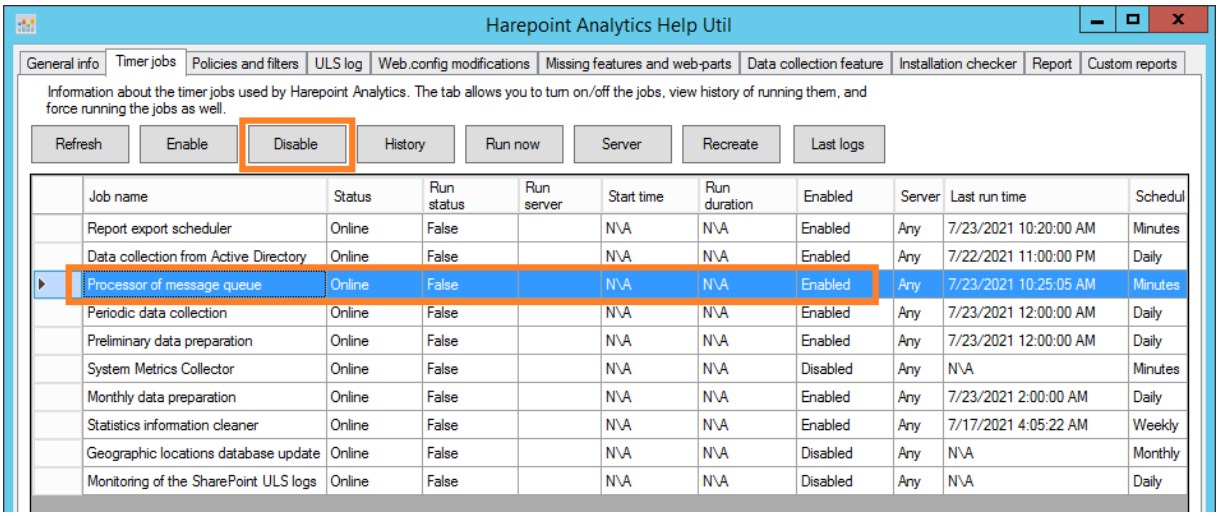
In the HarePoint Analytics Utility, there is an option to **check the most popular hits** that are getting to a Queue Database. It allows to examine if there are any unnecessary data collected in excess amounts, and which should be filtered out at the stage of data collection.

Open **HarePoint Analytics Utility** – **General Info** tab. Click the **Popular queue hits** button**:**



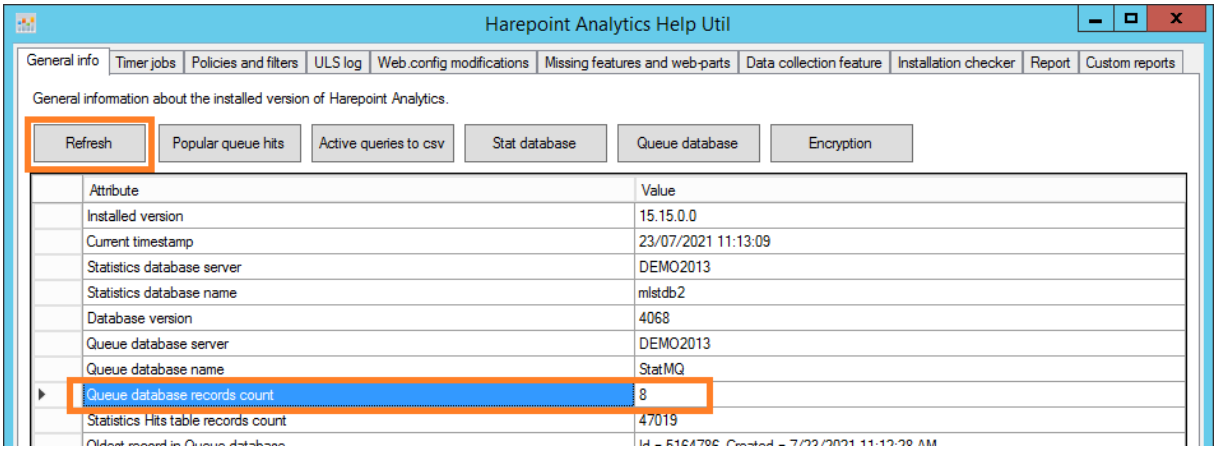
Note: It is required to have **at least 3,000 hits** in the Queue Database.
If you are not getting that number of hits by the time the Queue Database is emptied by the

Processor of the Message Queue timer job (every 5 minutes by default), you can **temporarily disable** this timer job on the **Timer Jobs** tab of the Utility:

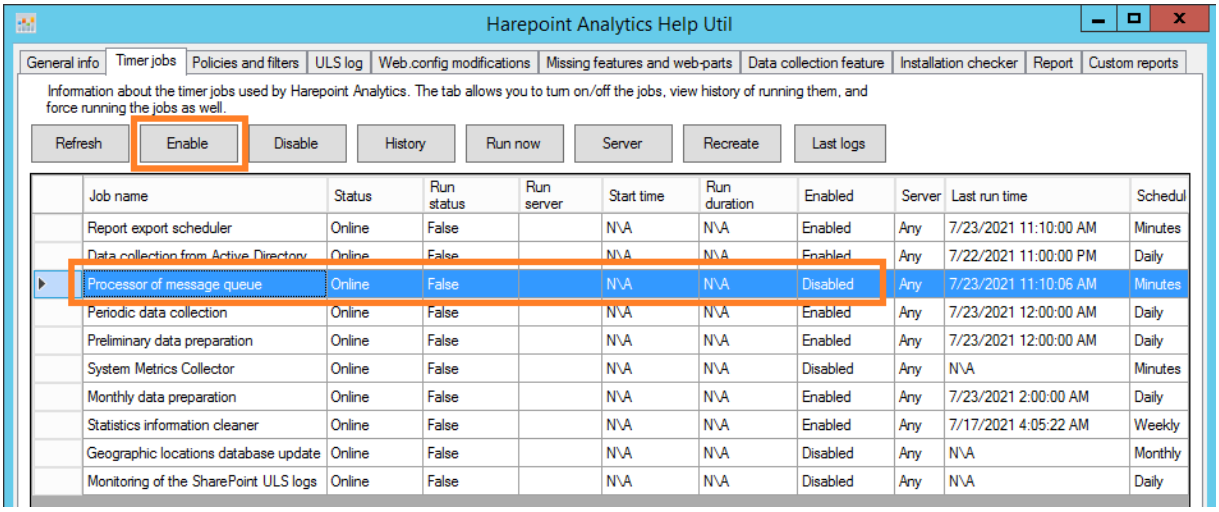


Switch back to the **General Info** tab and click **Refresh** from time to time.

Once you get more than 3,000 hits in **Queue database records count**, click **Popular queue hits**, and analyze that information.



Do not forget to **re-enable the Processor of Message Queue** timer job when completed:



How to set up data collection filters

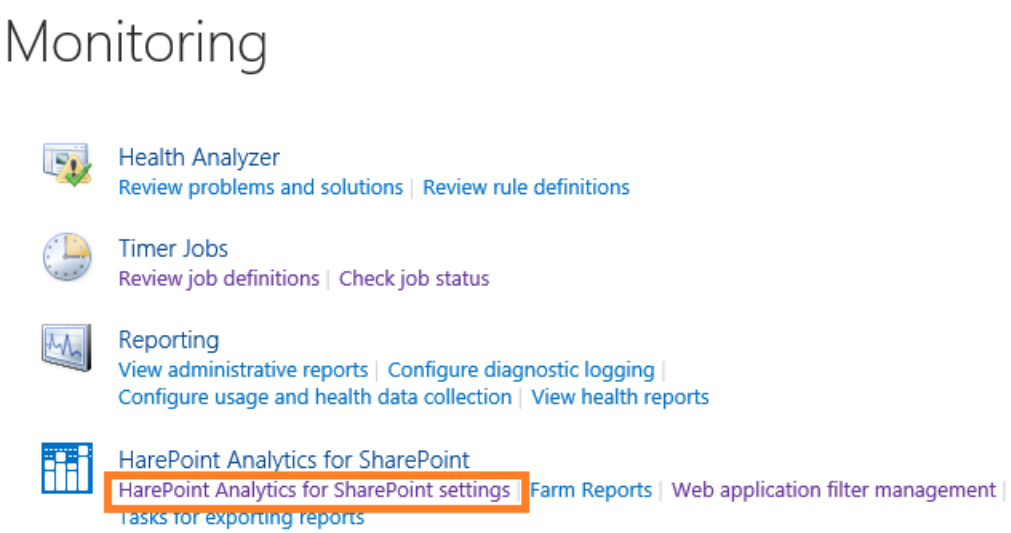
In HarePoint Analytics, it is possible to set up data collection filters at **all levels in SharePoint**.

Note: by default, **all filters are inherited from the level above**. You can **break inheritance** at any level if necessary.

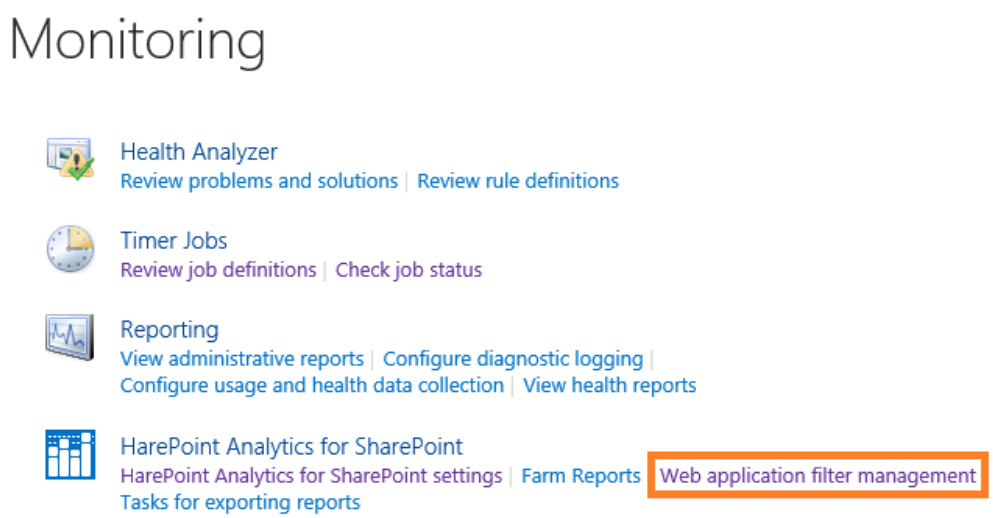
Some Data Collection Filters are applied at the level of the **HTTP Module** (i.e. before they get to the Queue Database), others are applied at the level of the **Processor of Message Queue timer job** (i.e. they get to the Queue Database, but will not be moved to Main Database).

Please refer to the **HarePoint Analytics Administrator Guide – Advanced Settings - Data collection filters** for more technical information on Data collection filters.

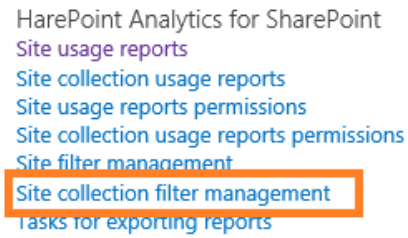
- **Global filters at the Farm level**: in **Central Administration – Monitoring – HarePoint Analytics Settings – Statistics filter**:



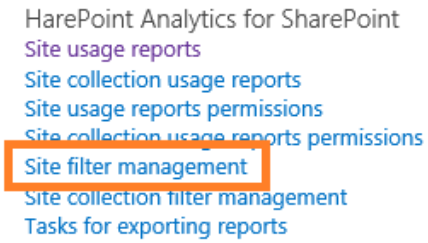
- **Web application level**: in **Central Administration – Monitoring –** HarePoint Analytics for SharePoint section **- Web application filter management**:



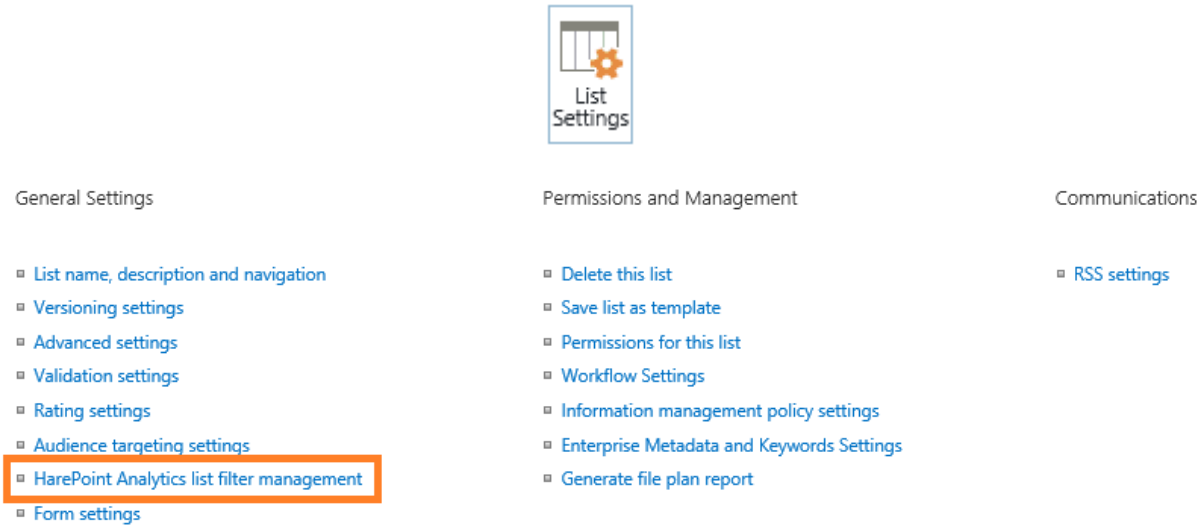
- **Site Collection level**: Access **Site Settings** for the required Site Collection – HarePoint Analytics for SharePoint section – **Site collection filter management** link:



- **Site level:** Access **Site Settings** for the required Site – HarePoint Analytics for SharePoint section – **Site filter management** link:

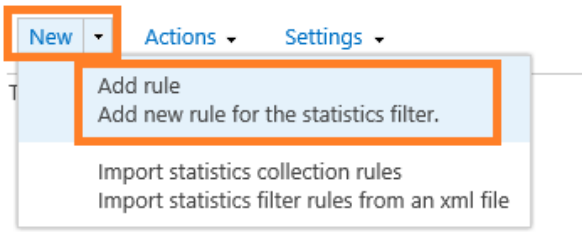


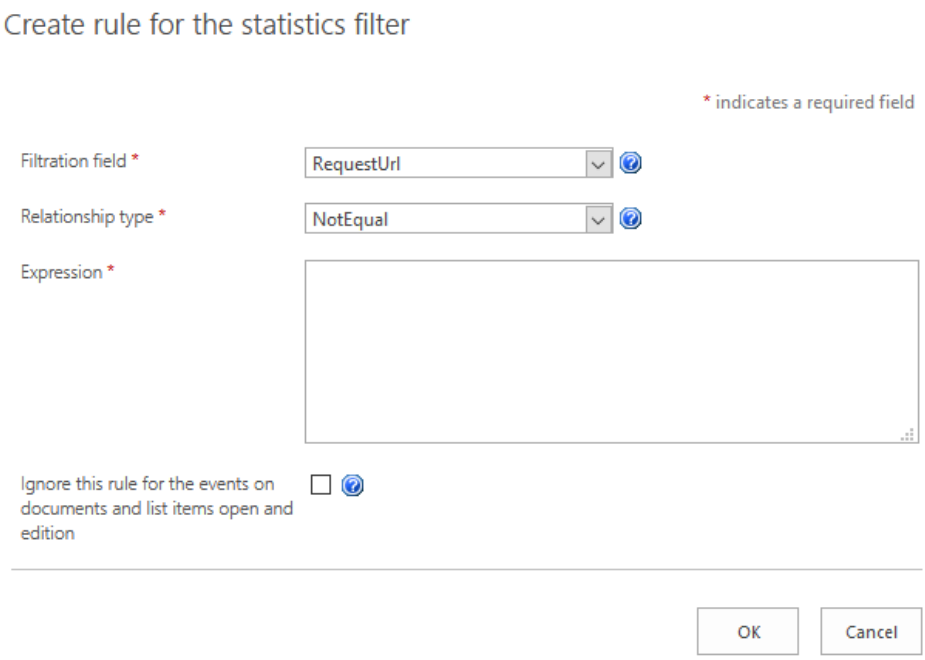
- **Document Library** or **List Level:** Access the **settings** of the required **List** or **Document Library – HarePoint Analytics list filter management** link:



Generally, the **recommendation** is to add data collection filters at the **farm level** to be sure they affect the whole SharePoint farm, including Site collections that are added in the future.
Use data collection filters at other levels for **more specific tasks**, to be sure they do not affect other web applications/site collections/sites/libraries inadvertently.

To add a new filter at the selected level, click **New – Add Rule**:





Important Note: Data Collection Filters have **positive (or white-list) logic**; meaning that only data that **comply** with that filter statement will pass to the Main Database. Applying incorrect filters will stop useful information from being recorded! These data will be **permanently lost and cannot be restored!**
In order to prevent possible data loss, positive relationship types are not available by default.
If there is a need to exclude all incoming data except just a specific one, you can enable positive relationship types by setting **hidePositiveFilters** policy to **false** (refer to **Administrator Guide - Using stsadm.exe to manage policies**).

Examples of commonly used filters are:

To exclude certain pages, sites or site collections, document libraries or lists, other links:

RequestURL NotContains <…> (part of the URL)

To exclude certain file types:

DocumentURL NotContains <…> (file extensions, e.g. ".gif")

Create a separate rule for each file extension, or use **NotMatchRegex** to filter out multiple file extensions:

DocumentURL NotMatchRegex ^.+\.((gif)|(png)|(bmp))$

This rule will filter out *.gif*, *.png* and *.bmp* file extensions.

To exclude Anonymous users:

UserAnonymous False

To exclude certain users (**case-sensitive!**):

UserName NotEquals <…>

UserLoginName NotEquals <…>

Create a separate rule for each user account.

To stop data collection for this SharePoint level:

DoNotCollect True

Note: Data Collection Filters can also be configured from the **command line** and via HarePoint Analytics **Policies** - Please refer to **HarePoint Analytics Administrator Guide – Advanced Settings - Data collection filters.**

Data retention period

What data are stored in the Main Database and for how long?

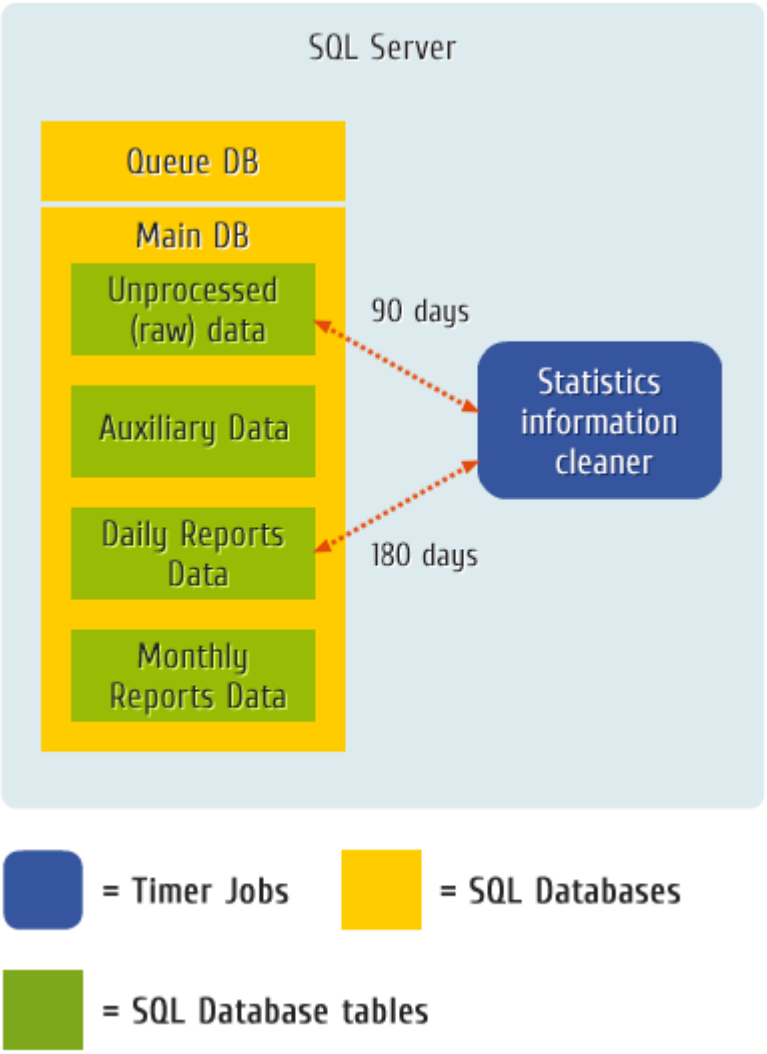
- By default, HarePoint Analytics stores the data for **Daily reports** (the most detailed data) for **180** days.
- The data for **Monthly reports** are stored for an **unlimited** period of time, they are never removed from the database.
- In addition, the **Raw** (**unprocessed) data** (that are **not used directly** to display the reports) are stored for **90** days by default. The purpose of keeping them is to be able to **rebuild** some of the reports in case if they get corrupted for any reason.

Reducing the data retention period will remove the some data from the Main Database and **reduce** its size. However, often compliance or internal policy requires data to be kept longer. Consideration of the space required should be taken in advance.

Important Note: data removed are **deleted permanently and cannot be restored**!

Statistics information cleaner timer job

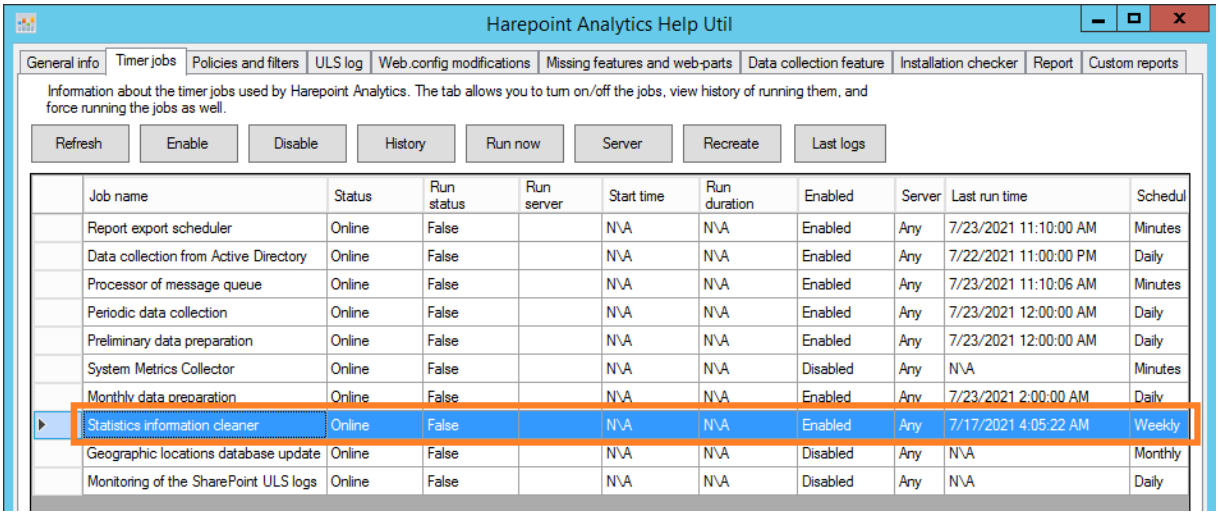
Clean up of old statistical information is performed by a separate timer job, **Statistics information cleaner:**



The **Statistics information cleaner** can be managed from **SharePoint Job Definitions** (Central Administration – Monitoring – Job Definitions):

HarePoint Analytics for SharePoint - Data Collecting from Active Directory
HarePoint Analytics for SharePoint - Geographic positions database update
HarePoint Analytics for SharePoint - Report exporting by schedule
HarePoint Analytics for SharePoint - Statistics information cleaner
HarePoint Analytics for SharePoint - System Metrics Collector
HarePoint Analytics for SharePoint: Periodic data collection
HarePoint Analytics for SharePoint: Preprocessor report data by month
HarePoint Analytics for SharePoint: Queue Data Processor
HarePoint Analytics for SharePoint: Report Data Preprocessor
HarePoint Analytics for SharePoint: ULS logs monitoring

Alternatively, using the **HarePoint Analytics Utility:**



Note: This timer job is not available from HarePoint Analytics Settings.

Execution

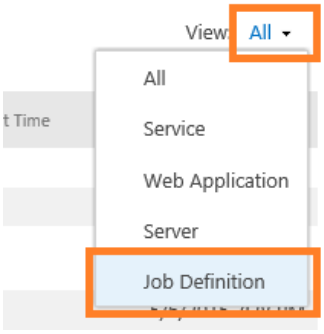
This timer job actually initiates multiple stored procedures on the SQL server, so there is no load on SharePoint servers.

Note: Please keep in mind this timer job consumes resources of the SQL server if you intend to run this job manually ("**Run now**" option) in order to force data removal and database cleanup. This is not recommended during the working hours.

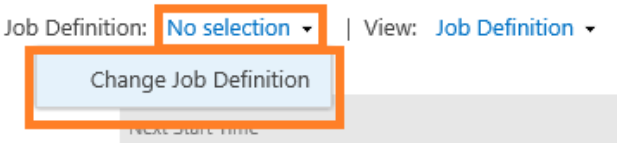
Tracking status

You can **track the Statistics information cleaner job status** in SharePoint Check Job Statuses (Central Administration – Monitoring – Check job status):

In the top right corner click on **View - All** and select **Job Definition**:



Click on **No Selection – Change Job Definition**:



In the new window, scroll down until you see HarePoint Analytics jobs, click on **HarePoint Analytics for SharePoint - Statistics information cleaner.**

Recommended Schedule

Once weekly during off-hours.

Managing the data retention period

The Data retention period can be changed or checked using the **command-line interface** only. This setting is not available in the GUI.

There are two utilities that provide command-line management for HarePoint Analytics:

- For Analytics version 16.12/15.17 or later, this can be performed by means of the **HarePointAnalyticsUtil.exe** utility, which can be found in Analytics distributive package:

  SharePoint SE/2019/2016 (Analytics 16.12 or later):
  <path_to_distributive>\Analytics Tools

  SharePoint 2013 (Analytics 15.17 or later):
  <path_to_distributive>\Analytics Tools2013

- For all versions of Analytics, in SharePoint 2019/2016/2013 (except SE) you can use **stsadm.exe** utility, which is usually located at:

  SharePoint 2016/2019
  C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\16\BIN

  SharePoint 2013
  C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\15\BIN

  (**SharePoint SE** – note the stsadm utility is not available)

For stsadm commands, we recommend using SharePoint Management Shell.

1. Setting new data retention period

Use the following command to set the new retention period:

HarePointAnalyticsUtil.exe set-data-keep-days -group <*report group name*> -days <*amount of days*>

or

Stsadm -o mlstsetstatdatakeepdays -<*report group name*> <*amount of days*>

where

<amount of days> is: set the required amount of **days,** or set **0** (zero) to disable the data cleanup

<report group name> is:
For raw (unprocessed) data (default is 90 days)**:**

- **VisitsMain** (unprocessed data for visits reports)
- **DocsListsMain** (unprocessed data for document and list)
- **SearchMain** (unprocessed data for search reports)

For data in daily reports (default is 180 days)**:**

- **VisitsReports**
- **DocsReports**
- **ListsReports**
- **SearchesReports**
- **PerformanceReports** (in Central Administration)

Examples:

HarePointAnalyticsUtil.exe set-data-keep-days -group visitsmain -days 30
or
Stsadm -o mlstsetstatdatakeepdays -visitsmain 30
Sets a retention period for unprocessed data for Visits reports to 30 days.

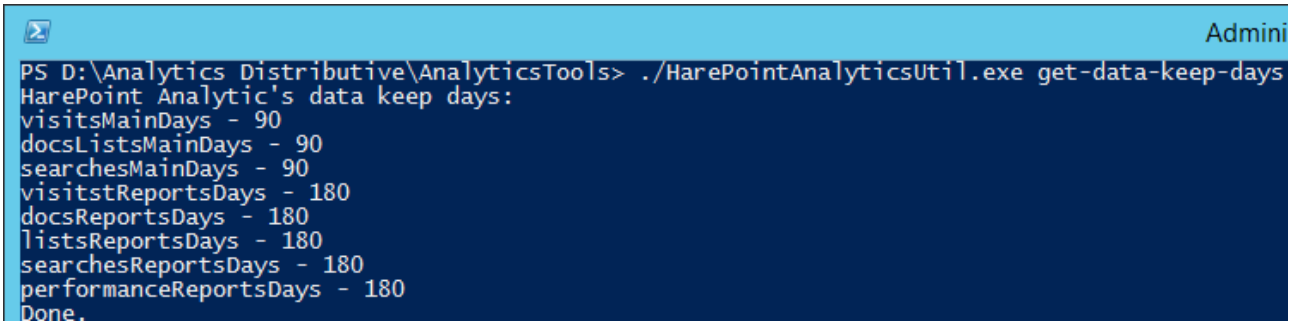
HarePointAnalyticsUtil.exe set-data-keep-days -group performancereports -days 0
or
Stsadm -o mlstsetstatdatakeepdays -performancereports 0
Disables the data cleanup for performance reports.

2. Checking the current settings for the data retention

Use the following command to view the current data retention settings:

HarePointAnalyticsUtil.exe get-data-keep-days

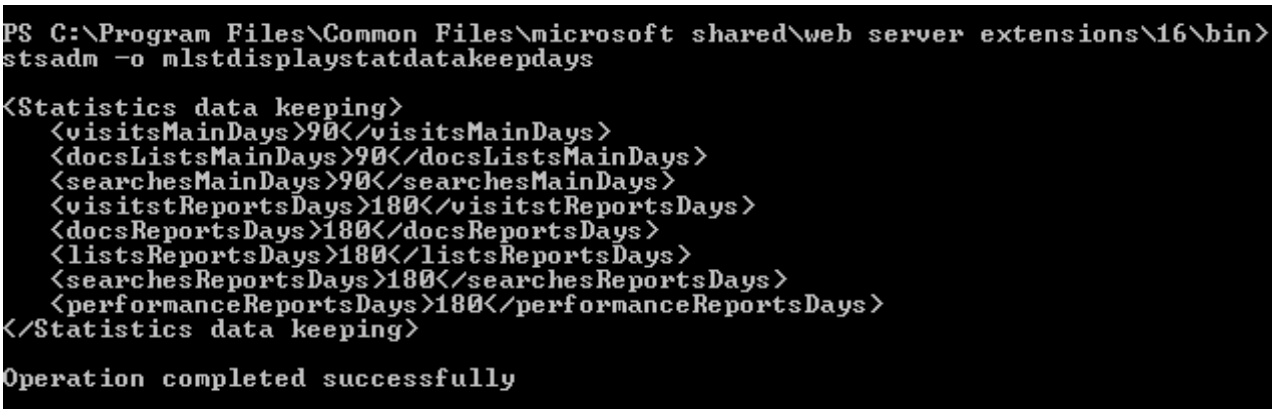
Displays a data retention period for each report group:



or

Stsadm -o mlstdisplaystatdatakeepdays

Displays a data retention period in XML-view, for each report group.



Troubleshooting

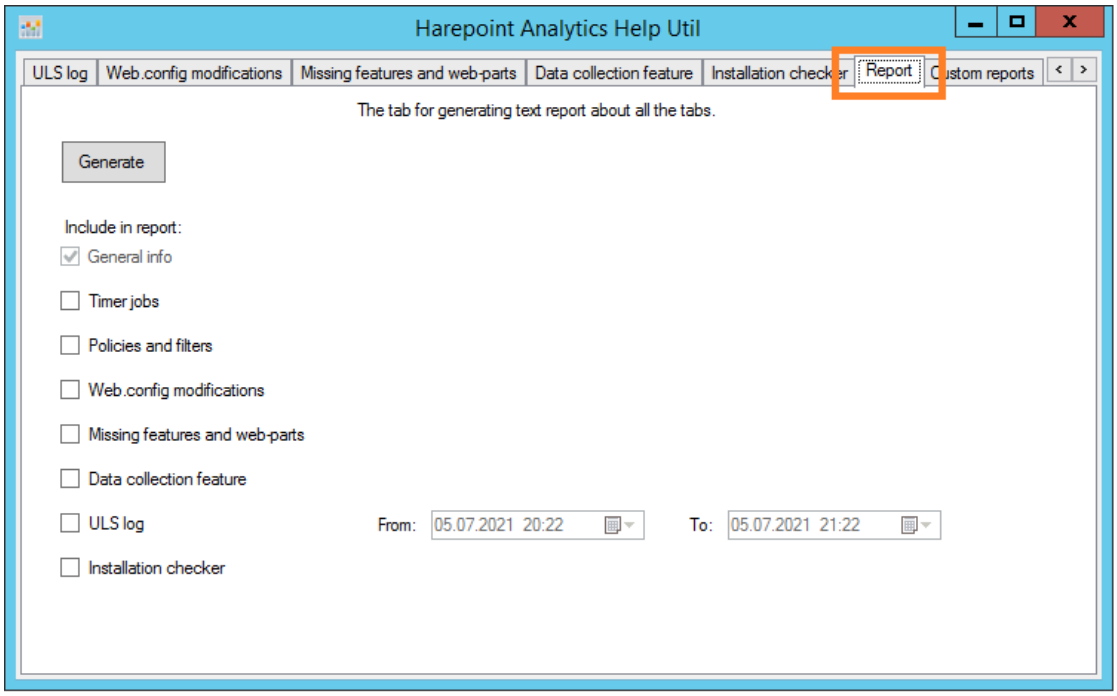
This section describes some typical issues that may occur with HarePoint Analytics. Detailed guidance is provided for each situation.

Contacting HarePoint Support

If you encounter an issue that is not described here and need assistance, please contact HarePoint Support via support@harepoint.com, or create a ticket on http://harepoint.com/support:

1. **describe** the situation
2. attach the relevant **screenshots**
3. attach the **report** generated by **HarePoint Analytics Utility – Report tab –** preferably with **all options checked**, **ULS log date range** set according to the time frame when the issue took

place or related timer jobs were running.



Newly installed HarePoint Analytics shows no data

Symptoms

If HarePoint Analytics was been installed fresh some time ago, but no data are shown in the reports so far. There is evident user activity on the site collections where **HarePoint Analytics site collection feature** is activated.

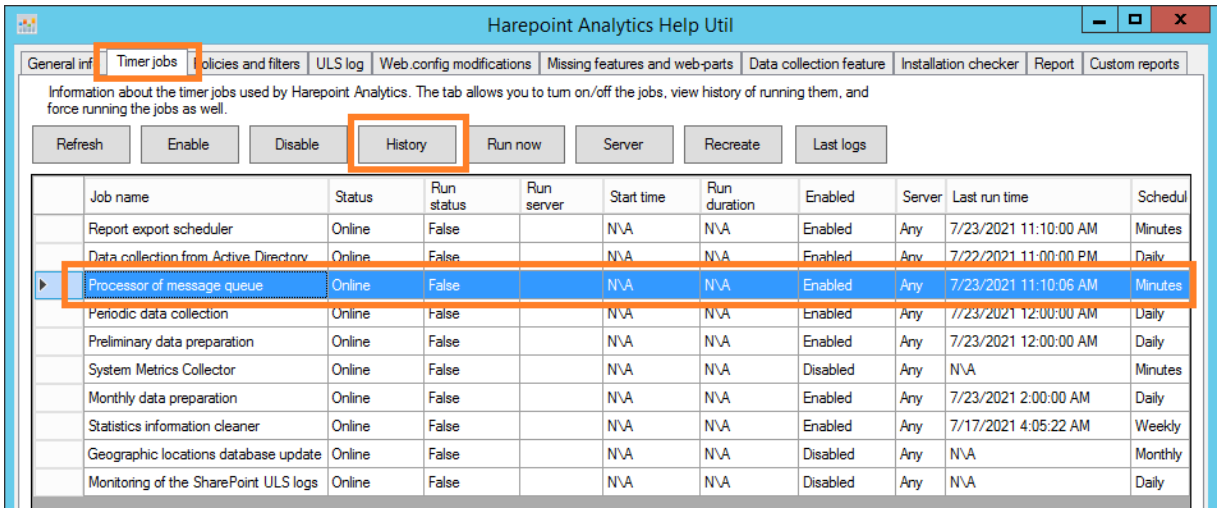
Explanation

The possible reasons for that are:

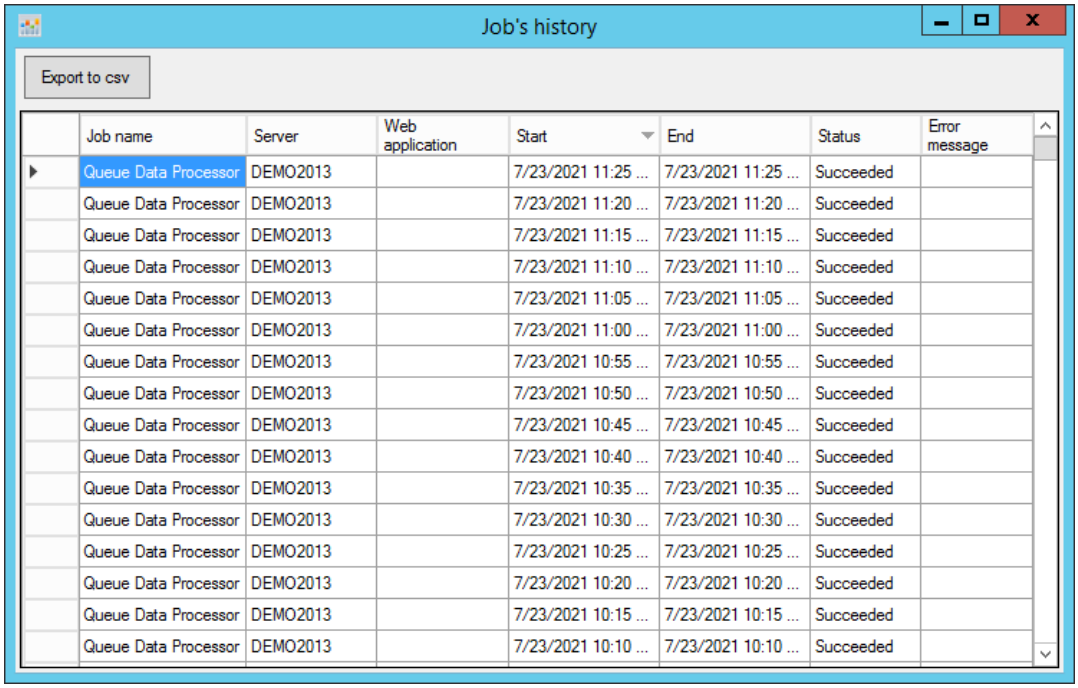
1. HarePoint Analytics is **not a real-time monitoring tool**. By default, it takes up to 24 hours until the data become available in reports. This happens because the data need to be pre-processed (prepared) first to ensure the reports are displayed quickly and without delays. This is performed by Preliminary Data Preparation timer job. Every time this timer job completes its cycle, a new portion of data becomes available in the reports.
2. **Data collection starts as soon as the product is installed**. Historical data (**before** the product installation) cannot be recovered or displayed. There is, however, a standalone tool, **HAIISLogImporter.exe** (available in distributive package of HarePoint Analytics), that allows you to import older data from **IIS logs** to HarePoint Analytics. Since IIS logs contain only a small amount of information, only in few reports will be available after this import. Normally this tool should be used only once – immediately after product installation (if necessary). Please refer to the **HarePoint Analytics Administrator Guide – Importing data from IIS logs (optional)** for more details on how to work with the HAIISLogImporter.exe tool.
3. HarePoint Analytics **timer jobs are not configured properly**, so the timer jobs are not properly interacting with each other.
4. The **amount of collected data is very huge** or the **performance of the SQL server** is not sufficient to process the data in a timely fashion.

Steps to take

1. Open **HarePoint Analytics Utility**, **Timer Jobs** tab.
2. Click on **Processor of Message Queue** timer job.
   Make sure it is **Enabled**.



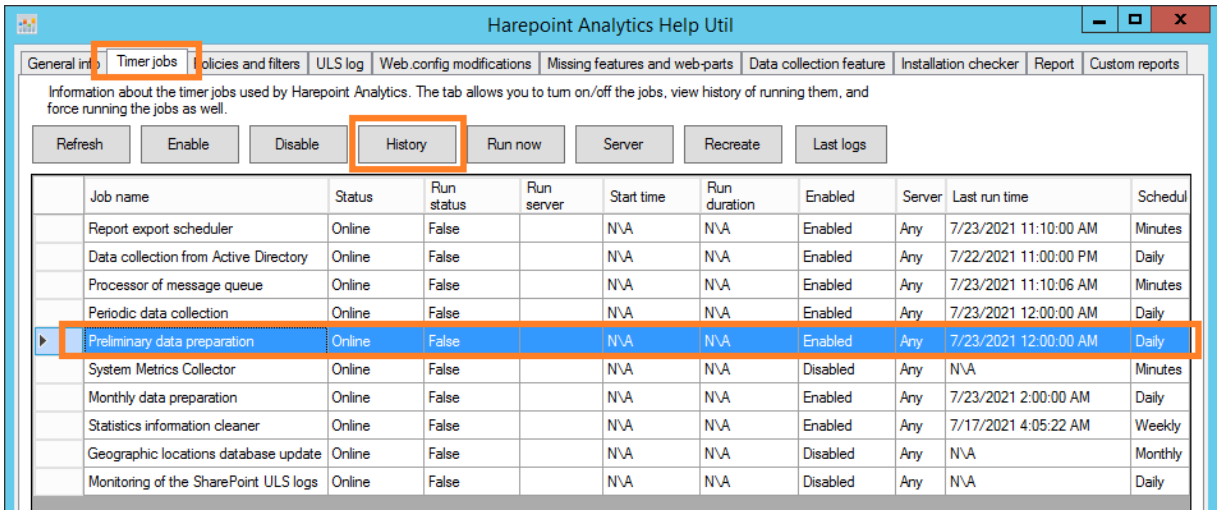
Check **Schedule** (should be **Minutes**) and **Last run time** (should be not longer than 10 minutes ago, except when Preliminary Data Preparation is running).
Click **History** button to review the previous runs of this job.



Make sure it's running every 5-10 minutes (or as set in its schedule), and the **Status** is **Succeeded** for every launch. Normally, it should take **few minutes** every time to complete. Longer times may point either to **poor SQL Server performance** (please refer to **HarePoint Analytics Administrator Guide** regarding technical requirements for SQL server), or to **huge amount of collected data** (try enabling HarePoint Analytics feature on only a few site collections first; or set up Data collection filters to filter out the excessive and unnecessary

data that are tracked).
In case the timer job **fails**, or seems to be **stuck with no progress**, review the **error message** along with **related ULS log messages** (you can use ULS log tab in the Utility, or a third-party ULS log viewer software). If necessary, contact HarePoint Support and provide that information.

3. Click on **Preliminary Data Preparation** timer job.
Make sure it is **Enabled**.



Check **Schedule** (should be **Daily**) and **Last run time.** Basically, the latest available data in the reports are shown as of this **Last run time**, so if you still have **N\A** there – no data will be displayed in the reports.
By default, this job will start **around 12AM**. You can use the button "**Run now**" to force the execution of this timer job to see the data earlier, but take into account it can put a **substantial load on the SQL server**, so it's **not recommended** to do so during working hours on a production environment.
This timer job may take from minutes up to several hours to complete. Longer times may point either to **poor SQL Server performance** (please refer to HarePoint Analytics Administrator Guide regarding technical requirements for SQL server), or to huge amount of collected data (try enabling the HarePoint Analytics feature only on a few site collections first; or set up Data collection filters to filter out the excessive unnecessary data that are tracked).
In case the timer job **fails**, or seems to be **stuck with no progress**, review the **error message** along with **related ULS log messages** (you can use the ULS log tab in Utility, or a third-party ULS log viewer software). If necessary, contact HarePoint Support and provide that information.

No data in reports for some site collection(s)

Symptoms

Reports for one or more site collection are completely empty. At the same time, reports in Central Administration – Farm reports are displayed properly.

Explanation

Typically, this situation occurs when a site collection has been **backed up and restored**. After this, a **new ID** is assigned to the restored site collection, so it no longer coincides with the older ID that is stored in Main Database for all the reports for that site collection. At the same time, the information for this site collection based on the new ID has only just started being collected, and will be available on the next day only.

Steps to take

1. Check whether the site collection that is missing data has been backed up and restored (especially if other administrators in your Company create backups).
2. If it indeed has been backed up and restored not later than yesterday, simply wait until the next day – the Preliminary Data Preparation timer job needs to complete its cycle. After that, the new data based on the new ID will be available in the reports.
   Note: the old data will still remain inaccessible.
3. If the new data are now displayed, but you wish the old data to be displayed as well, please contact HarePoint Support. We will retrieve the old and the new IDs and provide a SQL script that will correctly substitute all instances of the old ID in the HarePoint Analytics Main Database to a new ID.
4. In case no data appeared on the next day/after Preliminary Data Preparation job completed successfully, please contact HarePoint Support for further investigation.

Data in all the reports (including the farm level reports) are no longer displayed

Symptoms

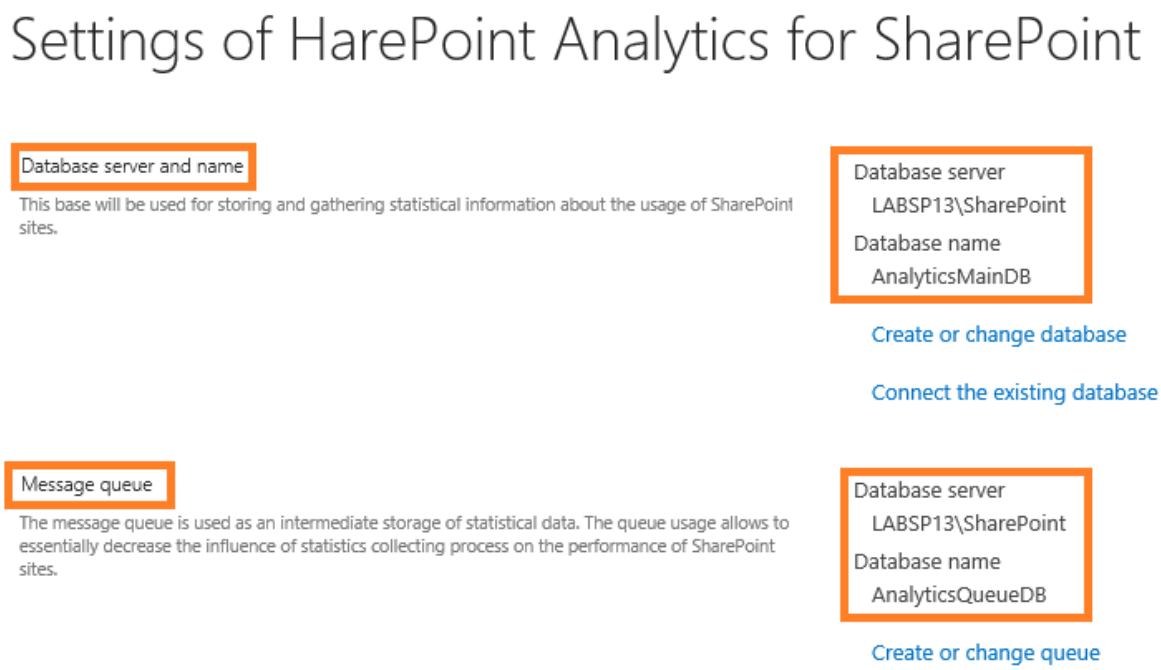
Absolutely all reports (including Farm reports in Central Administration) contain no data, even if a large date range is selected. These data have been available earlier.

Explanation

This situation occurs when there are issues with access to the SQL server, or with the SQL server itself. HarePoint Analytics is unable to retrieve data, which results in all reports empty.

Steps to take

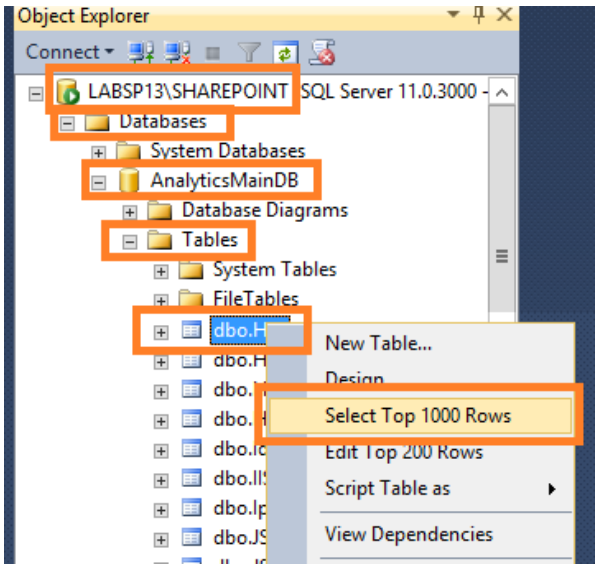
1. Open **HarePoint Analytics Settings** to check whether the databases are attached:



Re-attach the Main Database if it is not configured.

Note: Queue Database can only be created from scratch, you cannot re-attach an existing Queue Database.

2. If the database settings look correct (no red warning messages stating *the database or SQL server instance not found*), open **SQL Management Studio** and check whether you can connect to the indicated server instance/databases, as well as view the content of the tables (simply by running a **SELECT TOP 1000 ROWS** command from the context menu of the database table).



Inspect the **SQL server logs** for more details if you notice any signs of database corruption.

No data in reports for past few days (backlog data)

Symptoms

The data for past few days are missing in the reports, while older data are displayed properly.

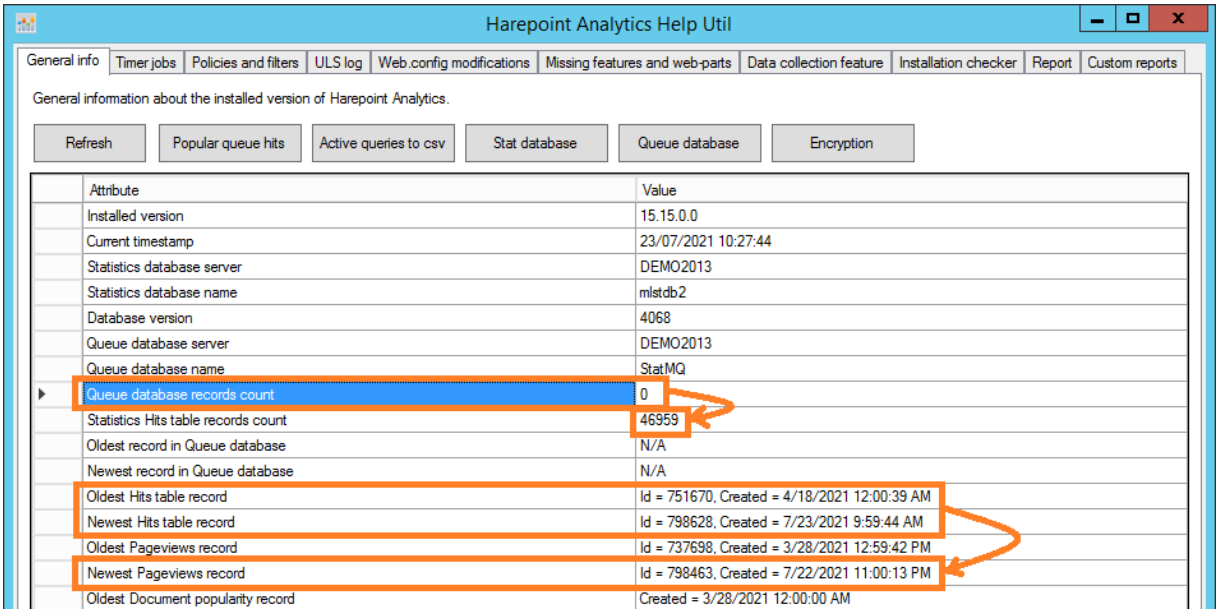
Explanation

The data for the missing days have been collected, but have not been processed yet. In other words, you have a **backlog of data**. The **reasons** for that can be:

1. HarePoint Analytics **timer jobs are not configured optimally**, so the proper timer jobs interaction is affected.
2. Either the **amount of collected data is huge,** or the **performance of the SQL server is not sufficient** to process the collected data in a timely way.

Steps to take

1. Open HarePoint Analytics Utility, **General Info** tab.
   On the screenshot you can see how data processing is reflected in HarePoint Analytics Utility (also refer to Data Collection and Processing Diagram):



a) **Oldest record in Queue database**, **Newest record in Queue database** and **Newest Hits table record** – all should be of the **current day**.

- If the data for the current day are in the **Hits table** – they will appear in reports after the **Preliminary Data Preparation** job completes its next cycle. See below for more details regarding this timer job.
- If the data for the current day are **only in the Queue Database** (but not in the Hits table) – the Processor of Message Queue timer job needs to run first to move them to Main Database Hits table, then the Preliminary **Data Preparation** job needs to complete its cycle. Only after that will the data for the current day appear in the reports. See below for more details regarding these timer jobs.

Note: If **only one day** in the reports **is missing**, check the settings of the **Preliminary Data Preparation** job - **Prepare data without disabling of message queue job** checkbox. When it

is **checked**, the data for the last day **will not be processed** (see Preliminary Data Preparation, Optimization for more details).

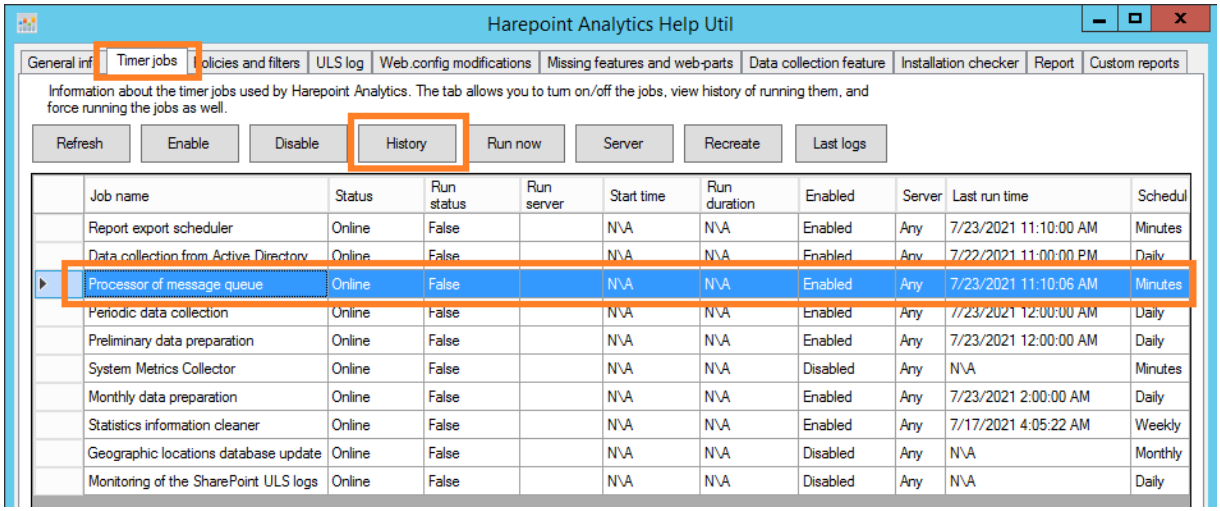
b) **Queue database records count** shows the amount of collected hits since the last time that the Processor of Message Queue timer job ran (seen on the **Timer jobs** tab of the Utility). This should have a reasonable value, around **Estimated Amount of Hits per Day/288** (for a default 5-minute schedule of Processor of Message Queue timer job).
If the **value is too high**, check if the **Processor of Message Queue** timer job is running periodically (see below for more details). If it is, you may need to consider setting up Data collection filters to filter out the excessive and unnecessary data that are currently tracked.

c) **License status** should be **Registered** or **Trial**. If it indicates **Trial Expired**, all the collected data will remain in Queue Database, despite all timer jobs executing normally. No new data will appear in the reports.
However, the **data collection is not yet interrupted**, and data will not be lost: after you provide a license key (in Central Administration – Monitoring – HarePoint Analytics Settings – Licensing) the data processing will be restored and the data will appear in the reports on the next day.

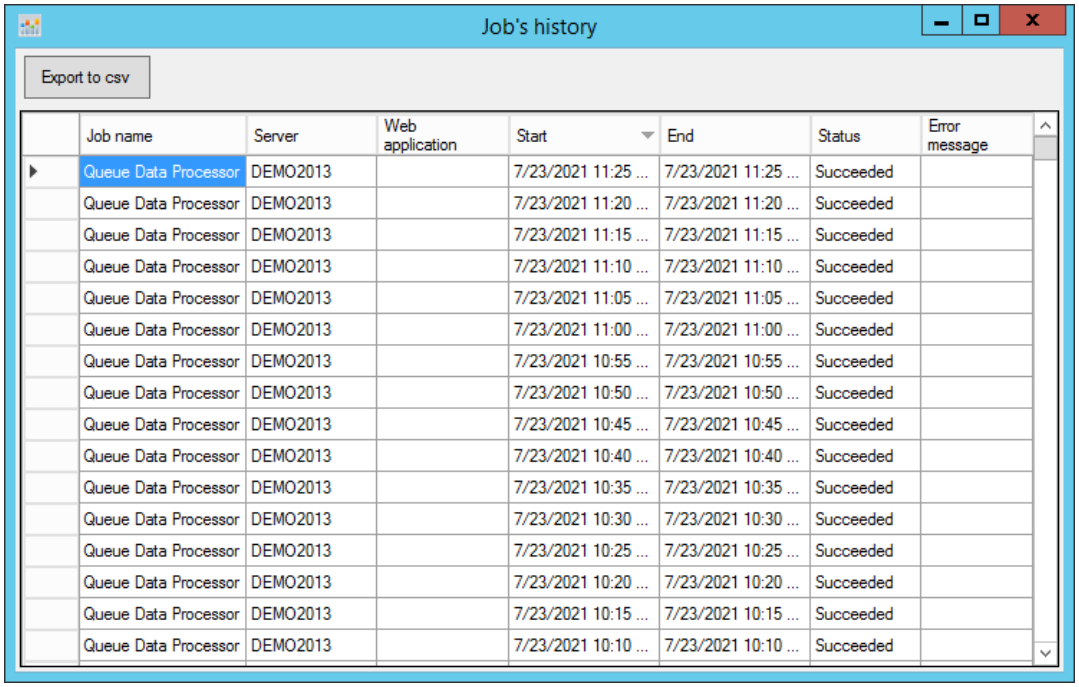
Note: If HarePoint Analytics has detected **more users than allowed** according to the license key(s) entered, **data processing will continue to work normally**, without any limitations, and HarePoint Analytics will still report for **all users**. Only a warning message in reports is displayed.

2. In the Utility, switch to **Timer Jobs** tab.

a) Click on **Processor of Message Queue** timer job.
Make sure it is **Enabled**.

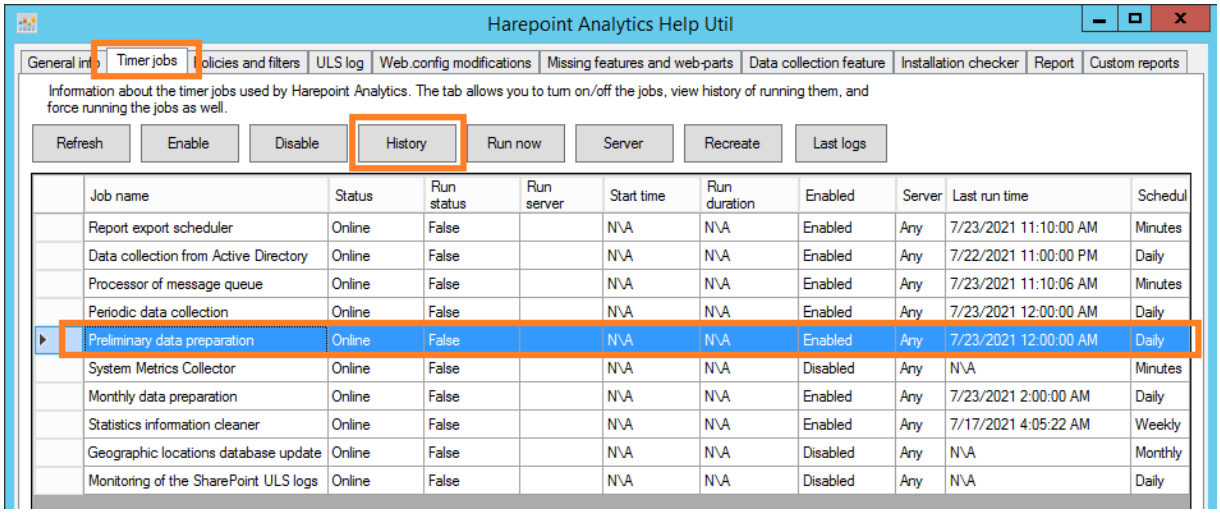


Check **Schedule** (should be **Minutes**) and **Last run time** (should be not longer than 10 minutes ago from now, except when Preliminary Data Preparation is running).
Click **History** to review the previous runs of this job:



Make sure it's running every 5-10 minutes (or as set in its schedule), and the **Status** is **Succeeded** for every launch.
Normally, it should take **few minutes** every time to complete.
Longer times may point either to **poor SQL Server performance** (please refer to the HarePoint Analytics Administrator Guide regarding technical requirements for SQL server), or to a **huge amount of collected data** (check if you can deactivate the HarePoint Analytics feature on some site collections to reduce the amount of data being collected; or set up Data collection filters to filter out the excessive and unnecessary data that are collected).
In case if the timer job **fails** or seems to be **stuck with no progress**, review the **error message** along with the **related ULS log messages** (you can use the ULS log tab in the Utility, or a third-party ULS log viewer software). If necessary, contact HarePoint Support and provide that information.

b) Click on **Preliminary Data Preparation** timer job.
Make sure it is **Enabled**.



Check **Schedule** (should be **Daily**) and **Last run time.**
By default, this job will start **around 12AM**. You can use the button "**Run now**" (or the same in HarePoint Analytics Settings, or SharePoint Timer job definitions) to force the execution of this timer job to see the data earlier, but take into account that it can put **substantial load on the SQL server**, so it is **not recommended** during working hours in a production environment.

Click **History** button to review the previous runs of this job.
Make sure it is running every day, and that the **Status** is **Succeeded** for every launch.
It can take **several hours** for this timer job to complete.
Longer times may point either to **poor SQL Server performance** (please refer to the HarePoint Analytics Administrator Guide regarding technical requirements for the SQL server), or to **huge amount of collected data** (check if you can deactivate the HarePoint Analytics feature on some site collections to reduce the amount of data being collected or set up Data collection filters to filter out the excessive unnecessary data that are tracked).

If the **Run Status** in the Utility indicates **True**, it means this timer job is **running at the moment** (click **Refresh** button to see actual information). You can review its actual progress in SharePoint **Check job status** page – refer to Preliminary Data Preparation, Tracking the Status.
If the timer job **fails** or seems to be **stuck with no progress**, review the **error message** along with **related ULS log messages** (you can use the ULS log tab in the Utility, or a third-party ULS log viewer software). If necessary, contact HarePoint Support and provide that information.

Certain activity/documents/list items are not tracked

Symptoms

There is some user activity that you know for sure took place, but you can't find it in HarePoint Analytics reports. The **site collection** in question has the HarePoint Analytics **feature** enabled.

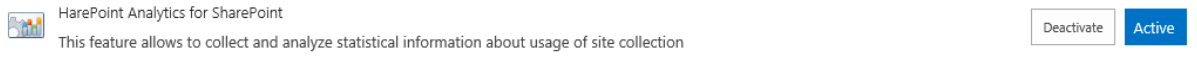
Explanation

The possible reasons are:

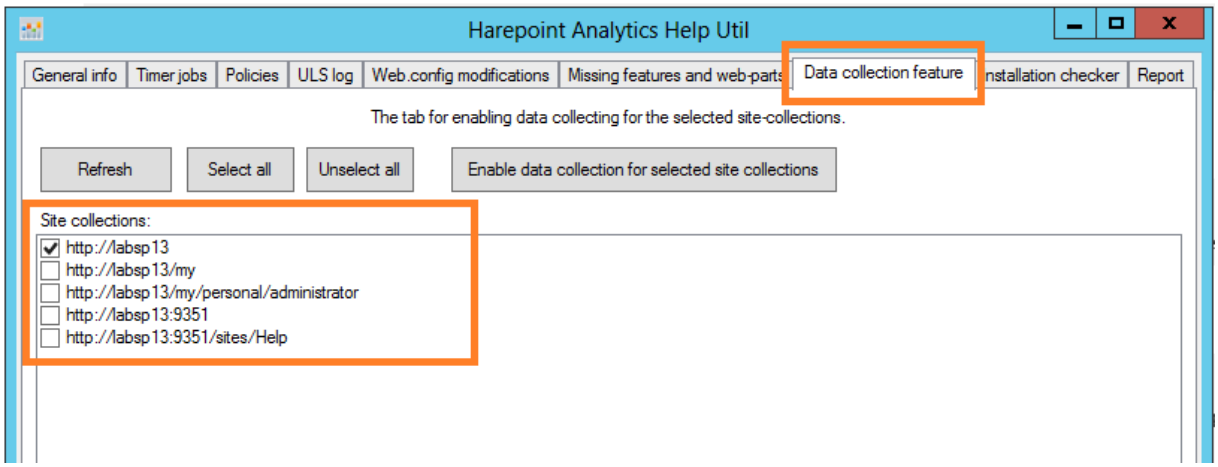
1. There are **data collection filters** that prevent these events from being collected. This can happen inadvertently when you create a filter for something, but it is not narrow enough and filters out needed data as well. The data collection filters can be quite complex, some **inheriting** from top level, some being **assigned explicitly** for the given SharePoint level (web application, site collection, site, document library/list). The best practice is to **check the actual data collection filters settings for the given level of SharePoint**, especially if they include the use of **regular expressions**.
2. HarePoint Analytics is **not a real-time monitoring tool**, and data in reports appear only on the **next day**.
3. Note that some of the events **technically cannot be tracked** by the HarePoint Analytics data collection mechanism that is based on an HTTP module. Examples include custom web parts, links or documents located outside of SharePoint. In some cases, events (e.g. play/pause clicks on a video player) can be tracked by using a **special JavaScript** (please refer to **HarePoint Analytics Administrator Guide - Adding tracker for Java Script events** for more details on setting up JavaScript). All the data collected by JavaScript will appear in **Events** and **Events Popularity** reports only.

Steps to take

1. Make sure that **HarePoint Analytics feature is enabled** on that site collection. You can do it either from SharePoint, or from the HarePoint Analytics Utility:
   In SharePoint go to **Site Settings – Site Collection Administration –Site Collection features – HarePoint Analytics for SharePoint**:



   Or, in the HarePoint Analytics **Utility** go to the **Data collection feature** tab and check whether it is enabled for the required site collection:



2. Normally, new data appear in reports on the next day. Make sure the events you are missing took place **earlier than the latest processed data** available in the reports.
   The easiest way to is to check the **Visit Trends** report to **find out the date of the latest data available in the reports**. Make sure your events took place earlier than that date.

3. Check the **data collection filters** for the required SharePoint level. E.g. if you are interested in **hits** – check the data collection filter rules for that **site**. If you're interested in tracking **document usage** – check the data collection filter rules for that **document library**, and so on.
   Please refer to the How to set up data collection filters paragraph for more information.

   Note: If you decide to test data collection filters by temporarily disabling them, do this **with caution**, especially if these filters were set up by another administrator, as this may result in a huge portion of data being collected that can cause HarePoint Analytics timer jobs to work for a long time, and also fill the reports with unwanted data.

4. You can **query the HarePoint Analytics SQL Databases** to determine if the events are tracked or not:

   How to use Queue Database queries:

   a. generate the same event again
   b. you will have less than 5 minutes to run the query, as by default the Queue Database is cleaned up every 5 minutes by the Processor of Message Queue job.
   c. if the event is not tracked – it's being filtered out by data collection filters.

   Queue Database query to detect if **link is tracked**:

```
select * from MLSTQueue where CAST(body as nvarchar(max)) like
'%url="<full url path>"%'
```

   Queue Database query to detect if **Search request is tracked**:

```
select * from MLSTQueue where CAST(body as nvarchar(max)) like
'%<searchEvent>%'
```

   How to use Main Database queries:

   a. generate the same event again
   b. wait until the Processor of message queue job completes its next cycle
   c. now you can run the queries
   d. if the event is not tracked – it's being filtered out by data collection filters.
   e. if the event is tracked – it should appear in reports after the Preliminary Data Preparation job completes its next cycle.

   Main Database query to detect if **link** is tracked:

```
select * from Hits h
left join Urls u on h.Url = u.Id
where u.Url like '%<part ot full url>%'
```

   Main Database query to detect if **list item/document** is tracked:

```
select * from Audit a
left join SPListItemsVersions spliv on a.Id = spliv.Id
where spliv.Name like '%<list item name>%'
```

No data in "Visits by Countries" report

Symptoms

The site or site collection report **Visits by Countries** displays no data.

Explanation

This report has **two modes** to detect countries:

- Based on **IP addresses** of the users (default)
- Based on a **specific field from User Profile Service** that contains country information.

Note: If you have **Active Directory – User Profile Service synchronization** established, you can use the respective AD fields for that purpose as well.

Steps to take

1. Run the **Geographic locations database update** timer job. It will load the necessary country information from a third-party provider.
   Note: Both detection modes require that the database be downloaded at least once!
   Note: If your WFE servers **don't have access to the Internet** to download the database (e.g. due to security concerns), please **contact HarePoint Support** to obtain the **offline copy** of the database with the **instructions** how to apply it.

2. If you are using detection by User Profile field, make sure it contains the country data in the "**ISO 3166-1 alpha-2**" format **(two characters** for country codes), and not just the full country names or other unneeded data.

3. Please check the following tables in the **Main Analytics** database to confirm that they contain data:
   - **SPUsersProfileVersions** (only if you are using detection by User Profile field)
   - **LocationsInfo** (contains downloaded country codes)

   If they do, then check the other tables:
   - **ReportGeolocationSite**
   - **ReportGeolocationWeb**

   The data in the latter two tables are added by the **Preliminary Data Preparation** job and these data are directly used to build **Visits by Countries** reports. Therefore, if you have discovered any issues and made necessary changes, be sure to **wait until the next cycle of the Preliminary Data Preparation job completes** to see the updates in **Visits by Countries**.

HarePoint Analytics Utility

Introduction

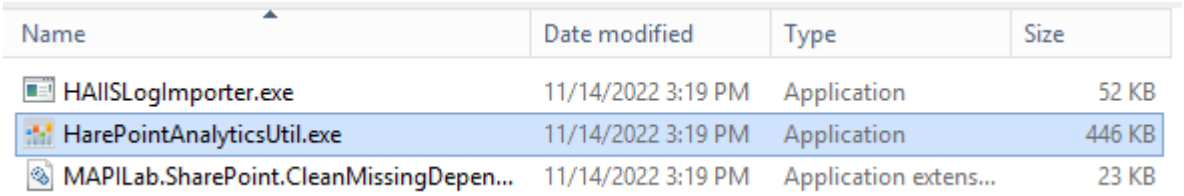
In order to simplify maintenance and troubleshooting of HarePoint Analytics, we have developed a special Utility (**HarePointAnalyticsUtil.exe**). This Utility collects various information from SharePoint and from HarePoint Analytics and represents it in a convenient user interface so it is possible to review and compare key parameters side-by-side. Another advantage is that the Utility allows management of some of the important settings and features of HarePoint Analytics without the need to explore the SharePoint interface extensively. Finally, the Utility can verify the key components in SharePoint and in HarePoint Analytics installation, and fix the issues if any, when possible.

How to start the Utility

You can find this Utility in the distributive package, in **Analytics Tools** and Analytics **Tools2013** folder, depending on your SharePoint edition:

SharePoint SE/2019/2016:
<path_to_distributive>\Analytics Tools
*(*or *<path_to_distributive>\Analytics Tools2016* in older distributives of HarePoint Analytics*)*

SharePoint 2013:
<path_to_distributive>\Analytics Tools2013



This Utility should be launched on **any of WFE servers as Farm Administrator**.

The Utility is **portable** and **no installation required**.

For more details on **command-line interface** (CLI) of the Utility, please refer to Command line interface paragraph.

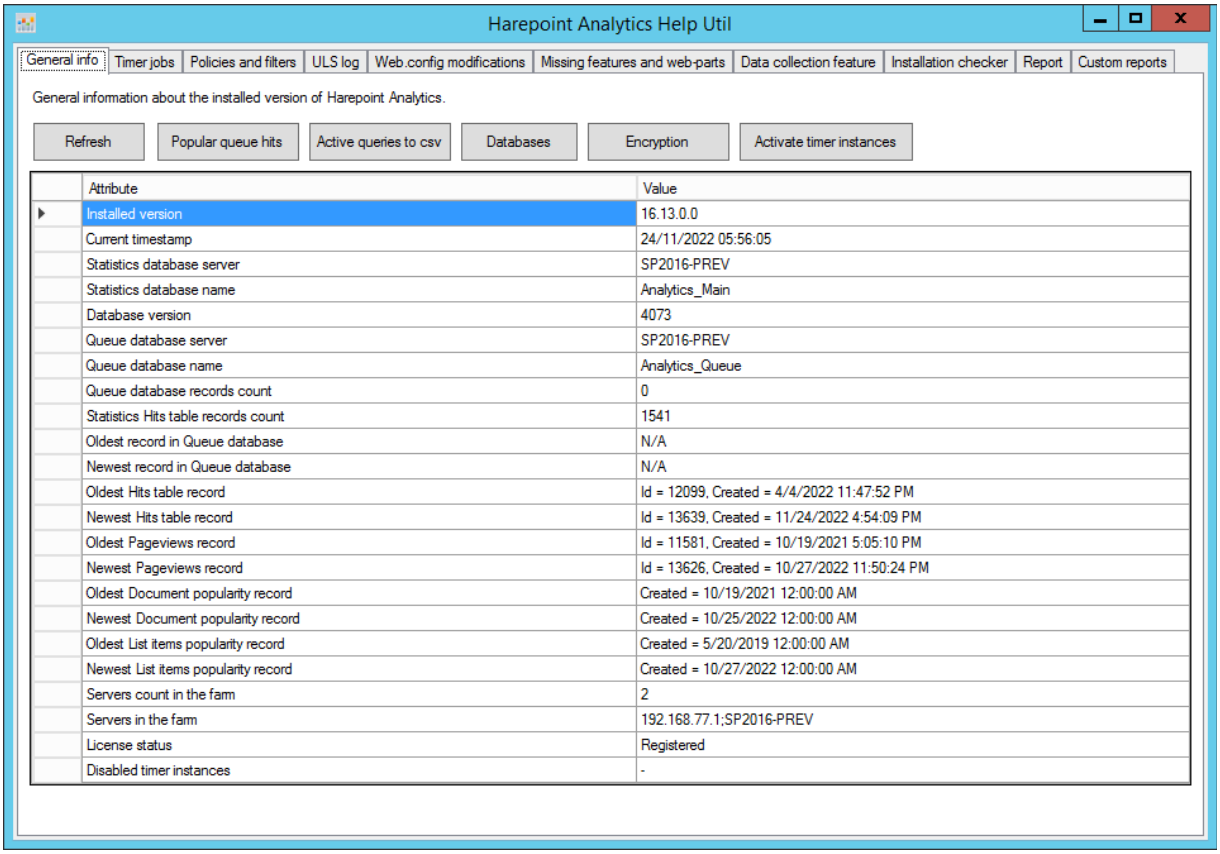
Precaution

Some of the management capabilities available in the Utility, if improperly used, can affect or even disrupt the operation of HarePoint Analytics or SharePoint. Perform these actions only if you have a complete understanding of what the action will do.
Consult HarePoint Support in case if you have any questions.

Utility description

General Info tab

General Info tab shows a short but essential summary of the installed HarePoint Analytics:



Attribute	Value
Installed version	16.13.0.0
Current timestamp	24/11/2022 05:56:05
Statistics database server	SP2016-PREV
Statistics database name	Analytics_Main
Database version	4073
Queue database server	SP2016-PREV
Queue database name	Analytics_Queue
Queue database records count	0
Statistics Hits table records count	1541
Oldest record in Queue database	N/A
Newest record in Queue database	N/A
Oldest Hits table record	Id = 12099, Created = 4/4/2022 11:47:52 PM
Newest Hits table record	Id = 13639, Created = 11/24/2022 4:54:09 PM
Oldest Pageviews record	Id = 11581, Created = 10/19/2021 5:05:10 PM
Newest Pageviews record	Id = 13626, Created = 10/27/2022 11:50:24 PM
Oldest Document popularity record	Created = 10/19/2021 12:00:00 AM
Newest Document popularity record	Created = 10/25/2022 12:00:00 AM
Oldest List items popularity record	Created = 5/20/2019 12:00:00 AM
Newest List items popularity record	Created = 10/27/2022 12:00:00 AM
Servers count in the farm	2
Servers in the farm	192.168.77.1;SP2016-PREV
License status	Registered
Disabled timer instances	-

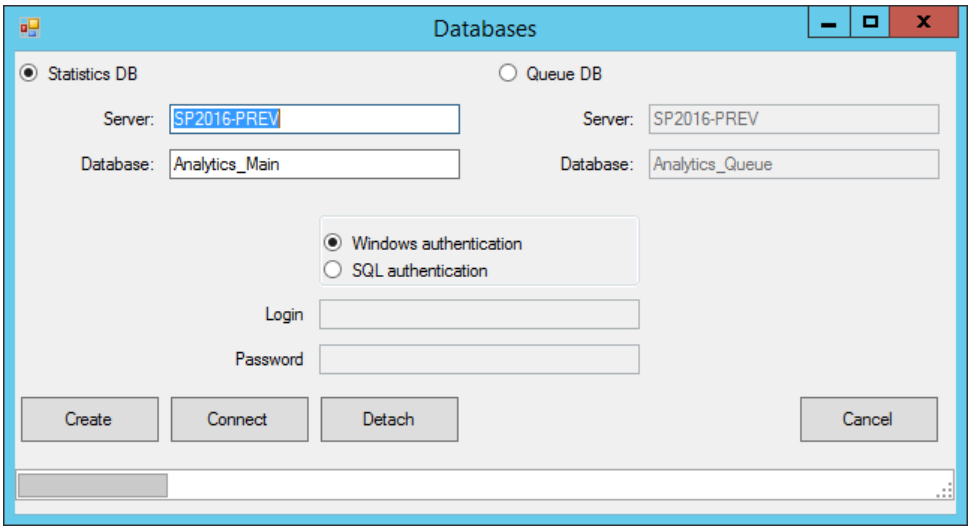
Buttons:

Refresh button – used to retrieve and display the actual data on this tab.

Popular queue hits button – used to determine the most frequent user activity received by HarePoint Analytics. This is especially useful to determine what data collection filters should be used to filter out the unwanted and unnecessary data. This option requires **at least 3,000 records** in the Queue Database to ensure statistically correct data are displayed for the most popular hits.
Output can be exported to CSV.

Active queries to CSV button – creates a CSV file containing all active SQL transactions details from the SQL instance used by HarePoint Analytics.

Databases button – using this button you can manage the databases for HarePoint Analytics: **create** new databases, **change** databases, and **detach** databases:



Encryption button – using this button you can encrypt the **existing** data in statistical database, either for a specific user, or for all users.
Important note: this operation is **not reversible**, so it is **not possible to restore** the users' personal data once this operation has been performed!
Technically, it is an equivalent to command **stsadm -o mlstencryptuserinfo** (see Administrator Guide for more details). Running this operation on a large database can take some time – consider running this operation during the non-working hours. Make sure Preliminary Data Preparation timer job is not running at that time.
Typically, this operation is performed after enabling the **encryptuserinfo** policy that enables encryption for the **newly collected** data (see Administrator Guide for more details).

Activate timer instances – used to activate SharePoint Timer Service instances, if disabled instances were detected on some servers – please refer to **Disabled timer instances** table value description for more details.

Table values:

Installed version – The currently installed version (based on HarePoint Analytics assembly version on this specific server). The latest version can be found at https://www.harepoint.com/Downloads

Current timestamp – the current date and time, as of which the data are displayed. Click **Refresh** button to re-read data.

Statistics Database server – the name of SQL server that hosts Main Database of HarePoint Analytics.

Statistics database name – the name of the Main Database of HarePoint Analytics.

Database version – the internal parameter of HarePoint Analytics, defining the version of the main database. Can also be seen in SQL Management Studio in advanced properties of the database.

Queue database server – the name of SQL server that hosts the Queue Database of HarePoint Analytics.

Queue database name – the name of the Queue Database of HarePoint Analytics.

Queue database records count – the number of records currently stored in the Queue Database. By default, the records from Queue Database are moved to the Main Database every 5 minutes. Click **Refresh** to see the actual value.

Statistics Hits table records count – the number of records currently stored in the **dbo.Hits** table of the **Main Database**. In this table, the **unprocessed (raw) data** are stored; they are not used directly to build reports. By default, the data older than 90 days are removed from this table. Click **Refresh** to see the actual value.

Oldest record in Queue Database – indicates the ID and timestamp of the oldest record in Queue Database at the current time. Click **Refresh** to see the latest values. With the default settings, the latest value should be no more than 5 minutes earlier than the current time.

Newest record in Queue Database – indicates the ID and timestamp of the newest record in Queue Database. Click **Refresh** to see the most recent values. The data are delivered to the Queue Database on the fly from the HTTP module that tracks user activity.

Oldest Hits table record – indicates the ID and timestamp of the oldest record in **dbo.Hits** table of the Main Database. Click **Refresh** to see the most recent values. By default, data older than 90 days are removed from this table.

Newest Hits table record – indicates the ID and timestamp of the newest record in **dbo.Hits** table of the Main Database. Click **Refresh** to see the latest values. The records in this table are delivered from the Queue Database every 5 minutes (by default). In this table, the **unprocessed (raw) data** are stored; they are not used directly to build reports.

Oldest Pageviews record – indicates the ID and timestamp of the oldest record in Pageviews table of the Main database. Click **Refresh** to see the most recent values.

Newest Pageviews record – indicates the ID and timestamp of the newest record in Pageviews table of the Main database. Click **Refresh** to see the most recent values. These data are used in **Content and Traffic** category of reports.

Oldest Document popularity record – indicates the ID and timestamp of the oldest record in Documents table of the Main database. Click **Refresh** to see the most recent values.

Newest Document popularity record – indicates the ID and timestamp of the newest record in Documents table of the Main database. Click **Refresh** to see the most recent values. These data are used in **Documents** category of reports.

Oldest List items popularity record – indicates the ID and timestamp of the oldest record in List items table of the Main database. Click **Refresh** to see the most recent values.

Newest List items popularity record – indicates the ID and timestamp of the newest record in List items table of the Main database. Click **Refresh** to see the most recent values. These data are used in **List items** category of reports.

Servers count in the farm – shows how many servers are in the farm have been detected. See the next parameter (**Servers in the farm**) for more details.

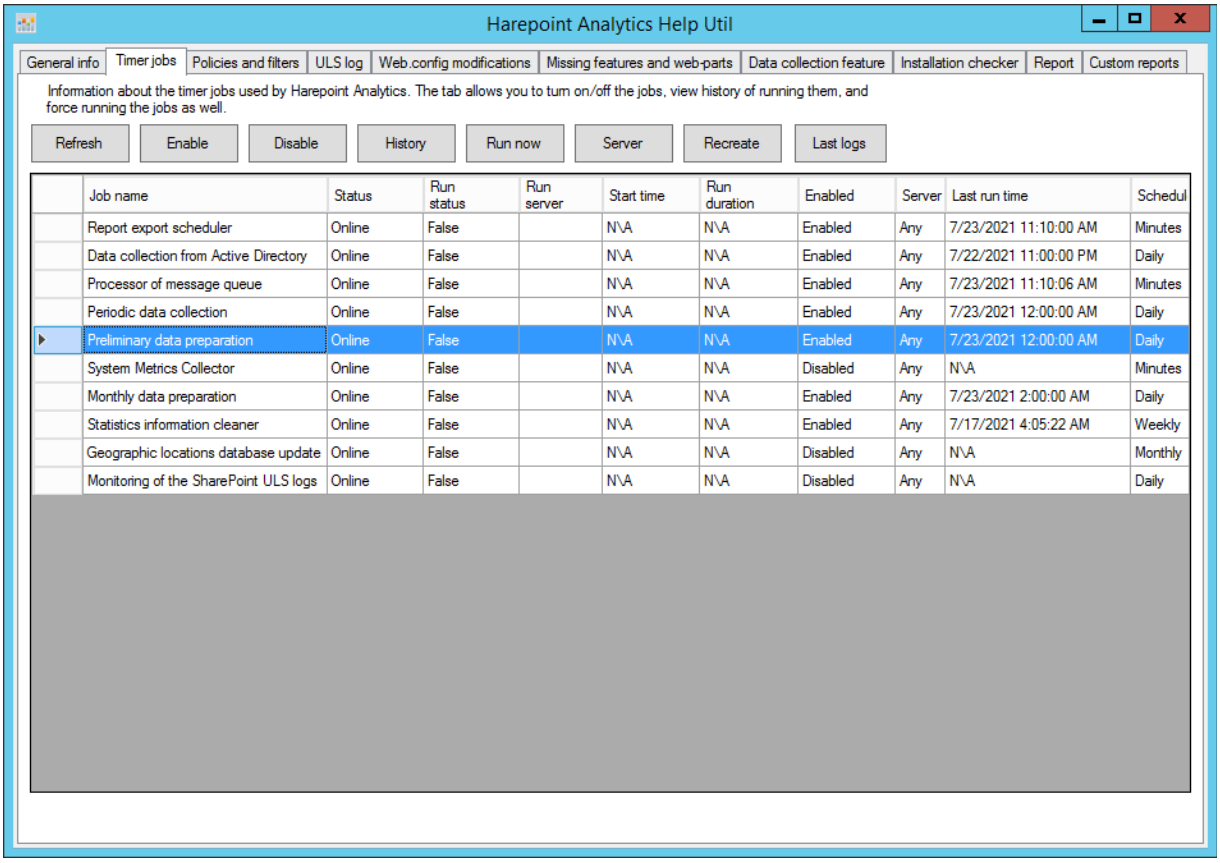
Servers in the farm – enumerates the servers in this farm. This includes (but is not limited to) Web Front-End servers, Application Servers, SQL Servers. **Missing Web Front-End servers** will likely cause some user activity not being tracked! More detailed information regarding the servers in the farm can be obtained from **Central Administration – System Settings – Manage Servers in the Farm**

License status – shows the license status of HarePoint Analytics. The Product is fully functional if **Registered** or **Trial** is indicated. If **Trial Expired** is indicated, data collection continues (Queue Database grows), but data processing is suspended. It is not recommended to remain in this state for a long time. The license keys are managed in HarePoint Analytics Settings: **Central Administration – Monitoring – HarePoint Analytics Settings – Licensing**.

Disabled timer instances – checks if all Timer Service **instances** are online. While the SharePoint Timer Service (owstimer.exe) itself can be running in Services.msc, its internal instances may be offline causing all timer jobs on SharePoint fail to run, including HarePoint Analytics jobs and administrative jobs (which in particular deploy and retract solution components).
For more details, refer to this article: https://support.microsoft.com/en-us/help/2616609/administrative-timer-jobs-not-running-after-upgrade
If disabled timer instances were detected, you can try activating them using **Activate timer instances** button**.**

Timer jobs tab

On this tab, information about the timer jobs used by HarePoint Analytics is displayed. It is also possible to manage timer jobs from here: enable or disable jobs, force immediate running, and perform a few other tasks.



The timer job information is displayed in a **table**. The **columns** are:

Job name – the name of the timer job. **Note:** timer jobs may have different names in Central Administration – Monitoring – Job definitions. See the Timer jobs chapter for more details.

Run status – indicates whether the timer job is currently running (**True**) or not (**False**). Click **Refresh** to see the actual status. The **current progress** of timer jobs can be monitored in **Central Administration – Monitoring – Check job status.** See the Timer jobs chapter for more details.

Run server – if the timer job is **running at the moment**, the server name where this job is running will be displayed here. **Note:** Some of the timer jobs actually initiate procedures on the SQL server, so the processing is performed on a SQL server in this case. See Timer jobs chapter for more details.

Enabled – shows the current status of the timer job: **Enabled** or **Disabled**. **Note: Processor of Message Queue** job can be disabled automatically if **Preliminary Data Preparation** job is running. See Timer Jobs - Preliminary Data Preparation for more details.

Server – shows whether the timer job can run on **any** Web Front-End server, as determined by SharePoint (default), or if it is explicitly assigned to **a specific server** in HarePoint Analytics Settings. **Note:** for some timer jobs, it does not make any difference on what WFE server they are running, since these jobs simply initiate SQL procedures. See Timer jobs chapter for more details.

Last run time – shows when this timer job **started** the last time. Click the **History** button to get detailed information on previous runs (Start and End times).

Schedule – shows what scheduling is used for this job. An incorrect schedule can seriously affect the operation of HarePoint Analytics. See the Timer jobs chapter for more details on the **recommended schedule** for each timer job.

The **buttons** on this tab are:

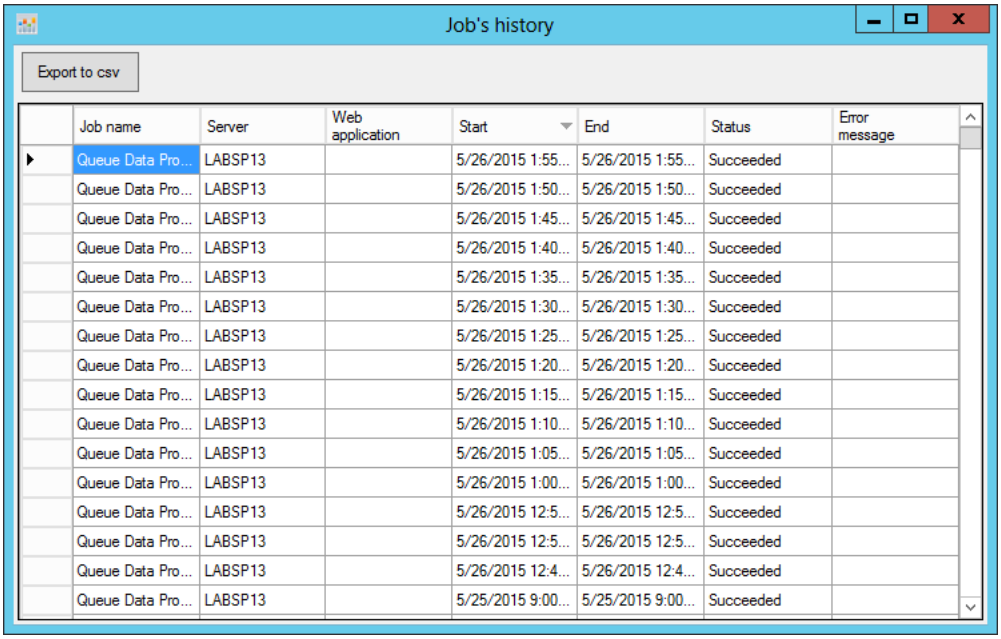
Refresh – used to retrieve and display the actual data on this tab.

Enable – enables the selected timer job. **Note:** the job will not run immediately, but according to its schedule.

Disable – disables the selected timer job.

History – shows detailed information on completed instances of running the selected timer job. This information can be **exported to CSV**.

> **Useful Hint:** you can **select multiple timer jobs** by holding down the **Shift** or **Ctrl** button. In this case, it will show you the **joint history** for these jobs in one list.



Run now – forces the selected timer job to run immediately.
Important note: some timer jobs are resource consuming, so use this option with **caution** on a production environment! Please refer to the Timer jobs chapter for more details on the consumption of the WFE and SQL server resources by each job.

Recreate – recreates the selected timer job in SharePoint. Should be used **only when there are issues with the timer job definition**, such as:

- settings for this job in SharePoint **Job definitions** are not accessible (blank or error out)
- it's not possible to enable or disable the job (errors out and the current status remains)

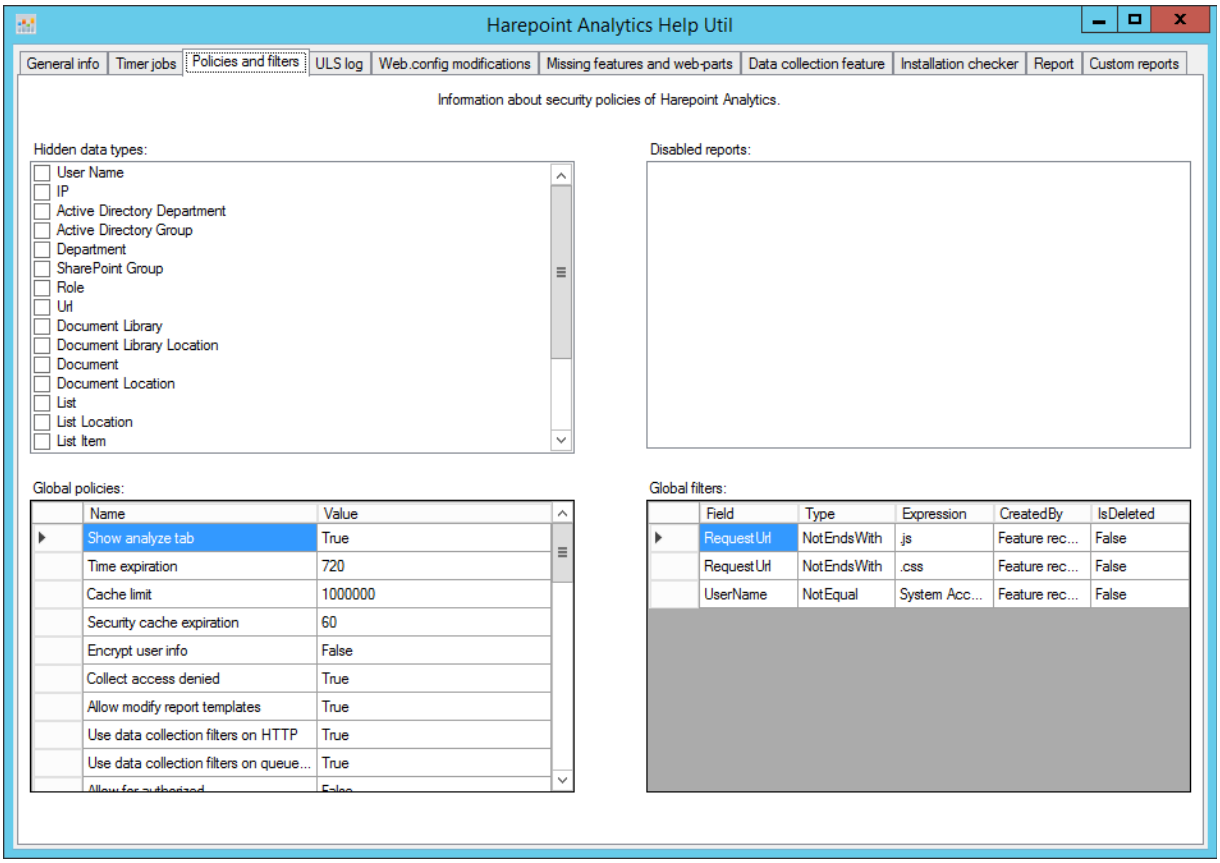
- SQL databases connection settings have been changed, but the timer job still attempts to use the old connection settings
- timer job wasn't properly created on some of WFE severs

We recommend that you consult with HarePoint Support if you have any concerns regarding the recreating timer jobs.

Last logs – Utility will pull the ULS log data that correspond to the latest timer job run and zip them, so that you can submit this zip file to HarePoint Support for analysis.

Policies tab

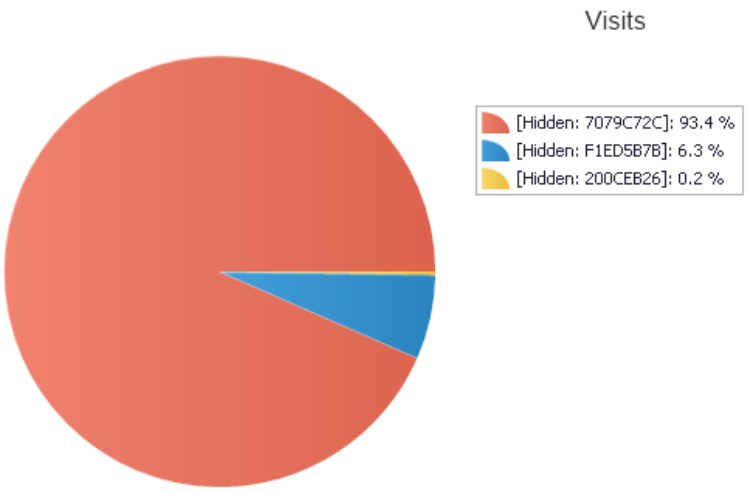
On this tab, information on Policies in HarePoint Analytics are displayed, such as Hidden Data Types, disabled reports, and global policies.



Hidden data types

The checked data types will be replaced with **[hidden:<UniqueID>]** in the reports.
In particular, this is frequently used to hide actual user names or IP addresses in the reports to comply with Company privacy requirements.

Example: Hidden usernames, **User activity** report:



Drag a column header here to group by that column

User name	Visits ↓	Pageviews
[Hidden: 7079C72C]	2805	2805
[Hidden: F1ED5B7B]	190	190
[Hidden: 200CEB26]	7	55
	Total: 3002	**Total: 3050**

Page 1 of 1 (3 items)

This setting cannot be changed from here, only from **Central Administration – Monitoring – HarePoint Analytics Settings – Statistics Policies – Select Data Types**.
Please refer to the **HarePoint Analytics Administrator Guide – Managing access to the reports – Managing global access permissions – Encryption of the data in reports** for more information on this policy**.**

Disabled reports

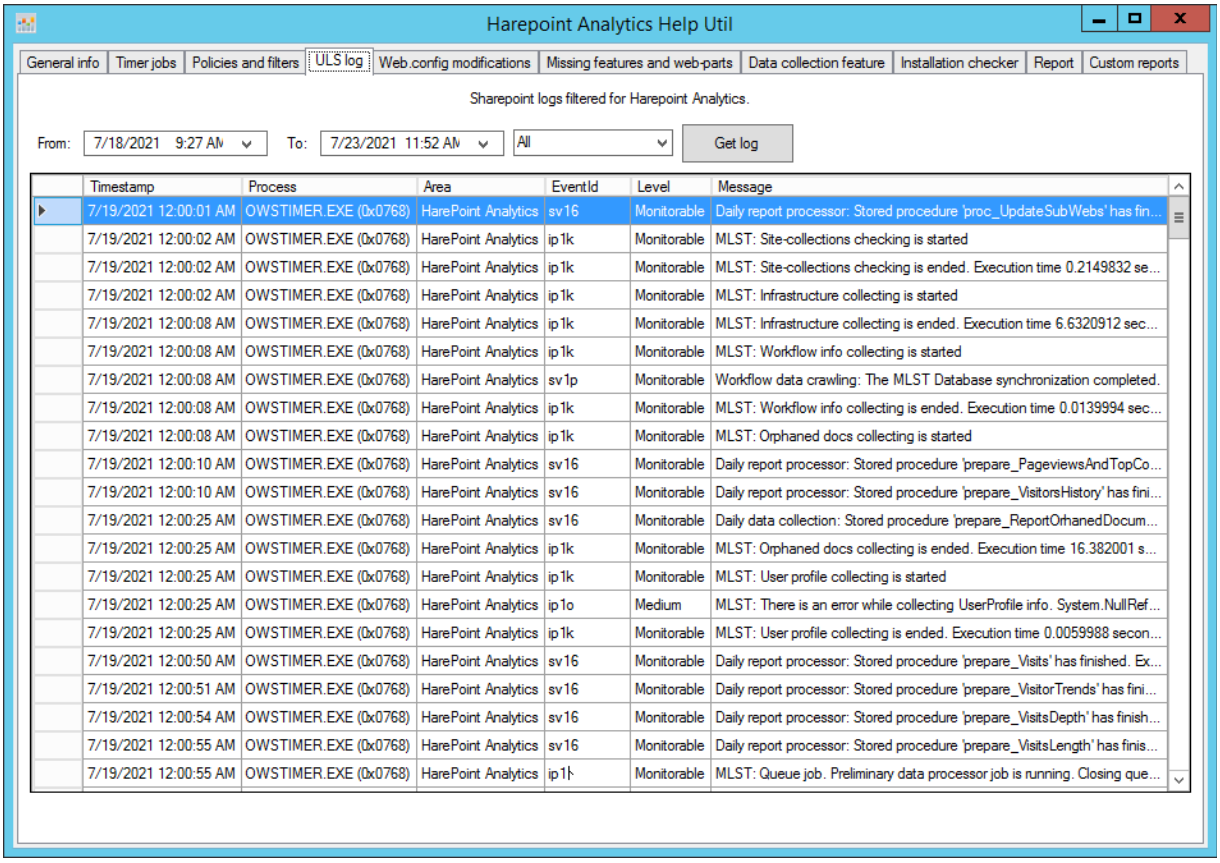
The links for the indicated reports will **not** be displayed in the left pane for **all** users. (Not accessible by the direct link as well).
This setting cannot be changed from here, only from **Central Administration – Monitoring – HarePoint Analytics Settings – Statistics Policies – Select Reports**. Note that normally **all reports** should be **unchecked** there.
Please refer to **HarePoint Analytics Administrator Guide – Managing access to the reports – Managing global access permissions – Removing reports from the list** for more information on this policy**.**

Global Policies

Indicates the current settings for the global policies of HarePoint Analytics.
The policies cannot be changed from here; they can **only be changed from a command line**, as described in **HarePoint Analytics Administrator Guide – Managing Global Policies**.

ULS log tab

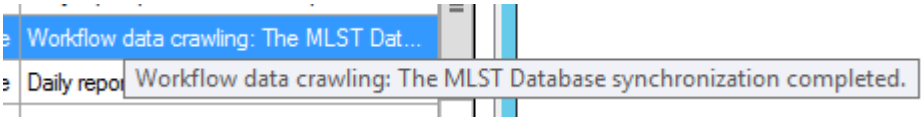
On this tab, you can review the ULS log messages from the selected date/time range that are **related to HarePoint Analytics.** It will aggregate messages **from all SharePoint servers** in the case of a multi-server farm.



Select **From** and **To** dates and times, as well as the **logging level**. Click **Get log** button.

Note: Do not select too large a period, as this may take an extremely long time to extract the information, especially on a multi-server farm. Start with a short date period to see how long it takes to merge data and display the list.

Hover the mouse pointer over the **Message** to see the complete text.



You **can highlight several lines** and then **copy and paste** them to another place.

See also: [Timer jobs](#) tab – **Last logs** button.

Web.config modifications tab

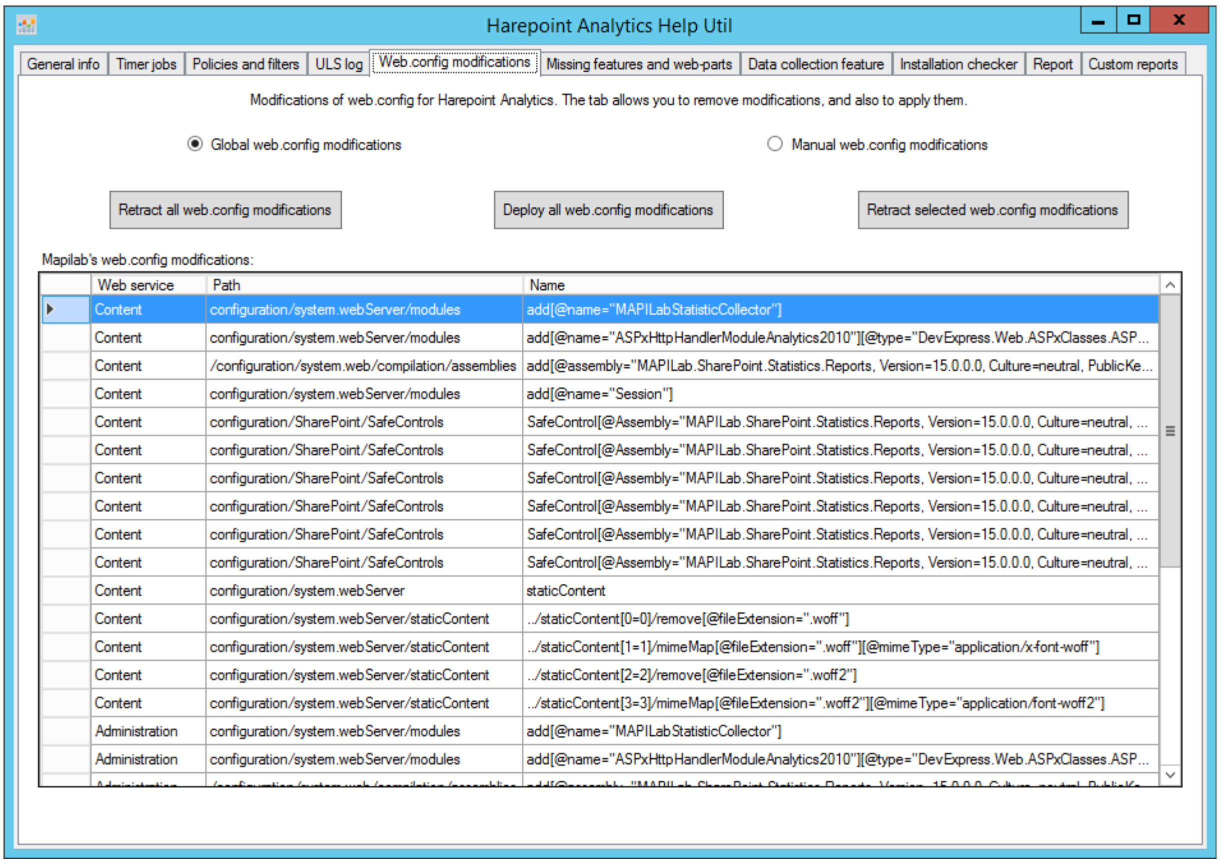
On this tab, you can manage the **web.config file** modifications. There are **two modes** available:

- **Global web.config modifications** – makes all necessary changes to SharePoint, so SharePoint automatically updates web.config files.
- **Manual web.config modifications** – in this mode, all changes are made **directly** to web.config files.

Use radio buttons to switch between these modes.

Important note: Improper use of the functionality available on this tab can make HarePoint Analytics inaccessible and non-functional. Be sure to consult [HarePoint Support]() in case if you have any doubts.

Global web.config modifications mode:



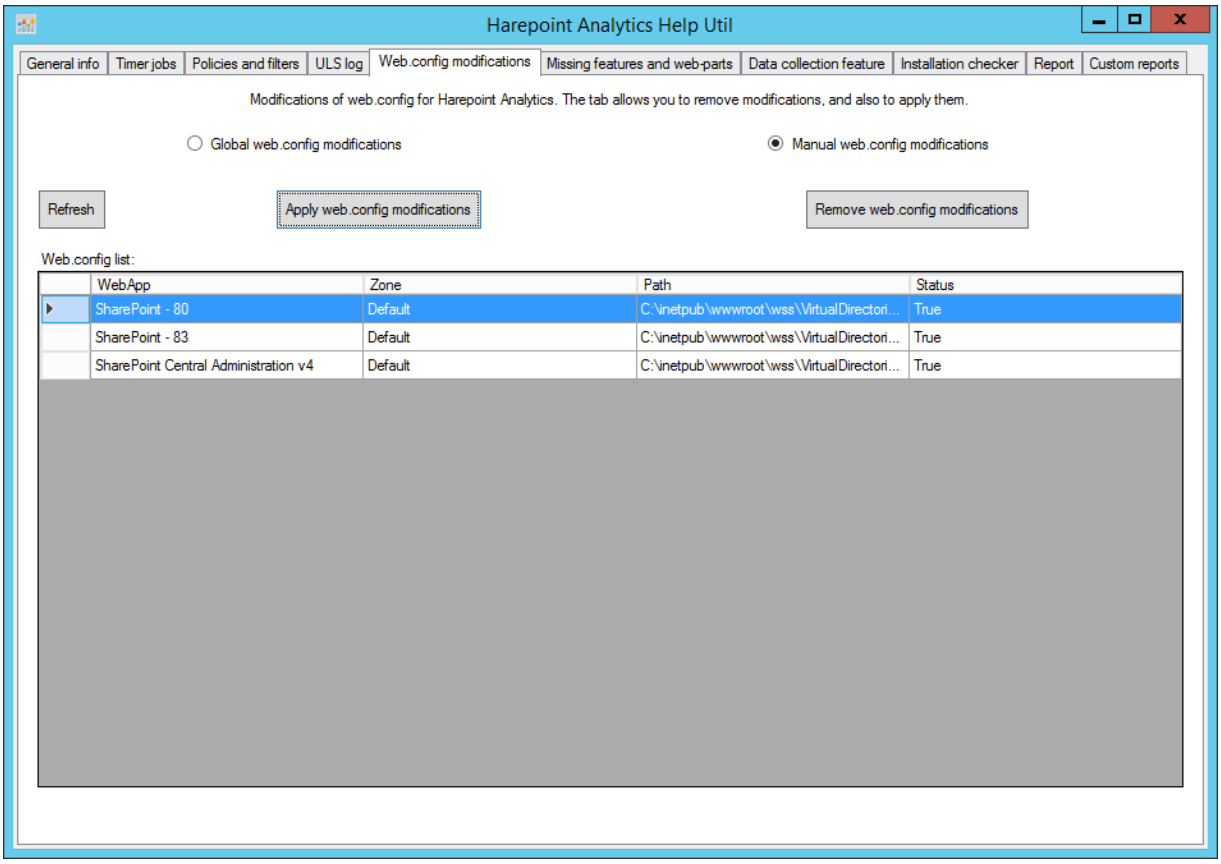
In this mode, all changes are made via SharePoint, so it is the **technically correct method** to do these changes. Web.config files are not touched directly.

You will see a **list of web.config modifications, added by HarePoint Analytics**.

Some third party Products can interfere with HarePoint Analytics if they add web.config modifications that conflict with those from HarePoint Analytics. In this case, you can select the conflicting web.config modifications from HarePoint Analytics and retract them using the **Retract selected web.config modifications** button.

You can also **Retract all web.config modifications** and **Deploy all web.config modifications** for troubleshooting purposes.

Manual web.config modifications mode:

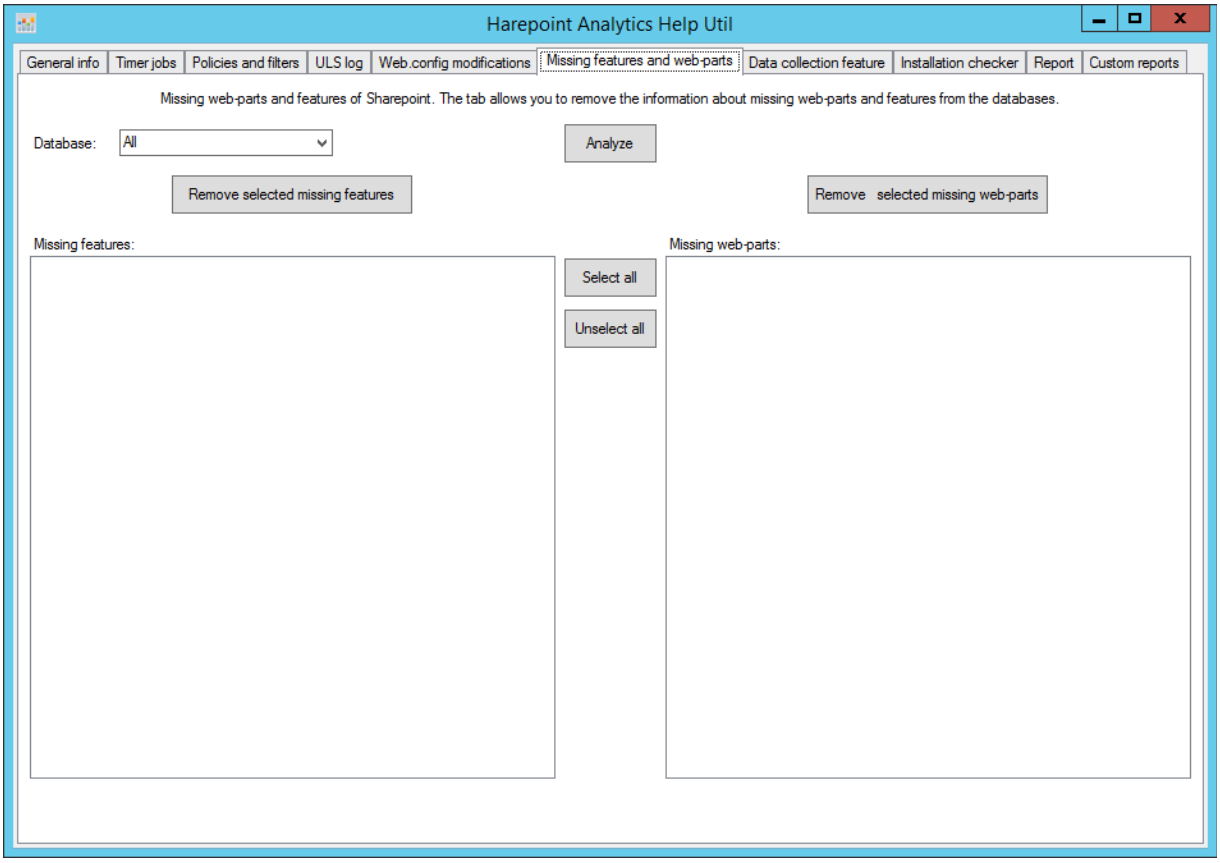


In this mode, all changes are made **directly to web.config files**. There are disadvantages to this method from a technical point of view (since normally the web.config file is regenerated by SharePoint upon certain conditions, so the changes made in this mode can be lost), but it is still useful for troubleshooting purposes.

The Utility displays a **list of web applications**. Click **Refresh** if necessary.
Select the required web application.
You can **Remove web.config modifications**, and **Apply web.config modifications** using the respective buttons.

Missing features and web-parts tab

On this tab, you can scan your SharePoint if there are any **missing features** or **missing web-parts**. These are the features or web-parts that are referenced in the SharePoint Content Database, but for which there are no DLLs, or vice versa. The missing features or missing web-parts can cause some issues in SharePoint, and in HarePoint Analytics in particular.



Select the Content Database from the drop-down list, or select **All**. Click **Analyze**.

When the analysis is complete, the missing features will be displayed in the left-hand box, missing web-parts will be displayed in the right-hand box.
Normally, no missing features or web-parts should be detected.

If there are any, we recommend determining what products the missing features and web-parts are related to, and **consult with their vendors** if they have any specific recommendations on how to fix this for their products.

Using the Utility, you can select some or all missing features and/or web-parts and remove them.

Important note: Removal of a missing feature or a web-part **cannot be undone**!

Data collection feature tab

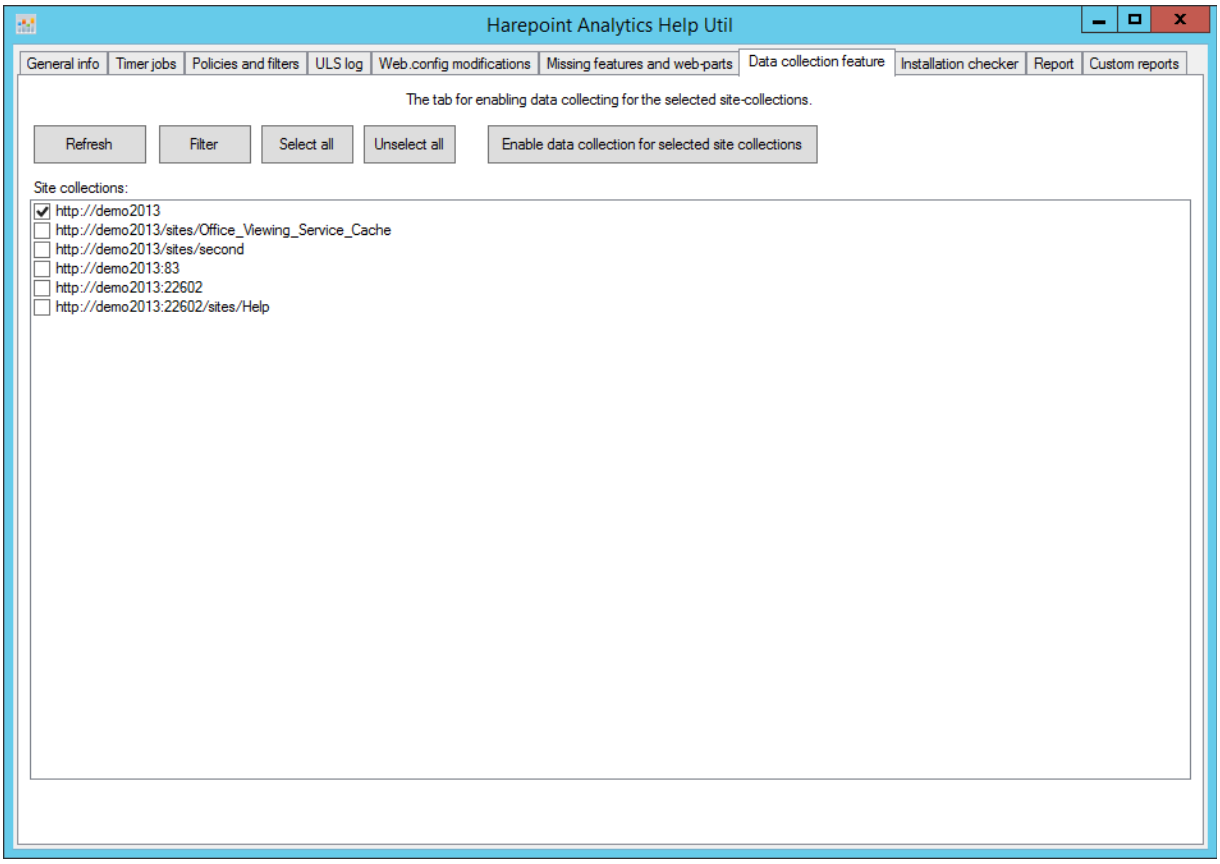
In HarePoint Analytics, **data collection is site collection scoped**. With HarePoint Analytics installed, each site collection has the **HarePoint Analytics for SharePoint** feature available:
(**Site settings – Site Collection Administration – Manage site collection features**)

HarePoint Analytics for SharePoint

This feature allows to collect and analyze statistical information about usage of site collection

Originally, **during the HarePoint Analytics installation process**, the administrator decides for which site collections the data collection for HarePoint Analytics should be enabled.
This can be changed later:

- From Site Collection Administration – site collection feature
- From the Installer – “Change” option
- From the Utility. This is the most convenient way.



The Utility displays **list of all site collections** in this SharePoint farm. Those site collections where the data collection feature is already **enabled** have the checkboxes **selected**.

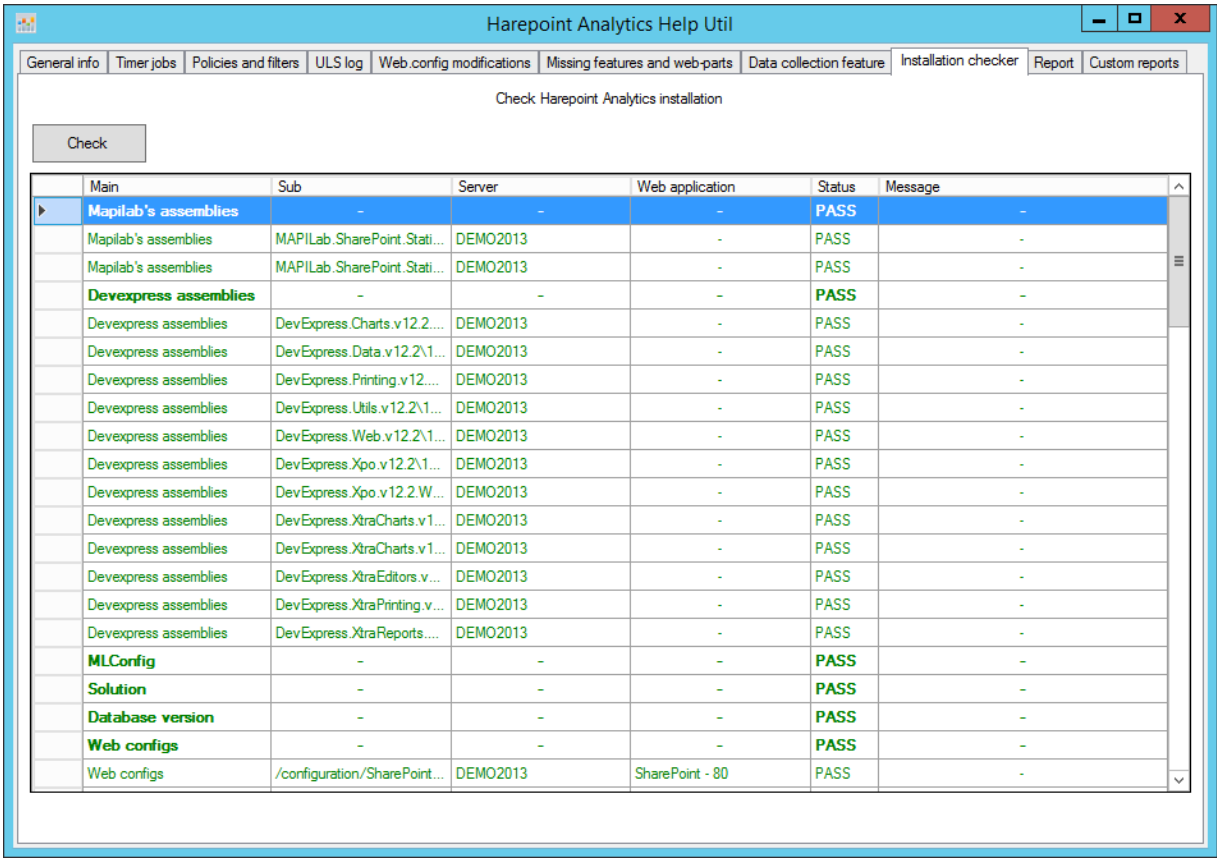
Use **Refresh** to rescan and display the actual information.

Select the checkboxes of the site collections where you need to **enable** data collection; **unselect** the checkboxes of the site collections where you need to **disable** data collection.
You can also use **Select all** and **Unselect all** buttons.
Click **Enable data collection for selected site collections** button.

Installation checker tab

On this tab, you can verify whether all components of HarePoint Analytics are installed properly.

Click **Check** to start checking.



Main	Sub	Server	Web application	Status	Message
Mapilab's assemblies	-	-	-	**PASS**	-
Mapilab's assemblies	MAPILab.SharePoint.Stati...	DEMO2013	-	PASS	-
Mapilab's assemblies	MAPILab.SharePoint.Stati...	DEMO2013	-	PASS	-
Devexpress assemblies	-	-	-	**PASS**	-
Devexpress assemblies	DevExpress.Charts.v12.2....	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Data.v12.2\1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Printing.v12....	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Utils.v12.2\1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Web.v12.2\1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Xpo.v12.2\1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.Xpo.v12.2.W...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.XtraCharts.v1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.XtraCharts.v1...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.XtraEditors.v...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.XtraPrinting.v...	DEMO2013	-	PASS	-
Devexpress assemblies	DevExpress.XtraReports....	DEMO2013	-	PASS	-
MLConfig	-	-	-	**PASS**	-
Solution	-	-	-	**PASS**	-
Database version	-	-	-	**PASS**	-
Web configs	-	-	-	**PASS**	-
Web configs	/configuration/SharePoint...	DEMO2013	SharePoint - 80	PASS	-

The following components are checked:

- Mapilab assemblies
- DevExpress assemblies
- Mapilab configuration
- Solution
- HarePoint Analytics Database version
- Web.config modifications
- Resource files
- Feature definitions
- Web service features
- Site features
- Timer jobs

The components that are OK will have **PASS** status.
The missing or improperly installed components will have **FAIL** status.

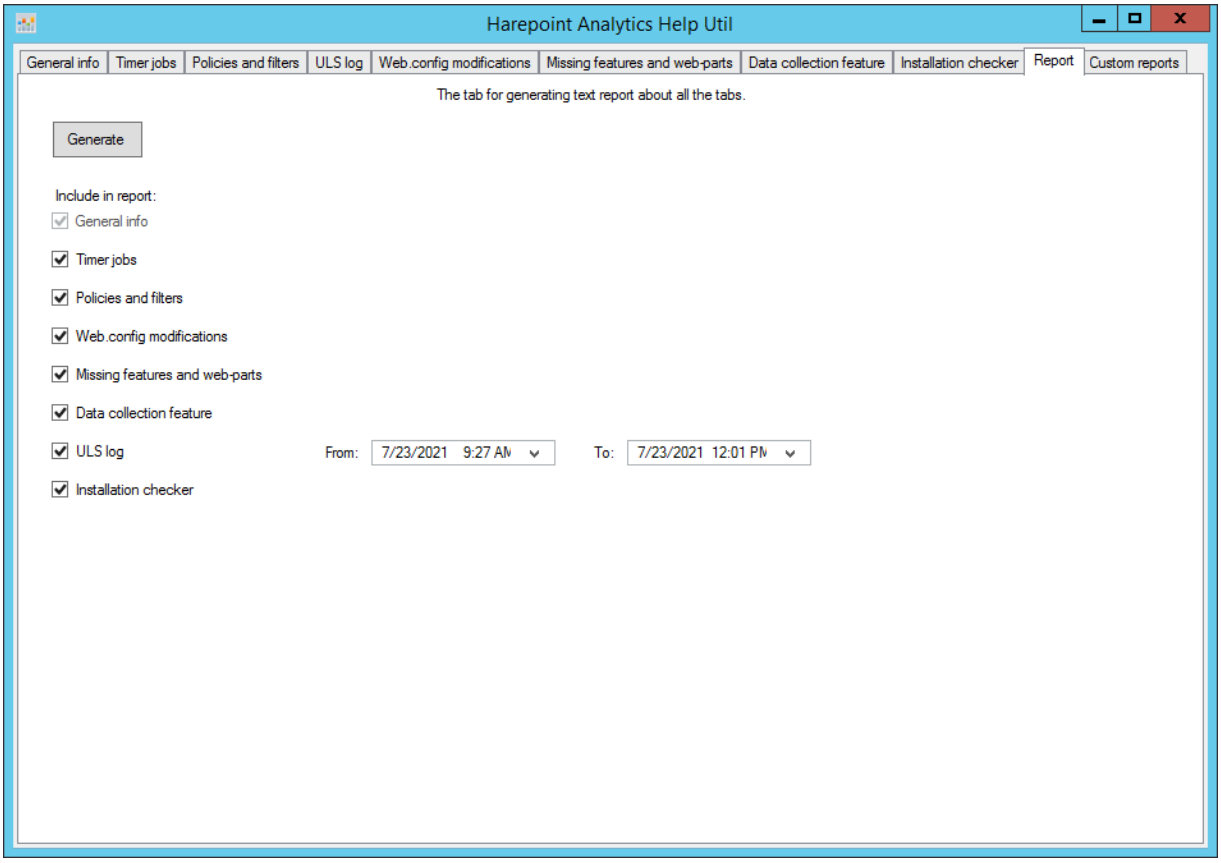
Normally, the installation issues can be fixed by running the installer in **Repair** mode, or upgrading to a newer version (**Upgrade** option in the installer).

If Repair or Upgrade does not fix the issue, and you are still missing some HarePoint Analytics functionality, or if the **Installation checker tab** points to multiple failures, contact **HarePoint Support**.

Report tab

On this tab, you can **generate a summary report** based on all or selected tabs of the Utility.

If you plan to contact HarePoint Support, please generate a report with **all options selected** and the ULS log date range set to the period of time during which you have been experiencing issues. This report gives a complete set of technical details regarding HarePoint Analytics and allows HarePoint Support specialists to identify the reason of the issue and suggest steps to resolve it reasonably quickly.



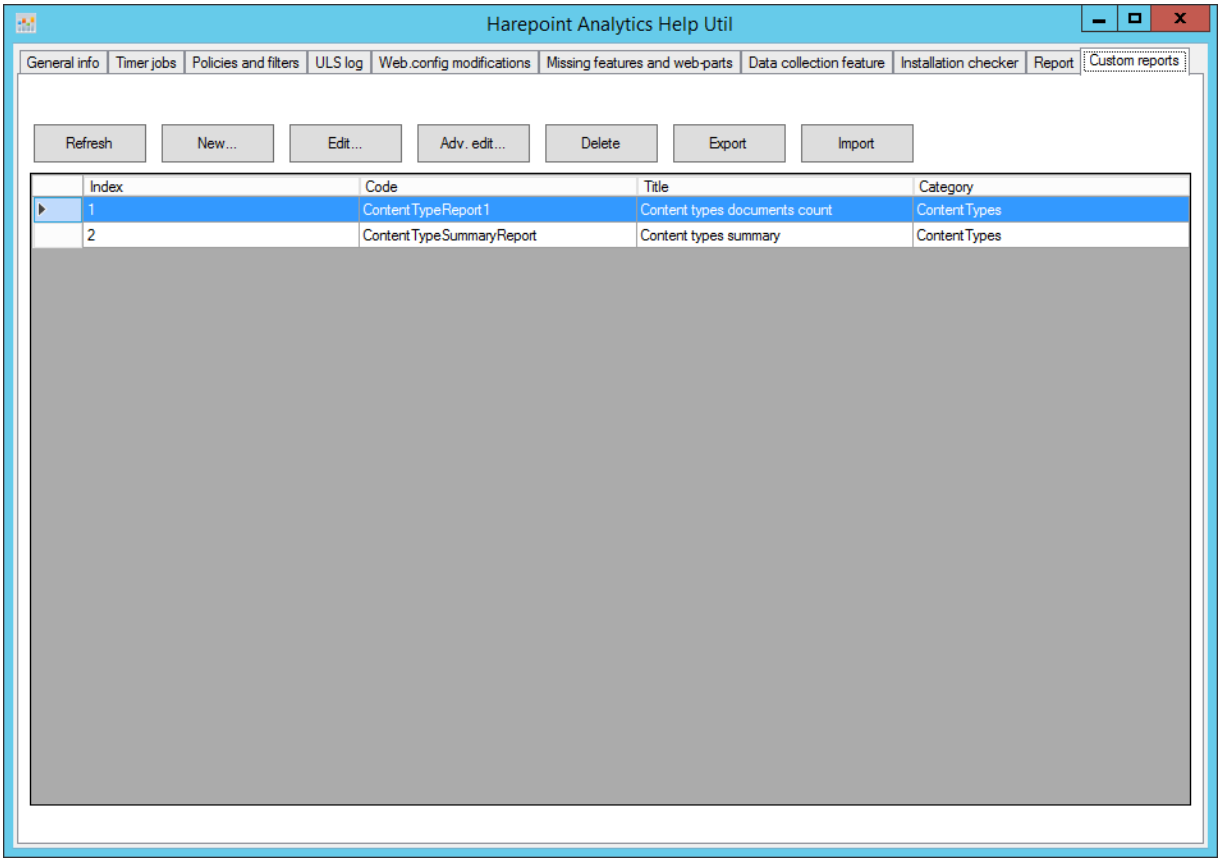
Select the checkboxes as required.
Set the date range in **ULS log** to the period of time when you've been experiencing issues. Avoid setting large date ranges, especially in a multi-server environment, as such reports can take an extremely long time to build.
Click **Generate** when ready. Specify the **location** for the report.

Report is saved as a **text file** with .txt extension. It can be opened using any text editor, and is human-readable.

Note: the report can also be generated using the **command-line interface** – for more details refer to Command line interface section.

Custom reports tab

Later versions of HarePoint Analytics provide the capability of adding custom reports.
Usually, these are very specific reports requested by a HarePoint client, constructed on an individual basis, and provided by HarePoint developers as XML files that can be imported using the Utility.



Note: Currently, it is not implied that custom reports can be created by clients themselves; for this reason some of the controls on this page are only designed to be used by HarePoint technical specialists.

Buttons:

Refresh - retrieve and display the actual data on this tab.

New… - opens the editor to construct a new report. Only for HarePoint technical specialists.

Edit… - opens the editor to modify the configuration of an existing report. Only for HarePoint technical specialists.

Adv. Edit… - opens the advanced editor to modify the configuration of an existing report. Only for HarePoint technical specialists.

Delete – delete the selected report. **Note:** It is recommended to export the report for backup before deleting.

Export – export the selected report to an XML file on a local drive.
All currenty added custom reports can also be exported using the command-line interface from SharePoint Management Shell:
stsadm -o mlstcustomreports -export "path_to_xml_file"

Import – import the report from an XML file (provided by HarePoint Technical Support or exported previously).
A custom report can also be imported using the command-line interface from SharePoint Management Shell:
stsadm -o mlstcustomreports -add "path_to_xml_file**"**

Command line interface

Beside the graphical user interface, Utility also provides a set of command line options.
To use them, open Command Prompt or SharePoint Management Shell and navigate to the folder where Utility is located.

1. Generate a report

Using the **-report** operation, you can generate a summary report, same as on Report tab.

Syntax

```
HarePointAnalyticsUtil.exe
      -report <report list>
      -date
            {fromto <fromdate> <todate> |
            tonow <units> <diffvalue>}
      -path <url or path>
```

Parameters

Parameter	Value	Mandatory?	Description
report	**One** or **several** values (space bar separated): • general • jobs • logs • features • policies • missings • installation • webconfmods	Yes	The parameter specifies the types of reports to be included (corresponding to tabs in the Utility): • **general** General tab information • **jobs** Timer jobs tab information • **logs** ULS logs tab information. **Note:** Requires **-date** parameter (see below).

			• **features** Data collection feature tab information • **policies** Policies tab information • **missings** Missing features and web-parts tab information • **installation** Installation checker tab information • **webconfmods** Web.config modifications tab information
date	**fromto** • From date • To date OR **tonow** • units (d, h, m) • difference value	Only when **logs** report included	Specify the date range for the ULS logs report; two formats available: **fromto** – in this case, first parameter is "from date", second parameter is "to date" (in system format) **Example** July 1st to July 31st**:** *fromto 7/1/2021 7/31/2021* **tonow** – in this case, first parameter is a unit (d for days, h for hours, m for minutes), second parameter is a difference value in specified units. **Example** last 7 days**:** *tonow d 7*
path	Local path or library URL	Yes	The local path or document library URL to save the report. You may **include the file name**, or it will be autogenerated. You may provide **only the file name** – the report will then be saved to the same folder where Utility is located. The simplest is to use "**.**" or "**.**" – the report will be saved to Utility folder with autogenerated name.

Examples:

HarePointAnalyticsUtil.exe -report general jobs -path "C:\log\utility.log"
Will generate general and timer jobs reports and save it to C:\log\utility.log file

HarePointAnalyticsUtil.exe -report general jobs policies -path .
Will generate general, jobs, and policies report, and save it to the folder where Utility is located, with autogenerated name.

HarePointAnalyticsUtil.exe -report general jobs logs -date tonow h 12 -path "C:\log\"
Will generate general, jobs, and logs reports for last 12 hours and save it to C:\log\ folder with the autogenerated name

HarePointAnalyticsUtil.exe -report general jobs logs -date tonow h 12 -path http://www.harepoint.com/Docs/AllPages.aspx
Will generate general, jobs, and logs reports for last 12 hours and save it to a document library with the provided by URL and the autogenerated name

HarePointAnalyticsUtil.exe -report logs -date fromto 1/1/2021 1/12/2021 -path "C:\log\uls.log"
Will generate ULS logs report covering date range from 1/1/2021 to 1/12/2021 and save it to C:\log\uls.log file

2. Save/Load HarePoint Analytics configuration

Using the -**config** operation, you can save or load HarePoint Analytics configuration.
This refers to parameters seen in **Central Administration – Monitoring – HarePoint Analytics settings**:

- Databases connection strings
- Data collection filters configuration
- Policies
- Licensing information

Syntax

```
HarepointAnalyticsUtil.exe -config
            {save <path_to_xml> |
            load <path_to_xml>}
```

Parameters

Parameter	Value	Mandatory?	Description
save	Path to the XML file. **Note:** enclose the file path in “double	Yes	Save HarePoint Analytics configuration to the specified XML file

	quotes" to ensure proper processing of special symbols.		
load	Path to the XML file. **Note:** enclose the file path in "double quotes" to ensure proper processing of special symbols.	Yes	Load HarePoint Analytics configuration from the specified XML file

3. Complete the manual update process

Using the **complete-upgrade** operation, you can initiate the set of actions needed to complete the manual update of HarePoint Analytics.
For more details, refer to **Administrator Guide – Upgrading the product – Manual upgrade section**.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe complete-upgrade
```

Parameters

(none)

4. Copy the application resources on all servers

Using the **copy-appbincontent** operation, you can force SharePoint to distribute the resource files to corresponding folders of the web application.
This command is equivalent to running **stsadm -o copyappbincontent** on **each** server of the SharePoint farm.
Typically used after deployment or upgrade.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe copy-appbincontent
```

Parameters

(none)

5. Display current status of policies

Using the **get-policies** operation, you can view the current status of policies (global settings) in HarePoint Analytics.
For more information on policies, refer to **Administrator Guide – Managing global policies.**

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe get-policies
```

Parameters

(none)

6. Set policies

Using the **set-policy** operation, you can change the policies (global settings) in HarePoint Analytics.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe set-policy
      -name <policy name>
      -value <parameter value>
```

Parameters

Parameter	Value	Mandatory?	Description
name	(see Admin Guide)*	Yes	The name of the policy
value	(see Admin Guide)*	Yes	Policy value

*For detailed information on policies names and values, refer to **Administrator Guide – Managing global policies.**

7. Display current data retention period

Using the **get-data-keep-days** operation, you can view the current data retention settings.
For more information, refer to Checking the current settings for the data retention paragraph.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe get-data-keep-days
```

Parameters

(none)

8. Set data retention period

Using the **set-data-keep-days** operation, you can set new data retention period.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe set-data-keep-days
      -group <report group name>
      -days <amount of days>
```

Parameters

Parameter	Value	Mandatory?	Description
group	One of the values: **VisitsMain** **DocsListsMain** **SearchMain** **VisitsReports** **DocsReports** **ListsReports** **SearchesReports** **PerformanceReports**	Yes	The name of report group: For raw (unprocessed) data (default is 90 days)**:** • **VisitsMain** (unprocessed data for visits reports) • **DocsListsMain** (unprocessed data for document and list) • **SearchMain** (unprocessed data for search reports) For data in daily reports (default is 180 days)**:** • **VisitsReports** • **DocsReports** • **ListsReports** • **SearchesReports** • **PerformanceReports**
days	**<Amount of days>** OR **0** to disable cleanup	Yes	Specify amount of days to keep data, or specify 0 to disable data cleanup

For more information, refer to Setting new data retention period paragraph.

9. Encrypt previously collected personal data

Using the **encrypt-users** operation, you can encrypt the previously collected users' personal data. Typically, this operation is performed after enabling the **encryptuserinfo** policy that enables encryption for the newly collected data.

Warning: The action of this command is **not reversible**! Read carefully the **Administrator Guide** – **Managing Global access permissions** chapter for detailed explanation and use case scenarios before running this command!

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe encrypt-users
```

Parameters

(none)

10. Restart SharePoint Timer service on all servers

Using the **restart-sptimer** operation, you can restart SharePoint Timer Service on all servers in the farm.
Typically used after deployment, update, or retraction.

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe restart-sptimer
```

Parameters

(none)

11. Apply default site theme

Using the **use-default-theme** operation, you can apply the default site theme to report pages. This can be used for troubleshooting purposes, if the custom theme causes report pages to be displayed improperly (incorrect formatting, hard to read, some areas are not visible, etc).

Note: only since versions 16.12/15.17 of HarePoint Analytics

Syntax

```
HarePointAnalyticsUtil.exe use-default-theme
      -default { true | false }
```

Parameters

Parameter	Value	Mandatory?	Description
default	One of the values: • true • false	Yes	• Set to **true** to use the default site theme • Set to **false** to use the current site theme