Gathering Tools S.A.S

Gathering Tools Installation Guide

TURNING YOUR
SPREADSHEETS
TO AWESOME

Version 2022

Versions

Date	Description
21/02/2022	Update

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1. Description of the Gathering Tools® platform

Gathering Tools® is a software platform used to supply the information system with data previously collected in the form of Excel® workbook type documents. Gathering Tools® accomplishes this task by replacing the so-called desktop files with documents having functions and ergonomics very close to the original documents.

The main benefits of Gathering Tools are:

1. Improving data quality and data governance
2. Lower development and maintenance costs
3. Weak change management for users

1.1. Roles and Responsibilities

The table below lists the roles that can be assigned in a Gathering Tools project. Each role must have an account corresponding to its scope.

Rôle	Responsibility	Profil-Type	GT Modules to be installed

Administrateur	• Creating and configuring instances
	   o Connection to the bases
	   o Login to email account
	   o Connecting to the Web Server
	   o Flow security certificates
	   User creation and management
	
	   o Add/Remove Users
	   o Password strategy
		Infrastructure team, IT correspondent	GtServer GtAdmin

Developer	• User management
	
	   o Creating and maintaining user groups
	   o Creation and maintenance of manager access filters to models
	• Creation and maintenance of templates (forms and dashboards)
	• Creating and Maintaining the Database Underlying Transactions within an Instance
	• Creation and maintenance of actions made available to managers
		Developer, DBA, MOA	Design GTAnswer

Manager	• Execution of actions created by developers • Campaign follow-up • Validation of responses • Management of communication with recipients (reminders, versions, etc.). • Changing Campaign Messages	Functional manager of a reporting entity	GTAnswer
Validator	• Campaign follow-up • Validation of responses • Management of communication with recipients (reminders, versions, etc.)	User Supervisor	GTAnswer
Respondent	• Feeding the forms with data • Consultation of the dashboards		GTAnswer

1.2. Architectural scheme

The diagram below describes the technical architecture of Gathering Tools, the modules to be installed for each role as well as the modalities of transactions between them.

1.2.1. On Premise Architecture
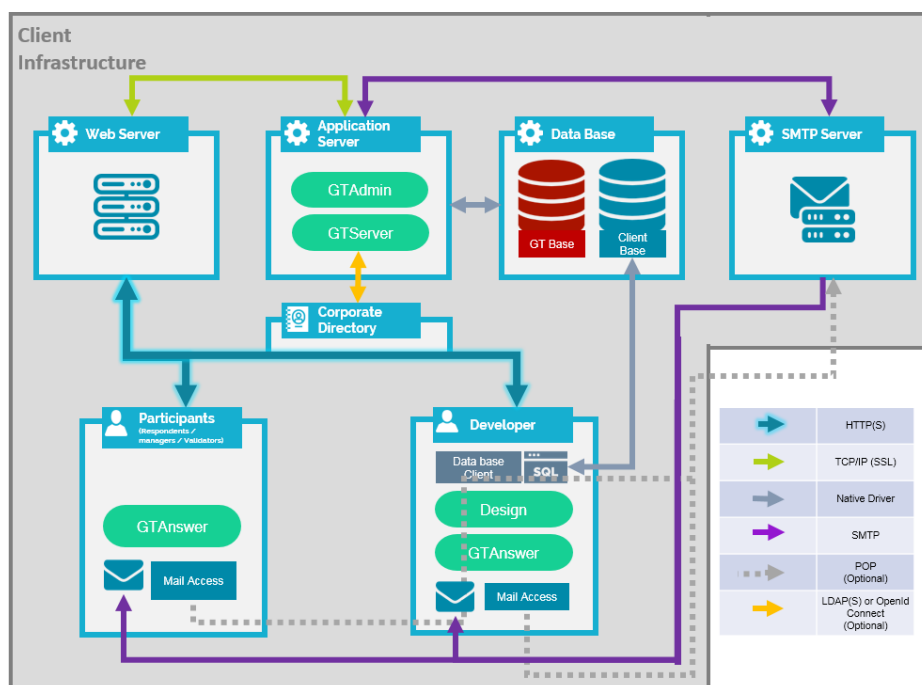
1.2.2. Cloud Architecture
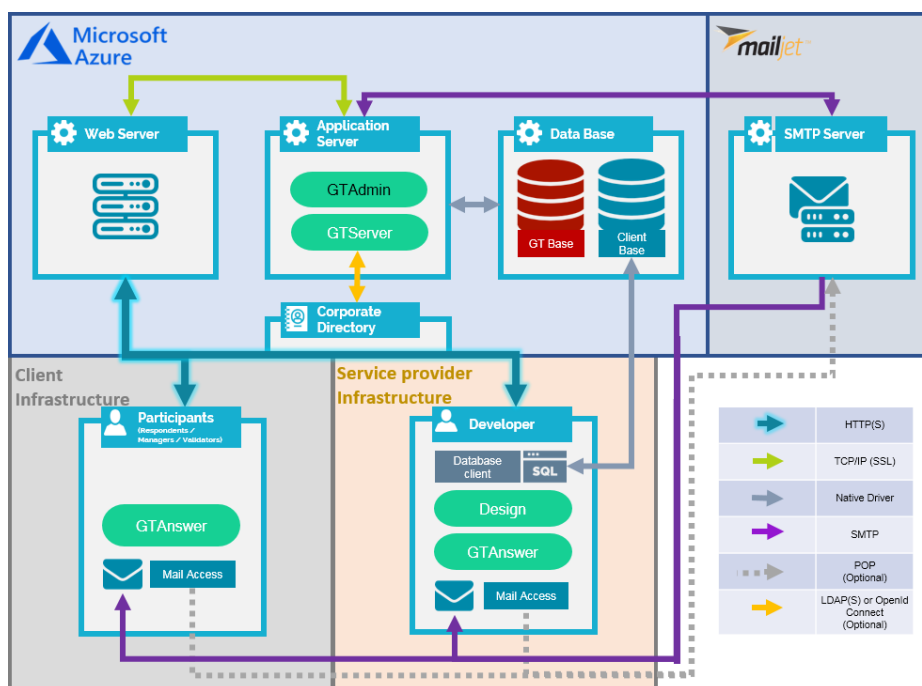
Note 1: Communication between GTServer and its clients (GTAnswer, GTWeb, Automation) uses a proprietary protocol at the Application layer (Internet Protocol Suite model or OSI model). The SSL/TLS protocol can be used to secure communications.

Note 2: only the verbs GET and POST are used for the HTTP/HTTPS protocol.

1.3. module description

•GTAdmin allows the administrator to create and manage instances. For each instance, it allows:

˚ Configure the access of the instance to the GT Base (repository, which manages the internal workings of the application), Initialize the GT Base

˚Configure the instance's access to the Client Base (database that supports business data transactions)

˚Create users

˚Start / Stop the application server service

˚Managing security

- GTServer is the application server. It allows:
  - Carry out all transactions on the customer master
  - Manage the input/output of data between the GT Database and the recipients (sending of e-mails, collection of data transmitted by the recipients, creation of dashboards).
  - To publish for the GTAnswer module the statuses of the different campaigns (respondents, response versions, history, etc.).
  - Design allows developers to create forms and update forms published on the server
- GTAnswer allows:
  - For developers, managers, and validators, according to their respective rights, of:
    - Create templates (storage of form and dashboard templates)
    - Create the actions (campaign launch, data integration, distribution of dashboards)
    - View campaign statuses (responses, versions, history, etc.)
    - Communicate with recipients (reminders, requests for corrections, etc.)
  - For the respondents, to consult the dashboards, to feed the documents with data and to send them back to the server.
- GTWeb is the Web application for the synchronous exchange of information (publication, synchronization and response via the http/https protocol).

2. Installation prerequisites

2.1. Server workstation: GTServer module

Installed modules: GTServer and GTAdmin via SetupGTServer.exe

- **Windows** 7, Windows 8 or 8.1, Server 2008 or 2008 R2, Server 2012 or Server 2012 R2, Windows 10 with the last Service Pack, Server 2016, Server 2019.

- **.NET** Framework 4.7.2

- **Windows account with administrative rights for installation.** It is recommended that the language of the Windows interface for this account be the same as the language of the installed Windows system (only to be taken into account if language packs are installed).

- **Windows service account with administrator rights (preferable) or user rights with power.** This account is used to start the GTServer service. This account can be the same as the installation account. It is recommended that the Windows interface language for the service account is the same as the language of the installed Windows system (only relevant if language packs are installed). It is also recommended to configure the instance with this Windows account (via the GTAdmin module installed with GTServer).

- **GT database (repository) on SQL Server, Oracle, Postgres or DB2**: The GT database or GT database schema is a proprietary database used only by GTServer. It must be created blank before installing GTServer on the server workstation.

- **User and database schema for the GTServer database**: The user and schema must exist at the time of installation of GTServer. One database schema is sufficient for the GT Database if the DBMS allows multiple schemas. The GT Database schema must not contain any objects that were not created by GT installation (by initialization or update with GTAdmin). The user rights for logging on to this database schema are described in section 2.1.2.

- **Client database on SQL Server, Oracle, Postgres or DB2:** the Client database or Client database schema contains all the input and output data of the questionnaires as well as the filters used for GTAnswer accesses. This database must exist at the time of installation of GTServer. The design of the objects of this database is left to the freedom of the GT developer and/or the client.

- **User and database schema for the customer master.** The user and schema must exist for the client database when GTserver is installed. The rights of the user connecting to this database schema are described in § 2.1.3.

- **For security reasons, the GT Database and the client database must be separate databases.** Users logging on to the GT Database and the client database should be separate users with separate rights (no access to the GT Database for the client database user and vice versa). This is especially important if the GT Database and the client database are hosted on the same database server.

- The same GT Database cannot be used by two different GT instances, whether they are of the same version or not.

- **Pre-installed DBMS :** The DBMS(s) (database systems hosting the GT Database and the Client database are not installed per PC. These DBMS(s) must be installed prior to GT installation. These DBMS can be on the same computer as GTServer.

- **Client/driver of database for the GTserver database and the Client database:** the database clients or connection drivers required for each DBMS are described in § 2.1.1.

- Comply with the specificities required for each DBMS (see § 2.1.4.).

- **Gathering Tools dedicated email account.** A POP/SMTP or IMAP/SMTP connection (SSL secured or not) to this account is preferable. An SMTP connection is **mandatory** for sending emails. A connection to an Exchange server (respectively a Notes server) is possible for receiving mails, in this case, an e-mail client (Outlook 32 bits or respectively Lotus Notes) will have to be installed on the server, this client will have to be configured and tested under the Windows account launching the service.

- **Opening connections to the mail server from the server, connections from the GTServer.**exe executable to the mail server must be allowed in the case of POP/SMTP or IMAP/SMTP connections.

- **Opening incoming ports: the GTAnswer and GTWeb modules** communicate with GTServer in TCP/IP using the ports specified when configuring the instances (port 3000 by default for the first instance of GTServer). These ports must be open on the server for incoming connections. Another option is to allow inbound connections for the GTServer.exe module (located in C:\Program Files\Calame\ bin by default).

- **Read-write rights** for the service account on the directory of the GTServer instance, the temporary directory of the profile and the directories specified in the instance configuration (see 3.1.3.1).

- **Read-write rights** for the service account on the directories for extracting attachments included in the questionnaires, these directories are specified in the integration actions. GT documents that contain attachment components require a repository for storing files (attachments) provided by users to be integrated into a database.

- **its read/write actions f**or the service account on the extraction directories of the attachments included in the questionnaires, these directories are specified in the integration actions. In order to be integrated into a database, GT documents with attachment components require a repository directory for storing user-supplied files (attachments).

- **Read rights** for the service account on the directories specified in the attachment paths in the data used to pre-populate the questionnaires. Usually these attachment paths will be specified with network locations. If no questionnaire contains an attachment component, this prerequisite does not need to be met.

- **Microsoft Excel** of minimum version 2000, installed on the server in the event of restitution generated with Gathering Tools. For an Excel import, a minimum version 2007 is required.

- Minimum **RAM memory** of 4096 MB and recommended of 8192 MB.

- Minimum **Disk Space** of 10 GB and recommended of 20 GB.

2.1.1. Required Server and Client Versions for DBMS

The DBMS supported by GTServer and the database clients to be installed for a GTServer (repository) or Client base are the following:

- GT Database
- Client Database

Remarks :

GT Database	Client Database	Remarks
SQL Server 2008 or higher	Provider Ole DB for SQL Server 2008, 2008 R2, 2012	SQL Server Express versions are supported For SQL Server 2014, use the Ole DB client driver for SQL server 2012
Oracle 10 or higher	ODP.NET Installed with ODAC (Oracle Data Access Components) version 11g minimum	Oracle XE version is supported The client must be configured (tnsnames.ora and sqlnames.ora)
Postgres 8.3 or higher	NpgSql	The client is installed with GTServer
DB2 UDB 9 or higher	IBM Data Server Runtime Client	DB2 AS/400 is not supported

The GT and Client databases can be located on different database servers. These servers may be on different machines from the machine on which the GTServer service will run.

Backups of the GTServer database or the Client database must be performed by the backup tools usually used by the IT department managing the servers for the DBMS(s) concerned.

2.1.2.   User rights for logging on to the GT Database

Different users can be specified when initializing the GT Database (for initializing or updating the GT Database) and then when the service is to be started.

When the GT Database is initialized or updated, additional rights are required for the creation of objects. The rights of the logon users can

Only apply to objects of the specified schema in the GT Database connection.

GT Database	Necessary rights	
	When createing/updating the GT Database (CREAKING UP CRIES)	using the GT database
SQL Server	CREATE TABLE CREATE TYPE CREATE PROCEDURE ALTER ON SCHEMA REFERENCES ON SCHEMA SELECT, UPDATE, INSERT, DELETE ON SCHEMA (ou appartenance aux rôles db_ddladmin, db_datareader et db_datawriter) EXECUTE ON SCHEMA	SELECT, UPDATE, INSERT, DELETE ON SCHEMA (or membership in the roles db_datareader and db_datawriter) EXECUTE ON SCHEMA
Oracle	CREATE TABLE CREATE INDEX CREATE SEQUENCE ALTER TABLE SELECT, UPDATE, INSERT, DELETE	SELECT, UPDATE, INSERT, DELETE (on each tables created by GTServer) SELECT (on each of the sequences created by GTServer)
Postgres	CREATE ON SCHEMA USAGE ON SCHEMA	USAGE ON SCHEMA SELECT, UPDATE, INSERT, DELETE (on each of the tables created by GTServer) USAGE (on each of the sequences created by GTServer) Postgres 9 SELECT, INSERT, UPDATE, DELETE ON ALL TABLES IN SCHEMA USAGE ON ALL SEQUENCES IN SCHEMA
DB2 UDB	CREATE TABLE CREATE INDEX CREATE SEQUENCE ALTER TABLE SELECT, UPDATE, INSERT, DELETE	SELECT, UPDATE, INSERT, DELETE (on each of the objects created by GTServer)
On-board Firebird	The GT Database is created when configuring the instance. No special rights are required.	

2.1.3. User rights to connect to the Client database

The connection rights to the customer database depend mainly on the design of the integration actions.

For the actions of launching questionnaires or creating Excel workbooks, a SELECT on the tables/views concerned is sufficient.

In the case of integration actions, GTServer needs to create intermediate (temporary) tables in the client database to store and manipulate the data from the questionnaires.

Nevertheless, the GT developer can build tables that GTServer will use as intermediate tables during the integration: the development of such integration actions then implies that for each destination table (in which data is integrated), two additional tables (an integration intermediate table and a key table) are created with a similar structure.

	Necessary rights	
GT Database	**Without using intermediate integration tables and keys**	**By using the intermediate integration and key tables**
SQL Server	CREATE TABLE CREATE INDEX SELECT UPDATE INSERT DELETE (db_ddladmin, db_datareader and db_datawriter)	SELECT UPDATE INSERT DELETE (db_datareader and db_datawriter)
Oracle	CREATE TABLE CREATE INDEX SELECT UPDATE INSERT DELETE	SELECT UPDATE INSERT DELETE
Postgres	CREATE TABLE CREATE INDEX SELECT UPDATE INSERT DELETE	SELECT UPDATE INSERT DELETE
DB2 UDB	CREATE TABLE CREATE INDEX SELECT UPDATE INSERT DELETE	SELECT UPDATE INSERT DELETE

SELECT, UPDATE, INSERT, DELETE apply to all tables/views designated in the questionnaire launch, return and integration actions, as well as to all temporary tables created by GTServer during integration.

2.1.4. Specificities according to the databases used

Regardless of the DBMS chosen for the **client database, only one schema is accessible per PC**: all tables and views used must be in the same schema.

However, views in the schema specified for the client database connection can use data from other schemas or databases (the logon user rights must be adjusted accordingly).

The schema name is case sensitive.

In the configuration interface, additional database connection parameters are used to specify, in text form, the additional information to be sent to the database driver used by GTServer.

2.1.4.1. SQL Server

The schema specified for the GT Database connection must be the default schema for the user specified for GT Database creation/initialization. If no schema is specified in the database connection, the dbo schema is used.

The specified schema is case-sensitive for both the GT and Client database.

The database schema, if different from the dbo schema, must be specified for both the GT Database connection and the customer database connection.

When connecting to a GT Database under SQL Server, a GRANT EXECUTE on all stored procedures is required. This right is not included in the database roles installed by default with SQL Server. It can be granted on all procedures of a schema by using the following statement :

grant execute **ON SCHEMA**::Schema_Name to Schema_User_Name;

However, this right is included in the database role db_owner.

If the GT Database is case-insensitive or accent-insensitive, different GT objects (templates, actions or messages) cannot have names that differ only in case or accents.

2.1.4.2. Oracle

The schema must be specified for both the GT Database and the Client Database connections. The schema is case sensitive.

The schema specified for the GT Database connection must be the default schema for the user specified for creating/initializing the GT basis.

The GT **schema** must have been created in **uppercase** with no spaces or characters other than a-z, 0-9 and _.

2.1.4.3. Postgres

The schema must be specified for both the the GT Database and the Client Database connections. The schema is case-sensitive

The GT **schema** must have been created in **lower case** with no spaces or characters other than a-z, 0-9 and _.

The schema specified for the GT Database should be the user-defined default schema specified for GT Database creation/initialization.

If this is not the case, the following entry must be included in the additional parameters for the GT Database connection:

SearchPath=schema_name

Version 9 of Postgres has induced a change in the default behavior. The "bytea_output" entry must be specified to escape in the Postgres configuration file:

bytea_output = 'escape'.

2.1.4.4. DB2 UDB

The schema must be specified in the connection configuration of the GTServer instance.

The schema specified for the GT Database connection must be the default schema for the user specified for GT basis creation/initialization.

2.1.4.5. On-board Firebird

Firebird is only supported as DBMS for the GT Database.

When "Embedded Firebird" is chosen for the GT database, when configuring the GTServer instance, a Firebird database is created in the instance directory.

GTServer has all rights to this Firebird database.

Access to this database is allowed for only one Windows process: when the GTServer service is started, GTAdmin should be closed. Conversely, if GTAdmin needs to access the database (to create users for example) the GTServer service should be stopped.

## 2.2. Dedicated web server workstation: GTWeb module

Module installed: GTWeb by copying the scripts contained in a zip.

Prerequisites for the Web server to host GTWeb

- **Windows** or Unix machine to run the Web server and the following associated modules.

- **Apache serve**r version 2.4minimum OR **IIS server** version 7.5minimum

- **PHP** engine installed and operational on the Web server, **version** 7.4 minimum

- A user account (**on the Windows or Unix system hosting the Web server**) that allows you to make shutdowns, restarts, and configuration changes to the Web server**.**

- Access to the machine (if different from the machine hosting GTWeb) where the scripts of the GTWeb module are installed.

- Inbound port opening: **GTAnswer** and Design communicate with the web server hosting GTWeb by opening an http connection on a **TCP/IP** stream on the port(s) of the web server. This port must be open on the dedicated web server machine for inbound connections.

2.3. Developer client: Design and GTAnswer modules

Installed modules: Design and GTAnswer with SetupGatheringTools.exe
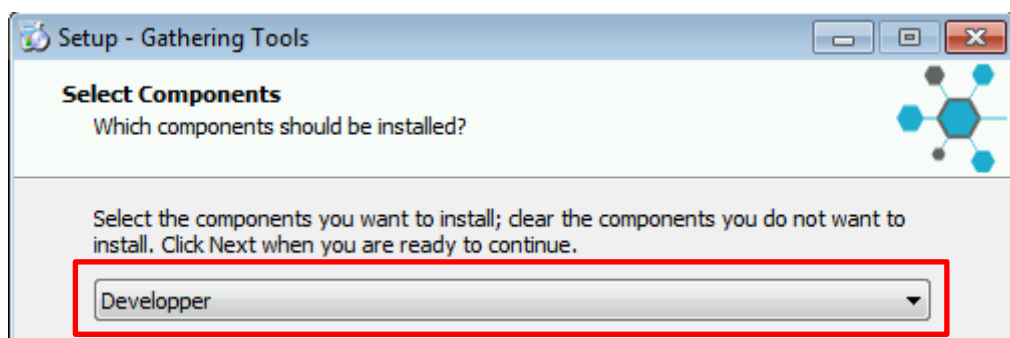
SetupGatheringTools: Two versions, 32-bit and 64-bit. The installed version must match the versions (32 or 64) of Outlook (if that is the sending mode). If the sending mode is not Outlook, it is strongly advised not to use the 64-bit version (slower and more RAM intensive).

- **Windows** 7, Windows 8 or 8.1, Server 2008 or 2008 R2, Server 2012 or Server 2012 R2, Windows 10 with the last Service Pack, Server 2016, Server 2019.

- **Messaging client** to test the received **questionnaires.**

- **Access an email account for the recipe via GTAnswer OR use HTTP response.** GTAnswer is used to respond to forms. When using a GT project with questionnaires where the answers are not transmitted via HTTP, GTAnswer will communicate with the mail server to transmit the answer (backup connection).

- The **communication ports** to the GT server **must** be open.

- **Screen** with a resolution of 1024x768 minimum.

- **Microsoft Excel** of minimum version 2000, installed on the server in the event of restitution generated with Gathering Tools. For an Excel import, a minimum version 2007 is required.

- Minimum **RAM memory** of 1024 MB and recommended of 4096 MB.

- Minimum **Disk Space** of 10 GB and recommended of 20 GB.

- **Access t**o the web server providing the **HTTP response** (publication) if questionnaires with an HTTP response are **sent.**

The developer should have access to an object design tool in the client database for creating tables and views for the input and output of GT documents.

2.4. Manager or validator client workstation: GTAnswer module

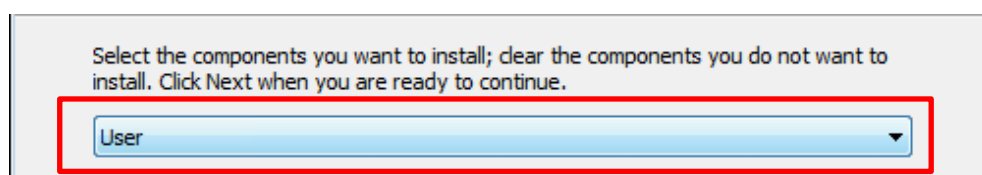Installed module: GTAnswer via SetupGatheringTools.exe.

SetupGatheringTools: Two versions, 32-bit and 64-bit. The installed version must match the versions (32 or 64) of Outlook (if that is the sending mode). If the sending mode is not Outlook, it is strongly advised not to use the 64-bit version (slower and more RAM intensive).

- **Windows** 7, Windows 8 et 8.1, Server 2008 or 2008 R2, Server 2012 or Server 2012 R2, Windows 10 with the last Service Pack, Server 2016, Server 2019.

- Minimum **Disk Space** of 40 MB and recommended of 100 MB

- **Microsoft Excel** of minimum version 2000, installed on the server in the event of restitution generated with Gathering Tools. For an Excel import, a minimum version 2007 is required.

- **Windows account** with administrative rights for **installation**

- The communication ports to the GT server must be open.

2.5. User client: GTAnswer module

Installed module: GTAnswer via SetupGatheringTools.exe.
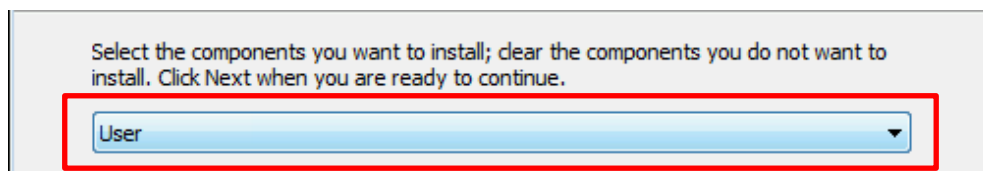

SetupGatheringTools: Two versions, 32-bit and 64-bit. The installed version must match the versions (32 or 64) of Outlook (for the backup connection). If the sending mode is not Outlook, it is strongly recommended not to use the 64-bit version (slower and more RAM-intensive).

- **Windows** 7, Windows 8 et 8.1, Server 2008 or 2008 R2, Server 2012 or Server 2012 R2, Windows 10 with the last Service Pack, Server 2016, Server 2019.

- **Microsoft C Runtime (CRT)**. The Universal CRT is a Microsoft Windows operating system component. It is included as part of the operating system in Windows 10 and is available for older operating systems, Windows Vista through Windows 8.1, by using Windows Update. In addition, local deployment of the Universal CRT is supported, with some restrictions.

  Windows administrators may download the Universal C Runtime from Microsoft servers:

  - o x86: vc_redist.x86.exe

  - o x64: vc_redist.x64.exe

  - o ARM64: vc_redist.arm64.exe

  Older Visual C++ Redistributable packages for Visual Studio still need to be downloaded and installed separately or be delivered as part of a program's installation process.

The Visual C++ All in One Installer is also useful when it comes to installing redistributable packages on Windows systems.Minimum

- **Disk Space** of 40 MB and recommended of 100 MB

- **Microsoft Excel** of minimum version 2007 installed for an Excel Import.

- **Mail client** used to receive the mails sent.

- **Access to an email account via GTAnswer** for questionnaires requiring an answer by email **(backup connection)**

- If a mail client is already installed, the information will be retrieved, and the password will be requested for Lotus Notes and SMTP mailboxes. In the case of connections to an Exchange server or a Notes server, a mail client (Outlook or Lotus Notes) must be installed on the computer.

- If no email client is installed (WebMail, …) or the configuration of the email client is not detected by GTAnswer, login information to an email account with SMTP access will be required to configure GTAnswer.

- **Access to the web server providing t**he HTTP response (publishing) if questionnaires with http response or HTTP synchronization are sent.

- **Microsoft Excel** version 2007 or higher, installed in case of Excel import.

3. installation and configuration procedures

3.1. Server workstation: GTServer module

The Setup will install GTServer and associated modules.

Several instances of GTServer can coexist on the same workstation.

Each instance of GTServer is associated with a Windows service.

3.1.1. Installation procedure

Login with the administrator account provided for the installation.

Start SetupGTServer.exe.

Follow the installation wizard.

Then run the installation wizard by selecting the default options.

3.2. Server configuration

3.2.1.1. Preambles

Once the installation is complete, log on to the workstation with the Windows user account launching the service (service account).

It is preferable to be able to log in with this service account to complete the installation in order to overcome the difficulties related to the rights (under Windows 7, 8, 8.1, 10 and Windows Server 2008 or 2008 R2, 2012 or 2012 R2 and 2016) on the directories created during the configuration of the GTServer instance with another account than the service account.

When registering the key, GTAdmin.exe tries to dialog with the Gathering Tools site to validate this key (via https://www.gathering-tools.com). If this communication is not possible (firewall, use of a proxy or absence of connection to Internet,...), a manual procedure of validation is possible (cf 3.1.2.3).

3.2.1.2. Installing the license key

The license key for version 2022 is defined at the server level.

If you have not received a license key for your installation, please contact GATHERING TOOLS support (support@gathering-tools.com) specifying:

- if you are making a new installation

- whether you want the recipe instance and the production instance to be installed on the same machine or on two separate machines. Specifying the names of the recipe and production machines in your email to the support team (in the case of a distribution on two machines) will allow you to better distinguish them during the installation.

Once you have your license key, launch **GTAdmin** and access the command

License →   Install
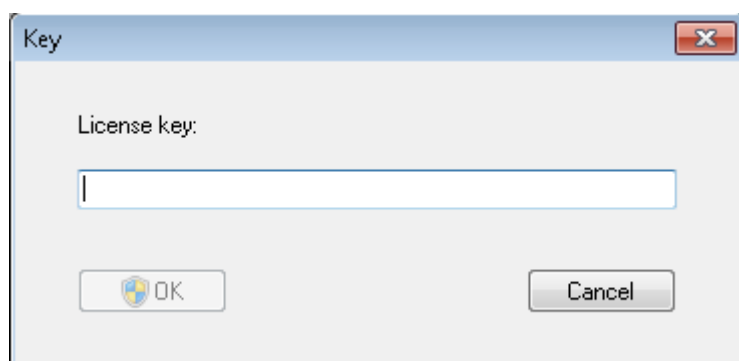
Enter your license key

Click on the Validate button. If a Generate button replaces the Validate button, refer to the manual validation of the key (§ 3.1.2.3).

Then click on the Install button which will then be available if the key is valid. A temporary increase of rights may be required on Windows 7 and following systems.

Once validated, the license key cannot be used for another machine.

3.2.1.3. Manual key validation for GTServer

From the license key installation box, the GTAdmin.exe program tries to dialog with https://www.gathering-tools.com to check the validity of the license key.

 If GTAdmin.exe cannot dialog with the site https://www.gathering-tools.com, A message appears informing of this impossibility.

- Close the dialog box with the message informing of the connection failure.

- Enter the license key received from support

- Click on the Generate... button. The text proposed in the text box (starting with (----- BEGIN GTLIC DATA1 TO SEND -----) of the panel is to be sent in an email of support at (support@gathering-tools.com).

- In return, the support sends you an email containing a new text starting with ----- BEGIN GTLIC DATA2 RECV -----.

- The media return text is to be entered in the next panel of the configuration wizard.

- Click on the Validate button

- Then continue the installation by clicking on the Install button in the previous box

- asking for the license key.

3.2.1.4. Assignment of instances

Once the license key is installed, go to the "License/Information..." menu.

This box is used to associate the instances declared in GTAdmin with the instance numbers of the license key and to view the characteristics of each instance license (number of administrators, developers, automation licenses, managers and validators).

To assign an instance :

- Select an instance number of the key

- Click on "Assign to Instance...". A dialog box allows you to assign this instance number of the key to an instance declared in GTAdmin.

To unassign the instances, it is necessary to reinstall the license key (see 3.1.2.2).

3.2.2.   Configuring an Instance

The configuration of an instance is done with the Windows user account running the service (service account). The server configuration preambles should have been implemented (see 3.1.2.1).

Once the instance is created in GTAdmin, it must be assigned to an instance number defined in the key (cf 3.1.2.4).

Launch GTAdmin.

Choose File->New Instance to create and configure a new instance.

Enter the name of the new instance in the box (the name must respect the file naming rules with the additional constraint of no spaces, accented characters and unicode characters).

A wizard takes you through the different steps of configuring the instance for its creation.

Once the instance has been created (when the wizard has been fully scrolled), the modification of the instance configuration needs to be done using the Save Instance Configuration XXX command from the file menu, when the service of the instance is stopped.

The instance declared in GTAdmin must then be assigned to an instance number of the license key to be able to install the service and be started (see 3.1.2.4).

3.2.2.1.General Settings

In the general parameters box, specify the communication port that will be used on the server workstation for communications with GTAnswer users. This port must

be open for communications with GTAnswer.

Each GTServer instance is associated with a directory of log files and a Windows event log.

Choose the logging levels specified in the screenshot above for an optimal level of information in the file and system logs without overloading.

The **directory of the instance** must be read-writable by the user of the GTServer service account. This directory is as follows:

 \ProgramData\Calame\GTServer\Instance_Name

(on Windows 7 or 8, 8.1 or 10, Windows Server 2008, 2008 R2, 2012 R2,2016)

The log directories, renditions and the temporary directory must be read-write accessible by the user of the service account.

The log directories can be specified wherever you want (their locations can be changed in the "General" tab of the instance in GTAdmin).

By default, these directories are as follows:

Directory	Default location
Newspaper Directory	…..Directory_of_the_instance_Log…
Repertoire of restitutions	….Directory_of_the_instance_Restit..
Temporary directory	..Directory_of_the_instance_Tmp…

Select Next to proceed to the next configuration step.

3.2.2.2.Security: using a certificate
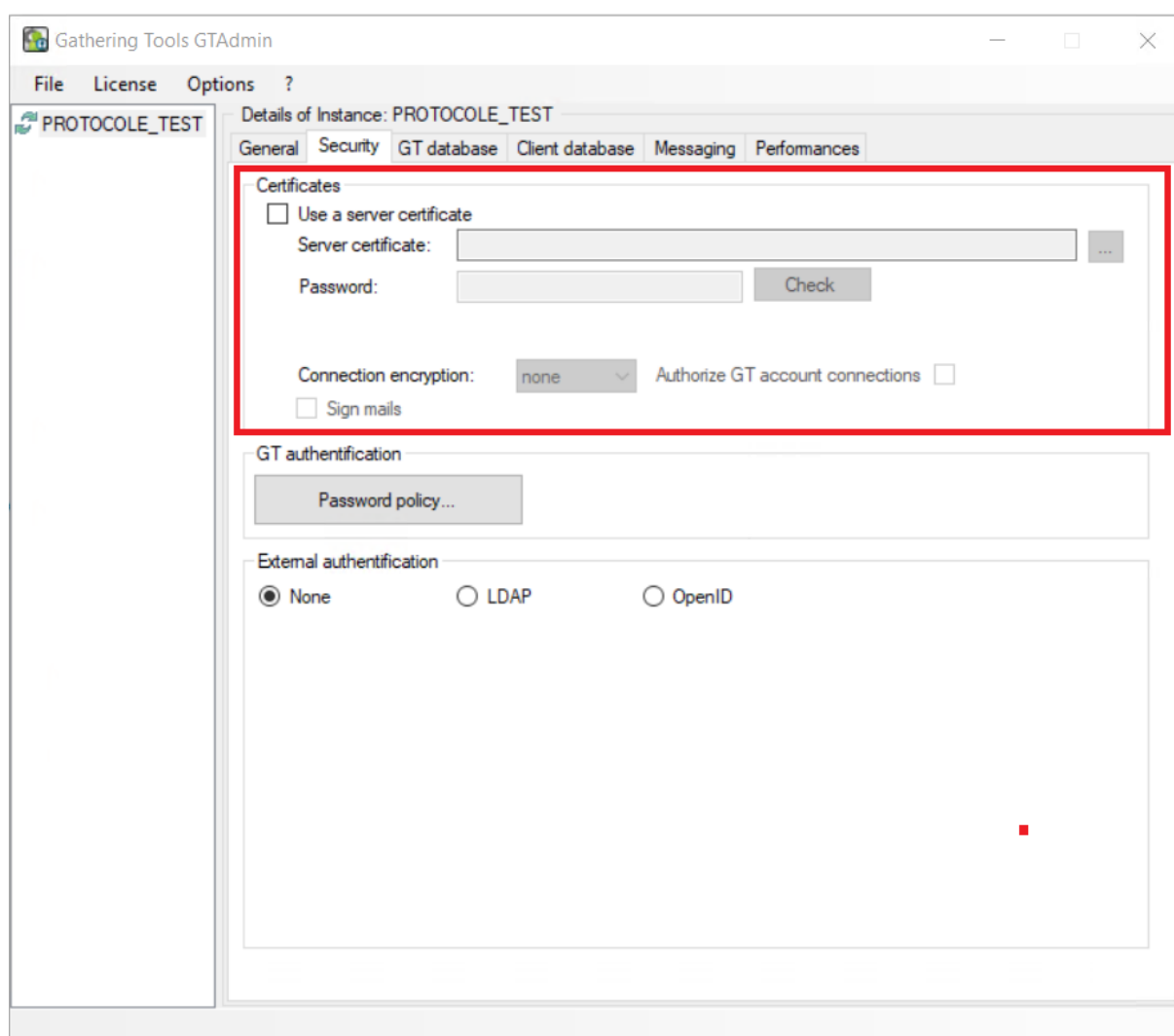
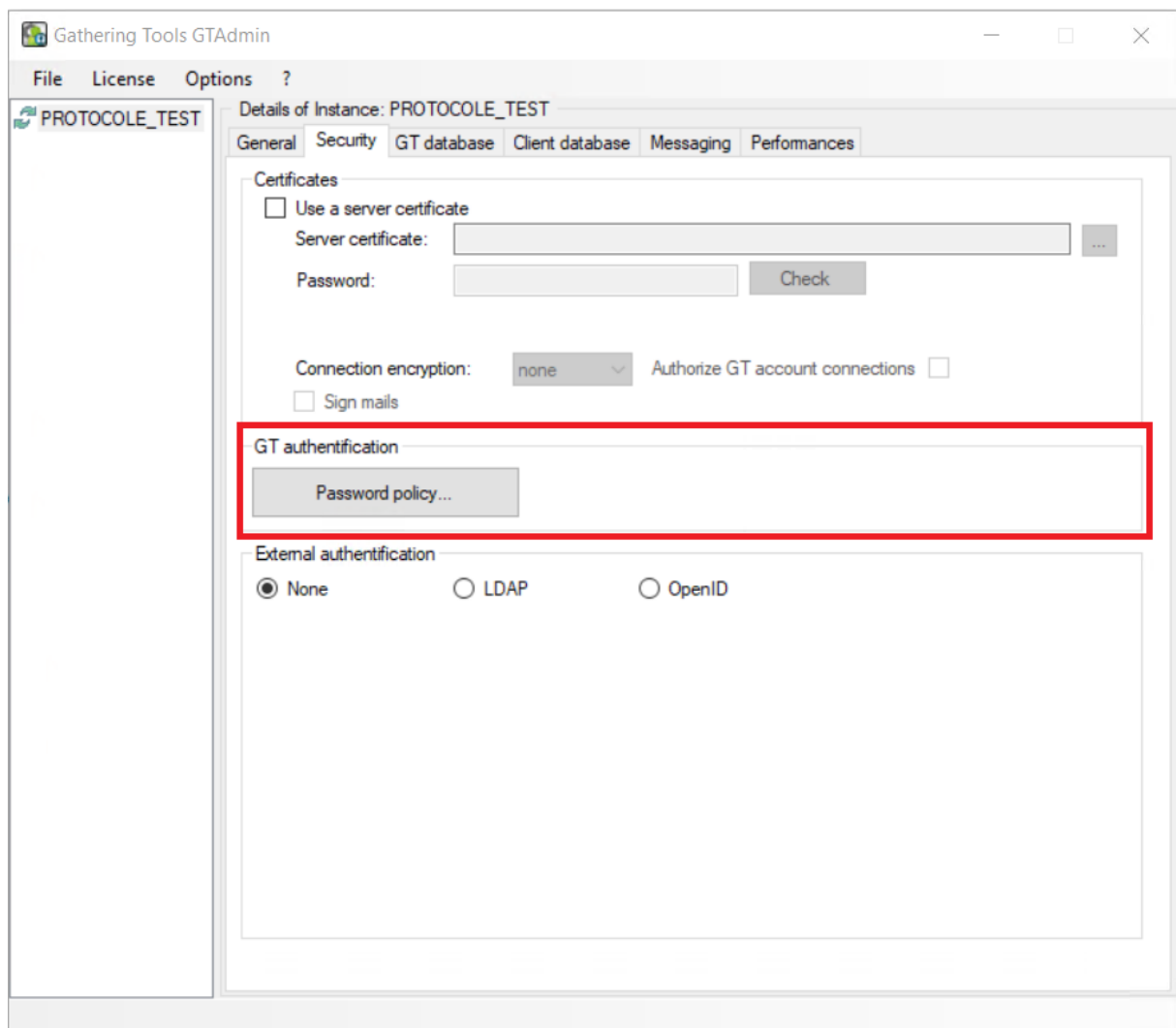If a certificate is required for encrypting communications between GTServer and GTAnswer or for authenticating sent GT documents and for encrypting data transmitted by GTAnswer, this panel allows you to fill in the certificate and related information.

Select Next to proceed to the step of configuring the connection to the GT Database.

- Forgotten password: GTServer sends an email containing a new password to the user who has indicated to GTAnswer that he has forgotten his password.

- Does not contain the login: Verifies that the password does not contain the user's login. The comparison is not case sensitive.

- Character Constraints:

    o User constraints (for developers, managers, validators...) :

    o Minimum and maximum size: minimum or maximum number of characters allowed

        ▪ At least one capital letter required

        ▪ At least one lowercase required

        ▪ At least one numeric character required

        ▪ At least one symbol

        ▪ At least one symbol required

    o Administrator Constraints:

        ▪ Minimum and maximum size: minimum or maximum number of characters allowed

        ▪ At least one capital letter required

        ▪ At least one lowercase required

        ▪ At least one numeric character required

        ▪ At least one symbol required

- Lock after xx login failure(s): if the user makes a mistake in the password, the account is locked after the specified number of attempts. Once the timeout period has elapsed, only an administrator can unlock the account. Beware, even if this option is not activated, 10 consecutive mistakes will lock the account.

- Lifetime between xx and yy days: once the password has expired, the user must change it even if these parameters are changed. The minimum is not taken into account if the user has to change his password the next time he logs in.

- Different from the last xx password(s): when changing the password, the user cannot use one of his last xx passwords.

- Dictionary: Verifies that the password does not contain one of the words present in the text file (.txt, .csv...). This file contains one word per line. The comparison is not case sensitive. The file must be accessible by the service account of the instance.

3.2.2.4. Configuring external authentication
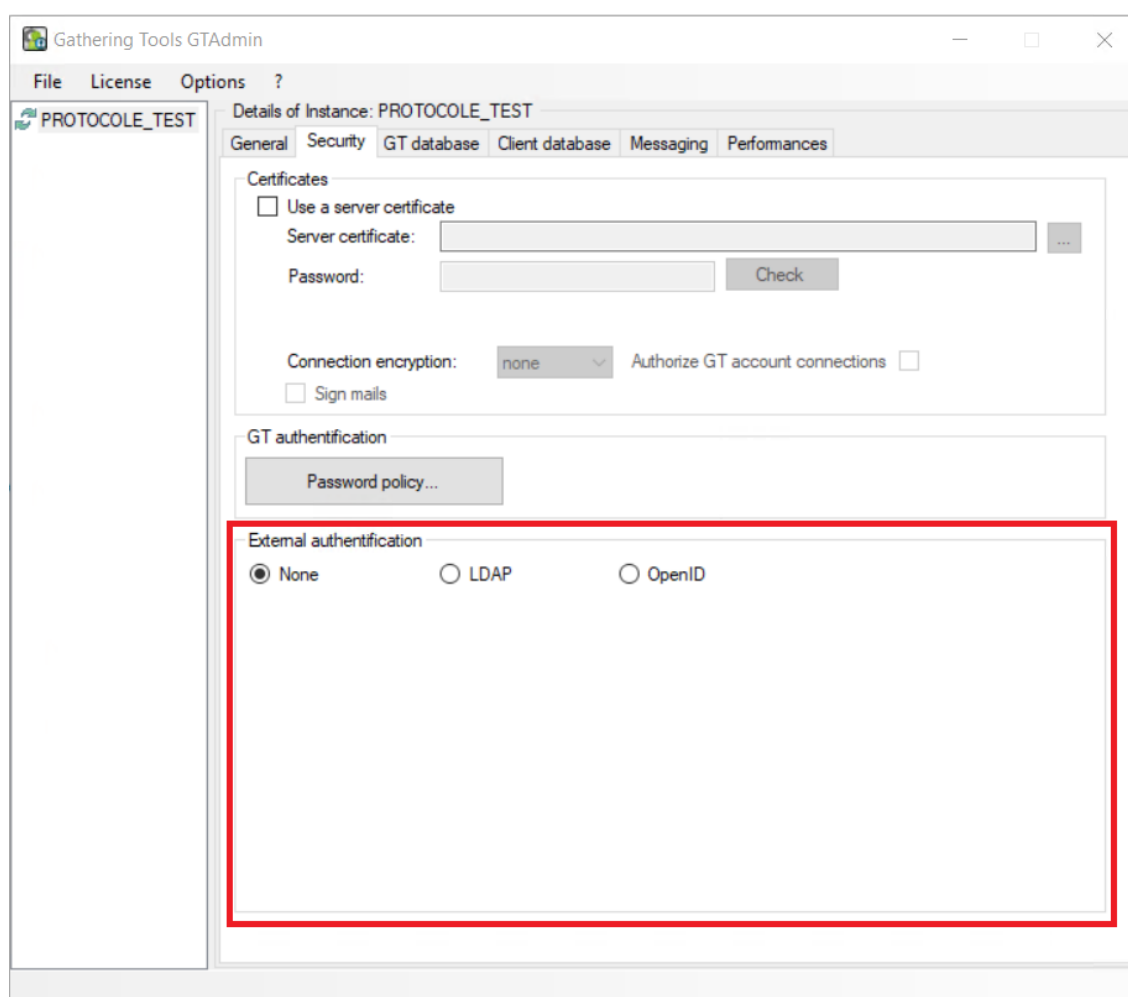
There is two ways of using the external authentication:

External authentication uses your company's directory. Thus, all users of the company can connect to the instance with their usual usernames and passwords. However, they will not have access to any project until rights have been assigned to them:

- Automatically for recipients and respondents via a collection or restitution launch action
- Manually for other user categories (see article: **Users and rights management**)

Note 1: if your instance uses external authentication, you will not be able to create an account creation action: all the accounts are already present in your company directory. User management and rights withdrawal actions will, however, be available.

Note 2: it is possible to combine external authentication and GT authentication, but in this case, only administrators can be declared via GT authentication.

Those two protocols are used to authenticate the user who wants to connect to the instance.

GT only supports LDAP version 3.

The entry in the LDAP directory must contain the following attributes:

- "mail" : user's email

- "distinguishedname" : the user's complete DN

In GTAdmin, you must fill in :

- **Server** : IP address, domain name, LDAP server name (if on the same network)

- **Port** : port used for connection (default 369 for LDAP and 636 for LDAPS)

- **SSL** : If the connection needs to be encrypted (if yes LDAPS connection otherwise LDAP)

- **Search Scope** : For "One level", the search applies only to users in the specified user DN. For "Subtree", the search applies to all subtrees of the specified user DN

- **User DN** : Complete DN (Distinguished Name) of the LDAP tree where the users are located, this DN is the parent of the LDAP users

- **Username Attribute** : Name of the LDAP attribute that is associated with the GT username. For many LDAP providers this will be 'uid', for the active directory it may be 'sAMAccountName' or 'cn'

- **Admin DN** : DN of the LDAP administrator, which will be used by GT to access the LDAP server

- **Admin Password** : LDAP Administrator Password

2) OIDC authentication

The information necessary for the proper functioning of any OAuth authentication is:

- You must enter in GTAdmin:

    o Autorisation Endpoint (url)

    o Token Endpoint (url)

    o Client id

    o Scope : must contain access to the user's email

    o User profile Endpoint (url)

The user profile must contain the following fields:

    o "preferred_username" : username that will be used by GT

    o "email" : user's email

    o "given_name" (optional): user's first name

    o "family_name" (optional): user name

Redirection address 127.0.0.1:1327

Client secret is optional: It is a secret password that only you and the authorization server know. This allows you to share information securely and confidentially. It is a symmetric key that is used to encrypt exchanges between the application and the authentication server.

Note:

When you set up your instance so that users can be authenticated from your corporate d
irectory, this is theoretically equivalent to creating a responder GT account for all users in
 the directory. However, if you look at the user list for the instance (by logging into GTAns
wer as an admin or from the GTAdmin interface), you will see that the instance doesn't co
ntain all of the users referenced in your directory.

However, each user will be able to connect to GTAnswer with the credentials that allow
them to connect to the group directory. And when he logs in for the first time, a GT account
will be created with his external login. From then on, this user will be visible in the list and
can be assigned rights in the usual way.

So, nothing changes for the users, except the login button they will have to click on to
connect. And nothing changes for the developers: you can perfectly well execute a
campaign launch action whose assignment relationship refers to users who don't yet have
an account: as soon as they log in they will be assigned a respondent account.

However, if you want users to be assigned rights other than respondent (i.e. administrator,
developer, manager or validator), then you will have to ask these users to log in at least
once in GTAnswer in order to make them appear in the list of users so that you can assign
them the appropriate rights.

3.2.2.5. Configuring the connection to the GT Database

The GT Database is a database (or schema within a database) containing only data belonging to the GTServer. It is not to be confused with the client database which is an open database (developed by the GT designer and containing no proprietary data).

This panel allows you to configure the connection to this database.

First choose the type of database and then enter the connection information.

In the case of Oracle, it is preferable to specify as server the SID described in the tnsnames.ora of the Oracle client.

Specifying ports other than the standard ports for the connection to the GT Database instance can be done in the same way as for the client database (see 3.1.3.4).

The additional parameters of the database connection are used to specify, in text form, the additional information to be sent to the database driver used by GTServer.

Once all parameters are entered, test the database connection.

If no GT Database was detected during the connection test, select "Initialize GT Database".

Please note that the initialization can only be performed correctly if the prerequisites

(especially concerning the rights and default schemas of the connection user to create the GT database) are met (see 2.1.2 and 2.1.4).

Once the GT Basis has been initialized, the specified logon user can be changed to a user with more restricted rights.

If the database already exists (after a migration for example) you must not initialize it, if you do you every information in the database (users, models, actions, publications, …). After a migration, the database must be **updated**. If the button does not appear during after testing the database, you should continue the creating your instance, and come back to this tab later, once the creation is over, click on test and the button should appear.

Users can only be created once the instance has been assigned to an instance number of the license key.

3.2.2.6. Configuring the connection to the client base

First choose the type of database and then enter the connection information.

In the case of Oracle, it is preferable to specify as server the SID described in the tnsnames.ora of the Oracle client.

Specifying ports other than the standard ports for connection to the Client database instance can be done in the following way:
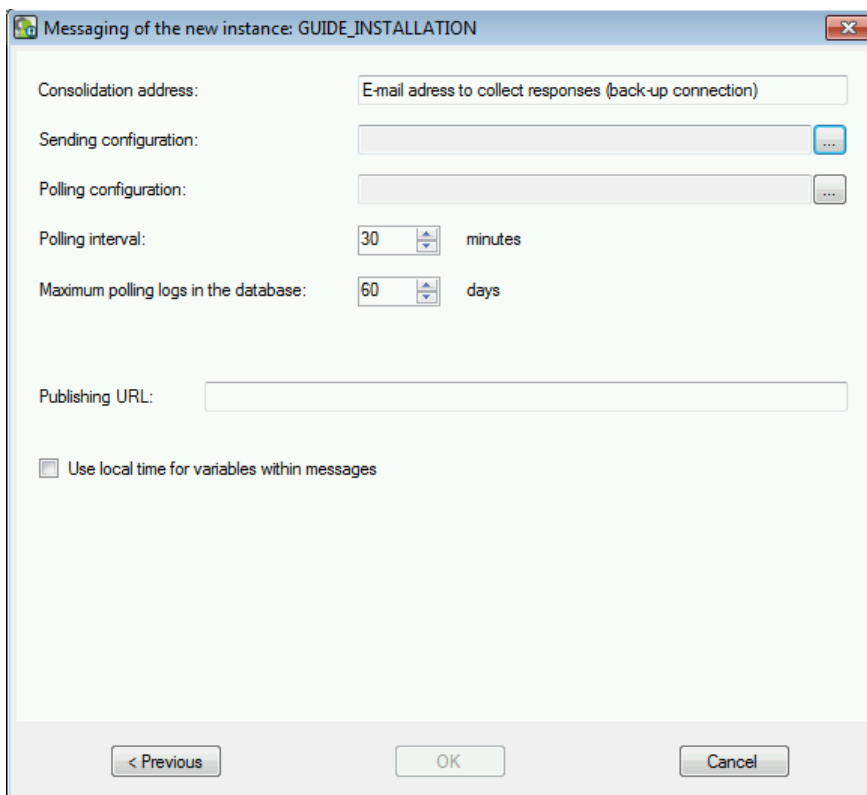
SGBD	Writing a specific port
SQL Server	Changing the server's name
Oracle	Change the server's name or change the SID in tnsnames.ora The server's name can be the corresponding tnsnames.ora entry OR IP_address:number:port/instance_SID
Postgres	Using the port text box in the graphical interface
DB2	Changing the server's name IP_address:port_number

The additional parameters of the database connection are used to specify, in text form, the additional information to be sent to the database driver used by GTServer.

Once all parameters are entered, **test the database connection**.

Click the Next button to proceed to the mail connection configuration step.

3.2.2.7.Mail connection configuration (sending and receiving)
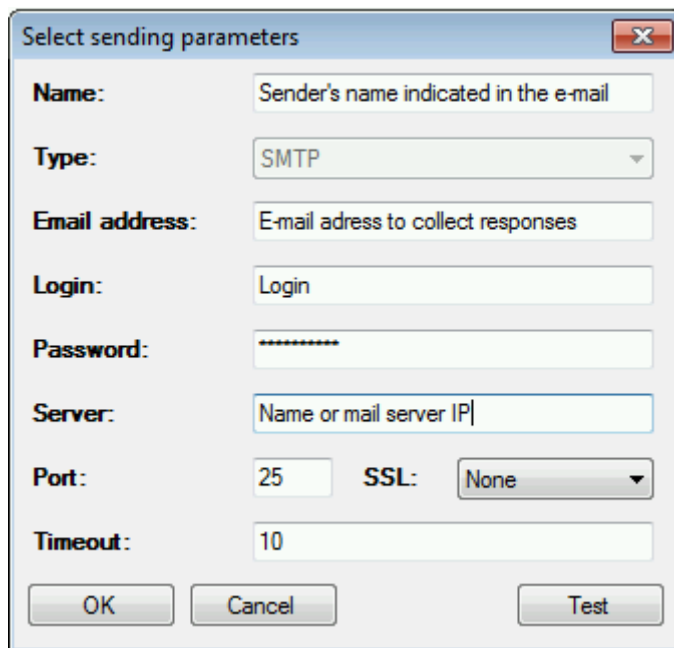
Specify the consolidation address. The consolidation address must be the e-mail address associated with GTServer. This is the address to which the GTAnswer module will send reply mails when replying to GT campaigns by e-mail (and not as an http reply via GTWeb).

The sending configuration and polling configuration can be accessed with the corresponding " ... " buttons.

First define the configuration mode for sending messages with the corresponding "..." button.
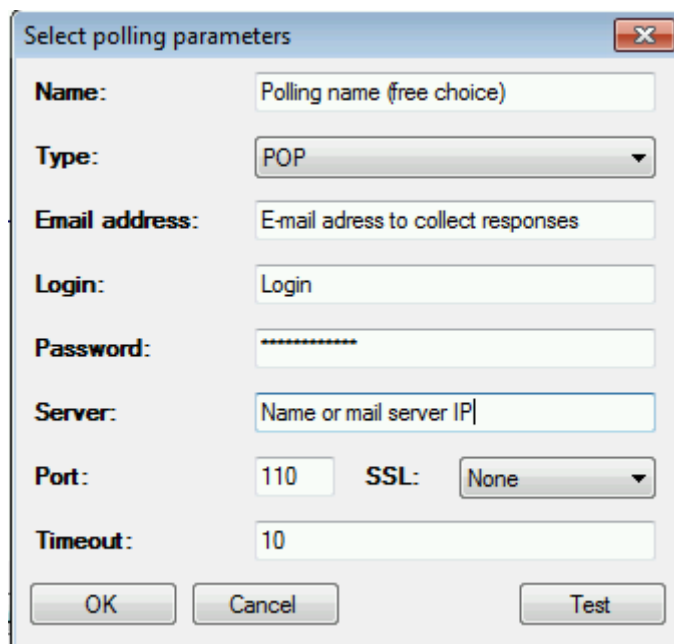
The SMTP sending mode is mandatory: it allows the sending of notifications and mails.

Then define the polling configuration for receiving GTAnswer responses by e-mail (corresponding ... button).

The polling configuration is not necessary if all sent questionnaires receive a response from GTAnswer in HTTP (parameter defined when creating the action if a publication url exists for the campaign).

An IMAP folder must be designated under "Mailbox".

The name INBOX is usually used to designate the inbox folder for incoming mail.
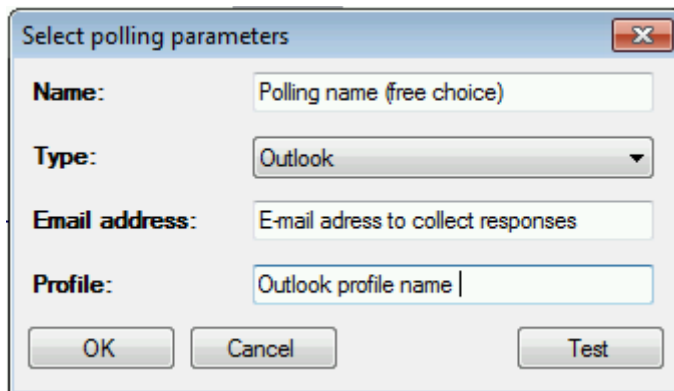
Polling configuration specifications for Exchange (Outlook)

An Outlook client must be installed on the computer

An Outlook mail profile must be set up in the service account profile.

This profile must be specified in the connection configuration of the Gathering Tools instance.

Information to be defined:
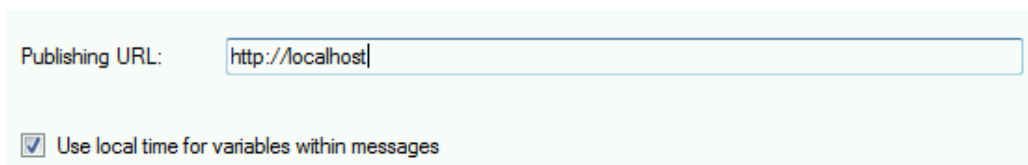
URL publication

The publication URL allows you to specify the URL of GTWeb used to make a GTWeb instance and a GTServer instance talk to each other (see installation of GTWeb § 3.2.1).

The " ... " button allows you to check that the publication URL is correctly written. This button launches the default browser with the publication url.

Depending on the version used, the arrival page contains either the Gathering Tools logo or a message (cf **Tests d'**URL).

To use the new GTWeb ,available since the version 2018, you need to tick the box.

The publication URL is shared by all instances and contains only the web server. The checkbox must be selected to use the new GTWeb.

Default configuration
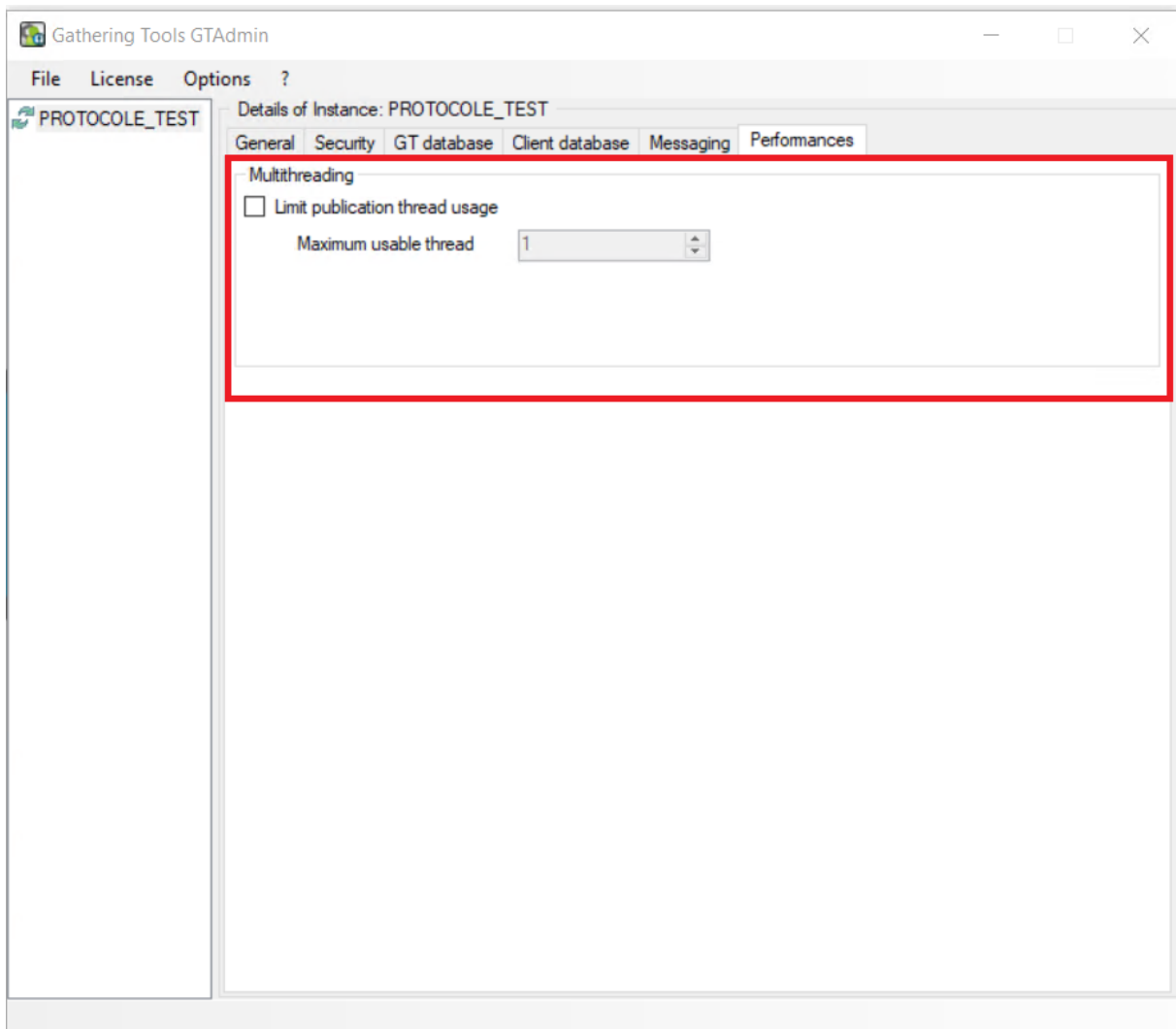
GTServer uses multithreading and takes advantage of a processor's ability to process multiple threads (threads) at the same time across multiple cores. Instead of tasks or instructions running one after the other, they run simultaneously.

GTServer leverages all default resources to allow you to speed up your application's responsiveness when launching a publication and, if your application is running on a multiprocessor or multi-core system, accelerate its throughput.

The "Limit publication thread usage" checkbox is cleared and the "Maximum usable thread" drop-down menu is inaccessible (grayed out).

Limiting Threads When Launching Publishing

If you need more control over the behavior of the application's threads when launching a publication, you can manage the threads yourself and limit the number that can be used.
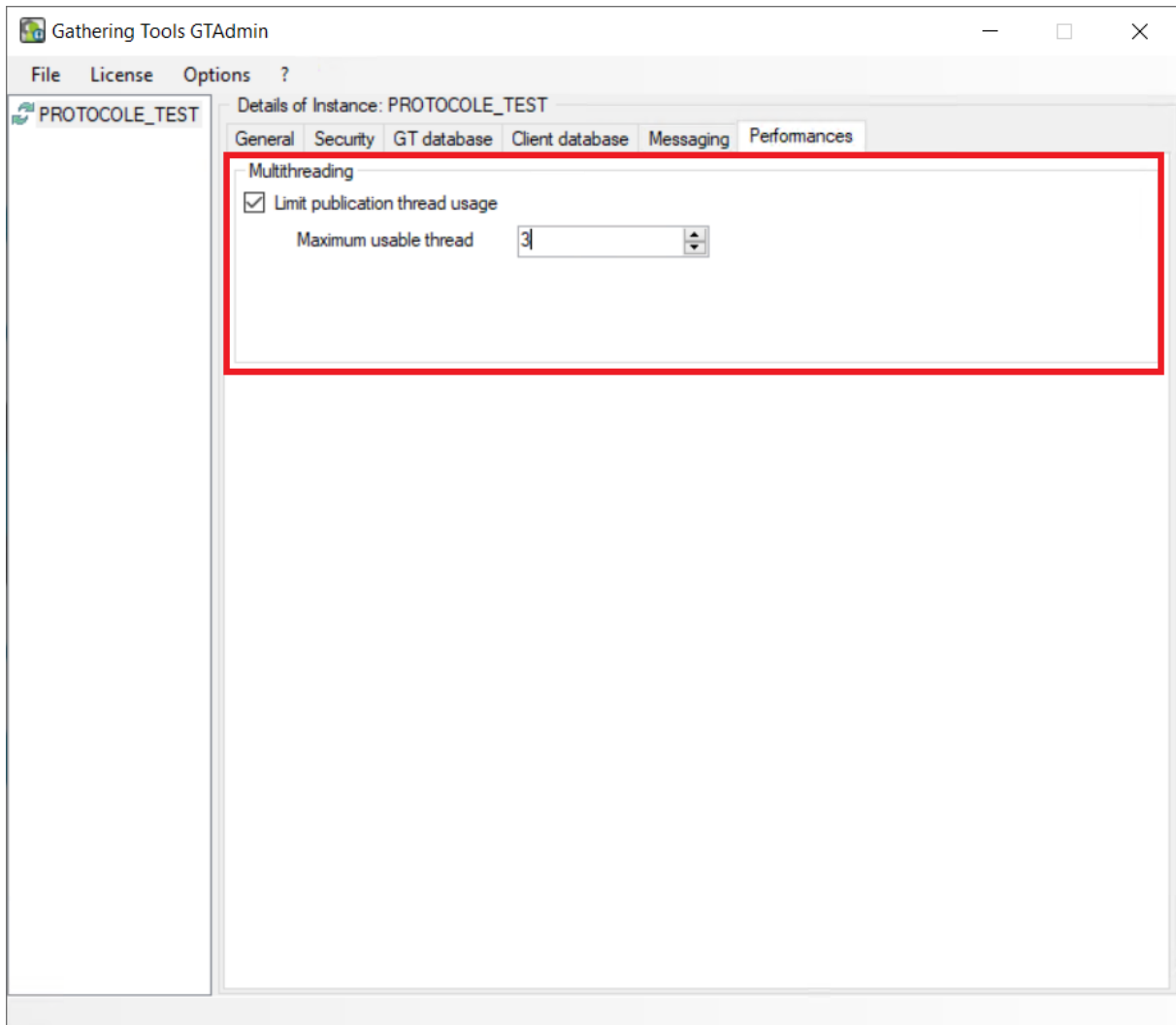
You need to check the "Limit publication thread usage" box, the "Maximum usable thread" drop-down menu becomes accessible (white), and you can then set the maximum number of threads you want.

3.2.2.9.   *Assigning the Instance to an Instance Number of the Key*

Validate your instance configuration

Assign the instance to an instance number of the license key: see § 3.1.2.4.

Once the instance is created and assigned to an instance number in the license key, users can be created.

3.2.2.10. User creation

The instance must have been assigned to an instance number in the license key, see § 3.1.2.4.

From the GT Base tab of the instance configuration, click on the Users button to create a new Gathering Tools user.

User modifications/additions/deletions are saved in the GT Database of the instance and do not depend on the instance configuration saved in GTAdmin.

» Click on the "New User..." button to create a new user.

Give a login name and password to this user.

Check the "Must change password next time login" option to force the user to change the password the next time. This option is independent of the minimum password lifetime.

Specify the Administrator privilege for this new user.

It is preferable to create at least **one administrator** for each instance.

Only an administrator can create new users.

The creation of new users can be done via GTAdmin (on the server workstation) or via GTAnswer: the other users of the project can be created with GTAnswer by a user connected with an administrator account.

The identifier is used to filter the rights of managing users on such and such entities queried with GT documents (this filter is carried out using a view or a table in the client database).

You can impose constraints on user passwords by activating the corresponding option for the instance in the "Security" tab via GTAdmin.

Validate the creation of the new administrator user.

Create other users as needed.

Confirm the creation of users then click on the Next button in the PC-based configuration to go to the next configuration step.

When the GT base is an embedded Firebird base, the GTServer service must be stopped for GTAdmin to create users. Reciprocally, GTAdmin must be closed for the GTServer service to access the GT base and work properly.

3.2.2.11. Manager and Validator User Licenses

For each instance can be defined a number of administrators, developers, managers and validators according to the **licenses acquired** for the Gathering Tools suite.

Users created with the Administrator privilege consume an Administrator license.

Users created with the Developer privilege consume a Developer license.

The license consumption for Managers and Validators users depends on the rights granted to a user for all the questionnaires of the instance.

The rights that can be assigned to a user (via a Group) can be viewed in groups (via GTAnswer, button "Manage Groups"). The complete list of rights for a manager can be visualized in the "Manage Groups" box.

A user will consume a Validator license if he is only associated to groups containing only all or part of the **5 following rights:**

- List campaigns (List block)

- List the answers (List block)

- Validate/Invalidate an answer (Answer block)

- View an answer (View block)

- View a sent questionnaire (View block)

A user will consume a Manager license if he is assigned a group containing any rights other than the Valid rights above.

3.2.2.12. Case of responding users

The number of respondents is unlimited and is not subject to licensing. The number of respondents is not included in the cost of licenses.

3.2.3. Install/start the service of an instance

Each GTServer instance is associated with a separate Windows service.

A GTServer service is named:

Calame GTServer Instance_Name

GTServer services are administered in the same way as other Windows services.

For each GTServer service, a Windows event log is created when the corresponding service is installed in GTAdmin.

After the creation of an instance in GTAdmin, it must be assigned to an instance number of the license key (see 3.1.2.4).

The GTServer service for this instance must be installed.

Select the newly created instance in GTAdmin (in the list of instances on the left).

Display the context menu and choose "Install service".

Fill in the service account information and validate the service installation.

Under Windows, requests for rights elevation can be made by the system to install, start and stop the service via GTAdmin.

Once the service is created, it can be started or stopped using the context menu on the corresponding instance or using the usual Windows service management tools (net start, net stop, sc, ...).

3.2.4. Migrating a GTServer installation to GTServer 2022

3.2.4.1. *Preparing for migration: Safeguarding models and actions, closing campaigns*

The first step is to make a backup of the templates and actions by launching GTAnswer, connecting to each GTServer instance and saving the templates and actions with the File->Export command.

When installing the 2022 version over a previous version (from 3.0 to 3.7), all campaigns from existing instances will be deleted.

The campaigns will be deleted when updating the GT databases.

It is mandatory to consult the campaign manager to ensure that campaigns are closed and have been integrated.

3.2.4.2. *Updating GTServer*

GTServer services that are running must first be stopped.

Launch the SetupGTServer.exe executable which will update the GTServer module installed on the workstation.

Once the installation is complete, launch GTAdmin.

For each instance, check that the service is stopped, then in the "Base GT" tab, click on the "Test" button.

A message appears specifying that the database must be updated.

Click on the new "Update" button.

If the original version is prior to 3.7, you will have to specify the license key of the server, if this has not already been done, and assign the instances declared in GTAdmin to the instance numbers of the license key (see 3.1.2.2 and 3.1.2.4).

The instance service can now be started.

3.2.4.3. Deployment complements

GTServer

SetupGTServer.exe updates GTServer.exe and associated modules that are used for all instances running on the server.

Questionnaires sent with this version of GTServer will have to be opened by correspondents with an Answer whose version is the same as GTServer. The correspondents will still be able to open the old 3.7 questionnaires and answer them.

All GTAnswer pointing to the updated instances must also be updated using the same version as **GTServer.**

GTAnswer

When GTAnswer 2022 is installed and associated with the .qstx files, an AnswerLegacy.exe executable (Answer version 3.7) is installed at the same time, this 3.7 executable is associated with the old .qst files.

Thus, the installation of GTAnswer 2022 allows correspondents to open the old 3.7 .qst questionnaires in exactly the same way as with 3.7 (since it is the same Answer executable version 3.7 that opens them) and to open the new .qstx 2019 questionnaires.

3.3. Dedicated web server workstation: GTWeb module

There is no setup to launch, only files to copy. The compressed folder "new_gtweb.zip" contains all the scripts for running the new GTWeb.

3.3.1. Installing GTWeb scripts in a Web server

Login with the administrator account provided for the installation.

The first step of the configuration will be to copy the files to the Linux or Windows machine hosting the host web server.

3.3.1.1. General information on installing the GTWeb module

The files will be copied to the installation directory of your website.

If your website is named (wwwTest) the structure will be as below after copying the files:
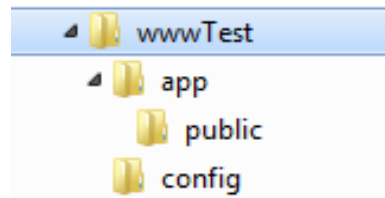
The index.php file is in "public". The root of "app" contains the application (functions.php and process.php).

The configuration of the instances is in "config".

Before installing and configuring GTWeb, we suggest that you perform functional tests to make sure that your Web server is operational, accessible to the

- In php.ini, there are three values to increase:

max_execution_time (Sets the maximum execution time of a script, in seconds. This prevents infinite loop scripts from saturating the server. The default setting is 30 seconds).

post_max_size (Sets the maximum size of data received by POST method. To upload large files, this value must be larger than the upload_max_filesize value).

upload_max_filesize (Maximum size of a file to upload).

3.3.1.2. Web server pre-testing

Web server up and running and accessible

- Create a web page on the website if one does not exist

Example of minimum web page content (to be written in a text file renamed to TestAcces.html for example):

<!DOCTYPE html><html><body> ACCESS WEB PAGE OK </body></html>

You can also use the sample Web page TestWeb_01_Acces.html from the GT installation test files.

- Try to access this web page from a browser running on the machine where the web server is running (with access in http(s):// and not in queue://)

- Try to access this Web page from a browser running on a respondent's machine.

Both access tests must display in the browser the text contained in the example page.

Operational PHP engine

- Create a php page on the website if it does not exist

Example of minimal PHP script content (to be written in a text file renamed to Test.php for example) :

<php echo "PHP ACCESS OK </br></br>"; phpinfo(); ?>

You can also use the sample PHP page named TestWeb_02_PHPOn.php from the GT installation test files.

- Try to access this web page from a browser running on a respondent's machine.

The access test must show the PHP page content without errors.

PHP engine to use file uploads

- Create a php file upload page on the website if none exists

Example of minimal PHP script content (to be written in a text file renamed to TestWeb_03_PHPUpload.php) :

<?php

if (!isset($_POST["submit"])

{echo   '<form   action="TestWeb_03_PHPUpload.php"   method="post" enctype="multipart/form-data">

Select file to upload:

 <input type="file" name="userfile" id="fileToUpload">

   <input type="submit" value="Upload File" name="submit"> </form>';exit;}

if (is_uploaded_file($_FILES['userfile']['tmp_name']) {

   echo "Upload OK</br></br>";} else { echo 'ERROR Upload</br></br></br>';l}

echo 'Debug Infos :</br>';print_r($_FILES);?>

You can also use the sample PHP page named TestWeb_03_PHPUpload.php in the GT installation test files.

- Trying to upload a file by accessing this PHP page from a browser running on a respondent's machine.

The file upload test should result in a page starting with the text Upload OK.

TCP/IP access to GTServer

If you are not sure about the TCP/IP access from GTWeb to the server, install GTAnswer on the machine on which GTWeb runs and configure an alias to the GTServer (see § 3.3).

Check that you can connect with GTAnswer.

3.3.1.3. Installing GTWeb in an Apache server

The root of the virtual host must be the "public" directory.

Example (Apache 2.4)

```
<VirtualHost *:80>

    ServerName localhost

    DocumentRoot D:/site/app/public

    <Directory "D:/site/app/public">

        Options +Indexes +Includes +FollowSymLinks +MultiViews

        AllowOverride All

        Require all granted

    </Directory>

</VirtualHost>
```

The next step is the creation of alias files designating the GTServer instances (essentially ip/name of the GTServer machine and port) to be contacted by the GTWeb scripts.

Refer to § 3.2.2 for the creation of these alias files (if you want to add aliases or if you did not create any aliases when running SetupGTWebScripts.exe).

3.3.1.4. Installing GTWeb in an existing IIS server

On IIS, perform the following operations:

Add a site that points to public (here wwwGTWeb = site)
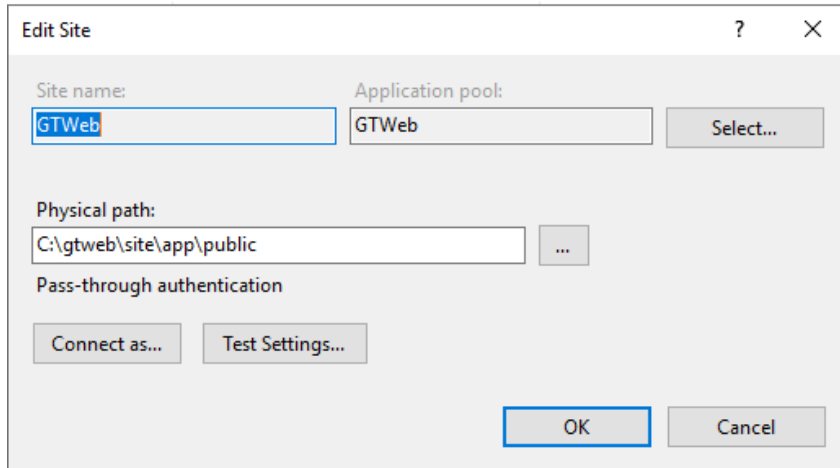
The next step is the creation of alias files designating the GTServer instances (essentially ip/name of the GTServer machine and port) to be contacted by the GTWeb scripts.

Refer to § 3.2.2 for the creation of these alias files.

3.3.1.5. URL Testing

In a browser, enter the URL

http://[server]/index.php?alias=[instance]&t=1

Any value can be set instead of 1 for parameter t. If your web server is listening on the default port 80 you will only have to indicate its name, but if it is listening on another port you will have to add the port number after the server name, for example if 81 is the port number, the URL will be defined as follows:

http://[server:81]/index.php?alias=[instance]&t=1

Output example :

No conf file

No config file or file not readable for instance machin

- GTServer not started
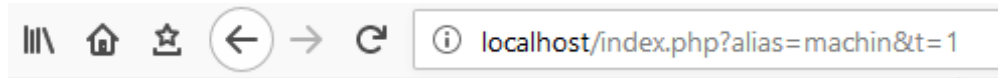
GTWeb: OK.
Communication with GTServer failed.

- URL and servers OK :
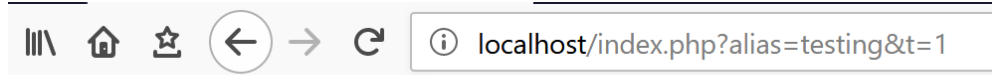
GTWeb: OK.
GTServer: OK.
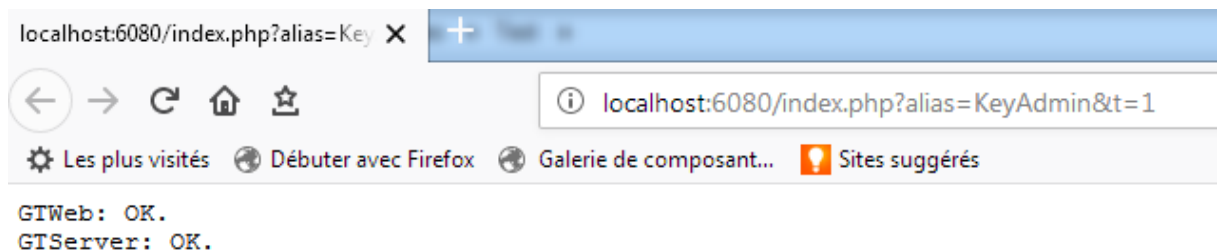
3.3.2. Description of a .conf file (GTWeb instance to a GTServer instance)

Conf files are text files defining aliases/ GTWeb instances each pointing to a GTServer instance.

The file name must be "instance_name.conf". The file name is case sensitive.

These .conf files must be created and placed in the "config" directory.

The content is compatible with the old GTWeb. It must contain at least 2 entries:

IPADD=IP of the instance server

PORT=Port of the instance

Optionally, it can contain the SSL settings via SSLMODE

> SSLMODE=tls

And the TCP/IP receive timeout parameter between GTWeb and GTServer (in seconds)

> TIMEOUT=60

There is no longer any need to specify the version of the protocol.

Example of a .conf file to access a GTServer version 2022 instance

```
IPADD=127.0.0.1
PORT=3000
```

3.4. Developer/manager position: GTAnswer modules, Design

3.4.1. Installation of GTAnswer and Design

Run SetupGatheringTools.exe or SetupGatheringTools64.exe.

Follow the installation.

Click on the Next button to select the profile to be installed from the list.
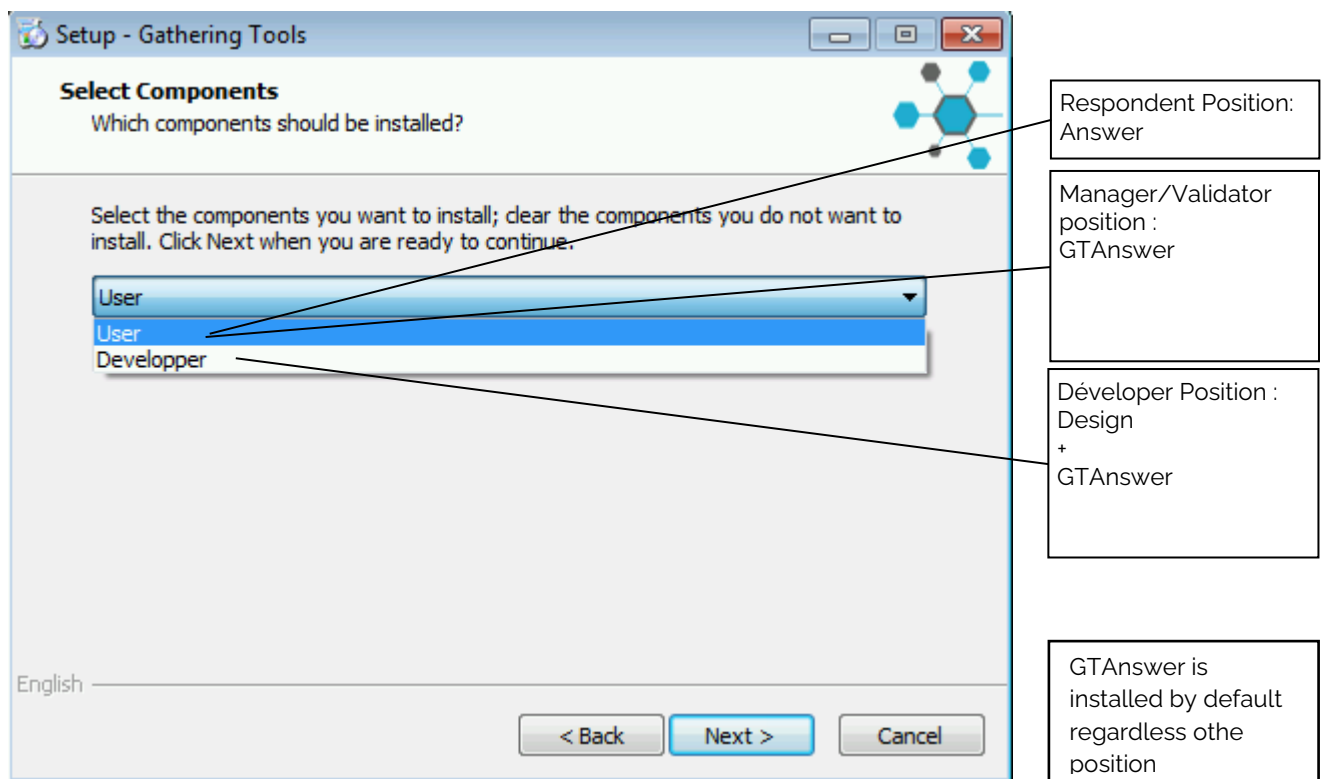
In the case of an installation for a Developer workstation, the setup will install Design and GTAnswer.

In the case of an installation for a Responder workstation, only GTAnswer is installed.

In the case of an installation for a Manager/Validator workstation, only GTAnswer is installed.

Unroll the installation wizard by choosing the default options that will suit most cases.

3.4.2. Configure, in GTAnswer, the connection parameters to an instance

GTAnswer is the client module of the Gathering Tools suite, it connects to an existing GTServer instance.

Launch GTAnswer

Select the "Manage Instances" command on the login page.
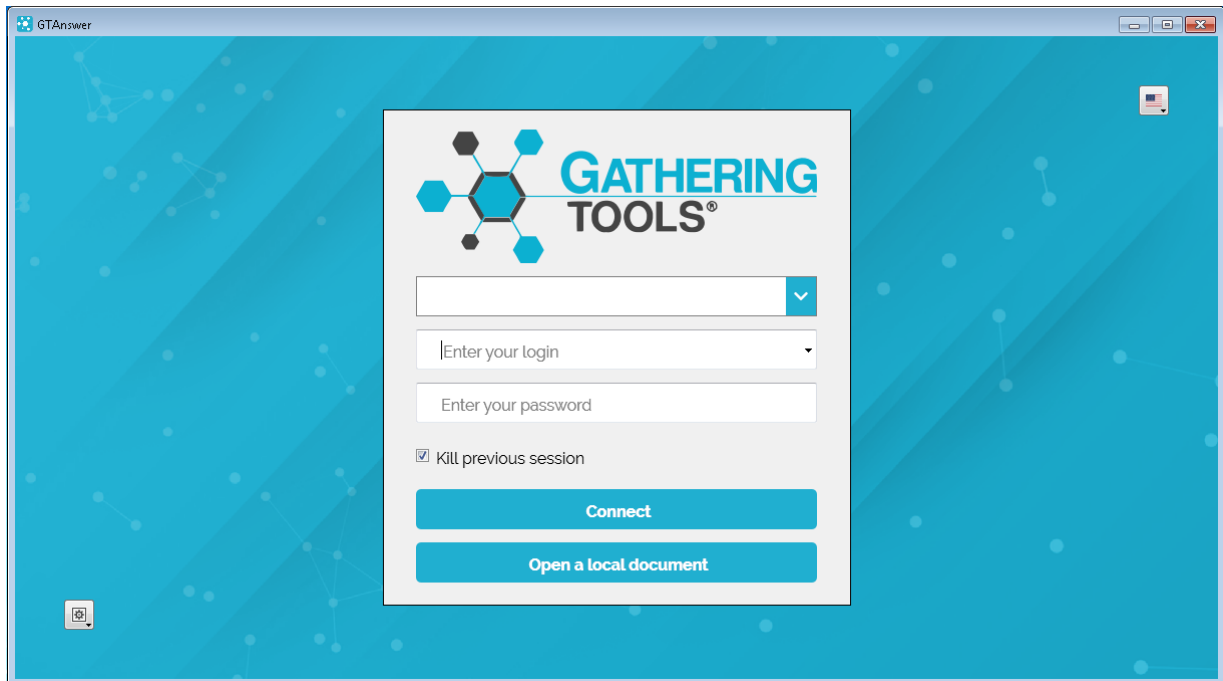
Click the Add button to declare a new instance or the Edit button to modify an existing instance declaration.

HTTP(S) connection:

The alias name must be the same as the instance name with the same case.

The URL is the URL of the website. It is shared by all instances on this site (this is different from previous GTWebs).

TCP/IP Connection:

Once the connection to the instance has been set up, the connection can be made on the connection screen

4. Deployment of GTAnswer

4.1. General

GTAnswer, like all other modules, does not install any executables or associated files in the Windows directory.

Application configurations are specified in the registry (HKLM or HKCU entries) and/or in the directory associated with the application (c:\ProgramData\Calame\GTServer for example for GTServer).

4.2. GTAnswer, installation and configuration modes

4.2.1. Modes of installation

Mode	Description	Terms and Conditions	Remarks
Local	Locally installed executables	Setup A) Setup manuel B) Command line setup Configuration A) manual B) file copy	
Remote App Ms / Citrix…	Application Sharing/Virtualization	Cf selected infrastructure for application sharing	

During installation, the Setup :

- copies the executables, by default in \Program Files\GatheringTools \ if the setup is launched with administrator rights.
  In the case of standard user rights, the installation is done either in C:\Users\{name}\AppData\Roaming\GatheringTools or in C:\Users\{name}\AppData\Local\Programs\GatheringTools depending on the operating system.

- associates the GTAnswer.exe executable with two file extensions: ".qstx" and ".checkmail". Files with ".qst" extension (files of versions <=3.7) are associated with the AnswerLegacy.exe executable.

- registers registry entries in HKLM\Software\Calame\Answer (when installing with administrator rights) or HKCU\Software\Calame\Answer. If an entry exists in HKCU, it will be considered by GTAnswer in priority over the equivalent entry in HKLM. These entries must be preserved between two Windows sessions for the same user.

The configuration of GTAnswer consists only in:

- A file describing the characteristics of each instance alias

- Client certificate files when instances require client certificates.

- The registration of GTAnswer in the Windows environment (file association and registry registration) can be done from the command line (see 5.3.4).

- GTAnswer configuration (connection to the mail server in the case of a mail response) can be done on the command line (see 5.3.4).

To deploy the configuration files and the associated:

1) Installing GTAnswer on an initialization machine (manually or command line)

2) Create from GTAnswer the aliases that users will need by testing the connection each time but without keeping the password. Each alias corresponds to a .conf file in the user's AppData/Calame directory (by default C:\Users Username \AppData/Local/Calame/Instances).

3) Copy the .conf files created on this initialization machine (as well as the certificate files) to the equivalent directory of the machine to be configured for GTAnswer.

4.2.2. GTAnswer: Command line installation

The command line installation is carried out with the following command

"Location SetupGatheringTools.exe file\ SetupGatheringTools.exe" /VERYSILENT

4.2.3. Rights required during installation

The GTAnswer module can be installed:

- With administrator rights (files copied to Program Files and registration in HKLM).

- Or with standard user rights (files copied to My Documents and registration in HKCU).

In the case of an installation with a standard user, GTAnswer will be installed in the user's profile and the file associations will be available only to that user of the machine.

If GTAnswer is installed with administrator rights, it will be installed by default in the Windows program directory and the file associations will be available to all users.

In the general context of deployment and maintenance, if GTAnswer is installed with administrative rights, all GTAnswer updates will have to be performed with administrative rights.

Finally, if GTAnswer is first installed with standard user rights, and then again with administrator rights, all updates to GTAnswer will have to be done with administrator rights.

 with administrator rights. The standard user of the first installation will continue to use his own version of GTAnswer. It is therefore highly recommended in the case of an installation with standard rights and then administrator rights to uninstall GTAnswer from the profile of the standard user.

4.2.4. GTAnswer: Command-line installation and configuration

The GTAnswer configuration is stored in the registry.

The GTAnswer configuration parameters via the command line will be filled in the HKCU entries of the registry corresponding to the user who executed the command line. If the installation is carried out with an administrator account, the profile (registry entries) of this account will be configured.

The command line installation is carried out with the following command

```
"c:\xxxxxx SetupGatheringTools.exe" /VERYSILENT [optional arguments].
```

The following paragraphs describe additional optional arguments for installation and configuration. When an argument requests a parameter, it is entered on the command line according to Microsoft standard syntax by prefixing with a / and separating argument and value with a = character:

```
/ArgumentName=ArgumentValue
```

4.2.4.1. Installation parameters

Parameter	Description	Values	Remarks

//TYPE= " Module installed".	GTAnswer
	
	GTAnswer
	
	GTAnswer + Design
		`Answer`
		
		`Manager`
		
		`Developper`	

/LANG=language	Installation language (the user can change this setting via the GTAnswer interface)	En At	The language is chosen by default according to the system language.
/NOICONS	If present, shortcuts are not created		
/GROUP="group name"	Group of icons in the start menu where to install GTAnswer shortcuts		
LOG="installation log file path"	Full path to the installation log file		
/SUPPRESSMSGBOXES	No display of dialog boxes		

4.2.4.2. Update parameters

Command to update GTAnswer on the workstation without changing the configuration.

c:\xxxx SetupGatheringTools.exe /VERYSILENT

As a reminder, GTAnswer should be updated with the same rights as the installation. If GTAnswer was installed with administrator rights, it can only be updated with administrator rights.

4.2.4.3. Configuration parameters

The most important configuration concerns the transfer mode of the answer:

- By default, questionnaire responses are transmitted over an http connection (or if synchronization is used), GTAnswer can be configured to use an http proxy if required.

- If the response to the questionnaires is transmitted by e-mail (backup connection), GTAnswer must be configured to connect to the local mail server or mail client (see flow 6.2.1.2).

4.3. Respond Answer mail vs Answer http

There are two modes of response transmission for a user answer:

- Answer by email: Respond sends the answer to GTServer in an email

- http answer: Respond sends the answer to GTServer via GTWeb through an http stream. The following table summarizes the advantages and constraints of each mode:

	HTTP Response	Reply mail
Advantages	Minimum GTAnswer configuration (only proxy settings if different from system proxy) Allows the synchronization of data, checking the validity of the questionnaire,	Requires only the existing mail infrastructure
Constraints	Copying GTWeb scripts Answer.exe must be able to open an http stream to the GTWeb server. Securing the Web server hosting GTWeb Reminder of network flows: see 6.2.1.1.	POP/IMAP connection from GTServer to the mail server (in addition to the required SMTP connection in all cases). Or installation of an Outlook or Notes client. POP/IMAP connection from GTServer to the mail server (in addition to the required SMTP connection in all cases). Or installation of an Outlook or Notes client. GTAnswer must be configured on each respondent's workstation to communicate with an SMTP server or the local Outlook or Notes mail client (the configuration wizard is usually sufficient if a mail client is already configured). Reminder of network flows: see 6.2.1.2

5. Maintenance

This chapter describes the execution logs and recalls some of the maintenance operations to be carried out.

5.1. Implementation logs: description and recommendations

GTServer logs execution information in two different types of logs:

- log files (located in the application's log directory)

- in the **Windows application logs** (a Windows log is created for each GTServer instance when the service is installed)

The information is recorded in the log files in a cycle. The first instance configuration screen in GTAdmin allows you to define the maximum number of log files and their size; when a log file is full, the information is deposited in the next non-existent log file or the one that has been used the longest.

The information deposited in each type of log file can be configured for each instance via the instance configuration dialog in GTAdmin (checkbox lists on the first screen).

Description of the information deposited in the logs:

Wording in GTAdmin	Description	Recommendation for file logs	Recommendation for Windows application logs
Errors	Error Messages	Yes	Yes
Avertissements	Warning messages	Yes	Yes
Informations	General descriptive messages	Yes	
Orders	Trace of external process starts		
SQL Queries	SQL sentences sent to the client database		
Debug	Information for the use of Calame		
Execution time	Execution Time for External Processes and Certain Internal Operations	Yes	
Communications	Trace of TCP connections received (from the clients)		

5.2. Network flow, Security

5.2.1. Network flow matrices

Cases with GTWeb without email response

The GTWeb module is used to route the response from the correspondent's workstation to GTServer or for data synchronisation (retrieving the latest version of the data from GTAnswer) or for http verification or http broadcast.

No response is transmitted by e-mail.

Default Ports	Destination					
	80	None	3000	According to DBMS	According to SGBD	25 or 465 (SMTP)
source	GTWeb	Mail server(s) for GTAnswer	GTServer	Customer Database	GT Database	Mail server for GTServer
GTWeb			TCP/IP (+SSL/TLS) proprietary protocol for the application layer (OSI)			
GTAnswer in http (or client Automation	http ou https Proxy possible (auth basic digest)					
GTAnswer in TCP/IP (or Automatisatio client			TCP/IP (+SSL/TLS) proprietary protocol for the application layer (OSI)			
GTServer				via the .NET database client on the GTServer workstation (OLE DB or direct .NET client)	via the .NET database client on the GTServer workstation (OLE DB or direct .NET client)	SMTP (+SSL/TLS)

5.2.1.1. Cases without GTWeb with e-mail response (backup connection)

The GTWeb module is not used, neither for mail response, nor for synchronization, nor for http verification, nor for http broadcast (qstx access url broadcast).

If the GTWeb module is used for synchronization or for the transfer of the response by certain correspondents (in the case of non-homogeneous environments), this matrix can be superimposed with the previous matrix.

Destination						
Default Ports	80	25 or 465 (SMTP) or no other (mail client)	3000	According SGBD	According to DBMS	25 or 465 (SMTP) + 110 or 995 (POP) or 143 or 995 (IMAP) or no other (mail client)
source	GTWeb	Mail server(s) for GTAnswer	GTServer	Client Database	GT Database	Mail server for GTServer
GTAnswer		SMTP (+SSL/TLS) OR use of Outlook or Notes email client (if client used, no direct access by GTAnswer)				
GTWeb						
GTAnswer (or client Automation)			TCP/IP (+SSL/TLS) proprietary protocol for the application layer (OSI)			
GTServer				via the DB client on the GTServer workstation (OLE DB or .NET client)	via the DB client on the GTServer workstation (OLE DB or .NET client)	SMTP (+SSL/TLS) in all cases + POP (+SSL/TLS) OR IMAP (+SSL/TLS) OR through the Outlook or Notes mail client (if client used, only SMTP access through GTServer)

5.2.2. Securing flows

5.2.2.1. Inbound access to GT modules

Flux (Src->Dest)	Via modules GT		Excluding GT modules	
	Flow encryption	Restricted access	Cryptage	Restricted Access
GTAnswer -> GTWeb Via http			- HTTPS pour l'url de GTWeb (configuration sur serveur Web)	- IP restriction allowed on web server hosting GTWeb - Reverse proxy before GTWeb - Password restriction on GTWeb's index.php script (.htaccess type, BASIC and DIGEST authentication, the source can be a text file, an LDAP directory, a database)
GTAnswer -> GTServer Via TCP/IP	-Server certificate per instance (via GTAdmin security tab)	- Strong passwords for GT users (via password constraints) - Verification of client certificates (via GTServer and GTAnswer)	Connection encryption tools (VPN, etc...)	IP restriction allowed on GTServer
GTWeb -> GTServer	- Server certificate per instance (via GTAdmin security tab)	- Strong passwords for GT users (via password constraints) - Checking client certificates (via GTserver and GTWeb)	Connection encryption tools (VPN, etc...)	IP restriction allowed on GTServer
Automation -> GTServer	Idem GTAnswer ->GTServer	- Strong passwords for GT users (via password constraints, for example) - Verification of client certificates (via GTserver and application/script using automation)	Connection encryption tools (VPN, etc...)	IP restriction allowed on GTServer
GTAnswer -> GTWeb			- HTTPS for the GTWeb url (web server configuration)	- IP restriction allowed on web server hosting GTWeb - Reverse proxy before GTWeb - Password restriction on GTWeb's index.php script (.htaccess type, BASIC and DIGEST authentication, the source can be a text file, an LDAP directory, a database)

Notes

- The security modes outside the GT modules are given for information only.

- GTServer for its customers: The configuration is done via GTServer by installing the certificate, then specifying in the client the type of encryption and optionally the client certificate if GTServer checks client certificates.

5.2.2.2. Inbound access to non-GT modules

	Via modules GT		Excluding GT modules	
Flux (Src->Dest)	Flow encryption	Restricted access	Encryption	Restricted access
GTServer -> Databases			- Server certificate and database client configuration	- IP restriction allowed on database server - Strong password for database access account -
GTServer	- configuration of the connection to the mail server		SSL/TLS on the mail server	- IP restriction allowed on mail server and for dedicated mail account GTServer
GTAnswer -> Serveur de messagerie	- configuration de la connexion au serveur de messagerie		SSL/TLS sur le serveur de messagerie	- IP restriction allowed on mail server if direct connection to the mail server by GTAnswer

Notes

- The security modes outside the GT modules are given for information only.

5.2.3. Authentication from the GTAnswer module

2 cases arise:

- If the user has an account, then he or she uses GT proprietary authentication.
- If the user does not have an account, then he or she will receive GT documents (.qstx extension) to fill out. When opening the documents, 3 modes of authentication/identification can be used:
- Mail address validation (PC-specific process)
- Authentication in the Active Directory of the GTAnswer correspondent
- http authentication when accessing GTWeb by GTAnswer

These authentication/identification modes can be combined.

5.2.3.1. Descriptions

- **Email address validation** (specific process GT):

When the questionnaire asks for email address validation, GTAnswer will ask the correspondent to configure his email address and will send an email to this address with a checkmail extension attachment (this one contains encrypted information about the email address and the source user profile, the .checkmail extension is associated with GTAnswer during the installation), this attachment must be opened by the correspondent: this way, GTAnswer makes sure that the Windows user has access to the specified email address.

in the GTAnswer configuration.

Constraints can be built in the questionnaire to prohibit the transmission of the answer (or block some input cells) depending on the validated email address and the content of the questionnaire.

- **Authentication in the correspondent's Active Directory**

When opening a questionnaire requesting authentication in the AD (option of the campaign launch action), GTAnswer will ask the user to enter the password of the active Windows session (or the password of the Windows account associated with the e-mail address of the initial correspondent of the questionnaire). An option is available to check that the e-mail address associated in the AD with the Windows account of the active session is the same as the e-mail address of the initial recipient of the questionnaire (when sent by GTServer).

Constraints can be built into the questionnaire to prohibit the transmission of the response (or block certain input cells) depending on the AD's email address (read in the Active Directory for the active Windows session) and the content of the questionnaire.

- **http authentication when accessing GTWeb via GTAnswer**

Access to the website can be protected by http authentication (defined in the website configuration, excluding GT modules). Both BASIC and DIGEST modes are allowed for http authentication.

The authentication source can be a text file, a database, an LDAP directory or any other source compatible with your web server.

During any GTAnswer access to GTWeb (especially for http verification, synchronization or response transmission), http authentication will be implemented. The authentication information (login and password) will be requested from the user in a dialog box (in the same way as if the url was accessed via a browser). During the same GTAnswer session, this authentication will not be requested again.

This authentication mode allows to limit the access to the opening (via the http check option), to the synchronization or to the transfer of the answer.

This mode does not allow to limit the transmission of the answer (or the opening or synchronization) or the access to certain input cells according to the content of the questionnaire and the login for this authentication.

5.2.3.2.Summary table

Mode	Activation	Blocking	Remarks
Email address validation (Calame specific)	Questionnaire option	May block the transmission of the response (or certain input cells) depending on the content of the questionnaire	More identification than authentication Does not preclude the initiation of the questionnaire.
Authentication in the correspondent's Active Directory	Campaign launch action option	Blocks the opening of the questionnaire May block the transmission of the response (or certain input cells) depending on the content of the questionnaire. Requires the existence of a DA. .	Requires the existence of a DA. Requires that the DA's email addresses are correct for a block based on the content of the questionnaires of an instance. In the 2 sub-modes where the opening of the questionnaire is limited to the accounts associated with the email address of the initial recipient, the transmission of the questionnaire to a third party is only possible for people who can connect to the accounts mentioned above.
http authentication for access to GTWeb	Configuring GTWeb website and script access + options http Check, http Synchronization, or http Response of Campaign Launch Action	Can block the opening of the questionnaire (using the http check option) and/or the synchronization and/or transmission of the http response	Requires, outside the GT suite, to configure the website to access a directory of globally authorized persons for the GT instance. Does not allow to limit access according to the content of the questionnaire.

There is no mode to prevent the opening of the questionnaire based on the authentication information and dynamic content of the questionnaire. Only the authentication information and the initial email address of the correspondent (used by the GTServer) can restrict the opening in the case of authentication via the DA, and in this case, the transmission of the questionnaire to a third party will not be possible.

5.2.4. GTWeb security reminders

It is strongly advised to configure the web server hosting GTWeb to impose a secure https connection. Especially if the GTWeb server is used to communicate with correspondents outside the company's "protected" intranet.

The GTServer instance will have to be configured (via the "Messaging" tab of GTAdmin) with this new url using the https protocol.

If you want to **secure the transfe**r of the response by **GTAnswer**, use the http(s) response, rather than the mail response, (to be configured in the launch action) with a GTWeb url using the **https protoco**l (in the Mail tab of the GTServer instance via GTAdmin).

Installing an additional **Web server as a reverse proxy** for the Web server hosting GTWeb may be a good practice to filter connections before they reach the GTWeb server if the correspondents are outside the company intranet.

When the **GTWeb url is accessible to a large number** of people, it is imperative that the passwords of the GT users are strong passwords to prevent unwanted access to GTServer data.

5.2.5. Restricted access to the questionnaire

The action designer can request that access to questionnaires be restricted by authentication in Active Directory (with or without verification of the email address specified in the AD in concordance with the email address of the questionnaire recipient).

When the GTAnswer module opens the questionnaire on the correspondent's workstation, the latter will have to specify login and password to authenticate himself in the DA, with verification or not of his e-mail address registered in the DA, according to the options chosen in the action to launch the questionnaires.

5.3. Monitoring

5.3.1. GTServer Service

To be performed for each of the GTServer services running on the :

Check that the GTServer **service** is **started.**

- Check that the GTServer service can access the databases: GT base and client base (a test can be performed via GTAdmin by logging in with the service account using the Test button in each of the GT base and client base tabs).

- Verify that the GTServer service can talk to the mailbox for sending (a test can be performed using the Test button of the sending configuration in the GTAdmin Mail tab) and can talk to the mailbox for receiving (using the Test button of the receiving configuration in the GTAdmin Mail tab).

- Check the **client/server connection** by connecting with the GTAnswer module from another machine than the server.

- Check the **Windows log** of the service (presence of error type entry)

- Check the service **file execution log** (presence of [ERR] or [WARN] type entry)

- Launch via automation the polling launch, campaign launch, SQL execution action and restitution launch tasks provided in the instance's test set. Example powershell scripts are provided. These scripts must be reconfigured (see comments in the scripts) to connect to the GTServer instance you want to ensure its operation. Be careful, in case of repeated executions of the campaign launch and recovery actions, mails are sent to an email address, these mails should be purged from the destination mailbox.

- Launch via automation the polling script from another machine than the server to check the client/server dialog. GTAnswer must be installed on the client machine to be able to use the automation assembly.

Note: Dialoguing with the automation .NET assembly (via Powershell scripts or any .NET program) requires an automation license declared in the license of the GTServer instance.

5.3.2. Service of the web server hosting GTWeb

The monitoring of this module should only be set up if the GTWeb module is installed and used (for the transmission of responses, for synchronization, for the transmission of the SetupAnswer and for the communication between GTserver and GTAnswer).

- Check your web server's service startup

- proud access to the "publication url" of the service. This url is specified in the GTAdmin Mail tab and gives you access, via a web browser, to the GTServer client web interface. This url is case sensitive

5.4. Backups

5.4.1. Saving GTServe objects

Templates as well as actions and messages related to this template can be saved via an export in GTAnswer:

- Start GTAnswer
- Login to the instance with an account that has at least developer rights.
- In the main menu, select the "Export" command.
- Specify the export file
- Choose the templates and actions to export
- Validate the export

An import of this .gtexport file into a GTServer instance can be performed to recreate the document templates as well as the actions and messages related to these templates.

5.4.2. Backup of the GTServer database and the client database.

Both databases must be backed up by the company's database server management team.

Important note on restoration: Restoring the GT database will restore the state of the information of the GTServer service at the time of the backup. All the actions performed since this backup will have to be performed again if the GTServer service has already performed these actions: transmission of a response with GTAnswer, launch of a campaign, relaunch, etc... In the same way, the responses transmitted by email or GTWeb and already "consumed" by the GT instance will have to be sent back to the GTServer.

In the case of a GT database under Firebird, the Firebird database is a repo.fdb file in the instance directory. In order to make a backup of the database, this file must be saved with the service of the corresponding instance stopped.

In the case of a GT database under SQL Server, the backup must not be made in the form of an SQL script.

5.5. Change Management

5.5.1. Add a user

3 solutions :

- Launch GTAdmin on the server, in the "Base GT" tab, click on the "Users" button then Add or remove users. If the GT base is an embedded Firebird base, it may be necessary to stop the service of the instance beforehand.

- Launch GTAnswer by logging in with a user having the Administrator privilege. The "Manage Users" button allows you to modify/add/remove users and assign them rights on templates.

- If the user to be added should only have respondent rights, it is possible to use the account creation action. This action allows you to automatically create user accounts based on data from a table or a view of the customer database.

5.5.2.   Changing user rights

- Launch GTAnswer by logging in with a user having the Administrator privilege. The "Manage Users" button allows you to modify/add/remove users and assign them rights on templates by associating to each user and each template one or more groups of rights.

5.5.3.   Changing a user's password

Since GTServer does not store passwords but only a hash of them, it is not possible to retrieve a user's forgotten password, it is necessary to log in with GTAnswer as a GT administrator (or access GTAdmin on the server) to reset a password.

If the instance has been configured to "Enable Forgotten Password Recovery" (GTAdmin "Security" tab), the user himself can request via GTAnswer that GTServer reset his password ("Forgotten Password" command in the settings button on the login screen). To do this, the GT user must have an e-mail address associated with his account (a GT administrator defines the e-mail address for a GT user). When resetting, he will be asked to specify his login and the email address associated with his login (which will be checked by GTServer to ensure that the reset can take place).

It is possible to impose constraints on passwords by activating the corresponding option in the "Security" tab of the instance in GTAdmin.

5.5.4. Modifying the configuration of an instance

- Logging in using the GTServer service account

- Stop the service of the instance for which a change is to be made

- Modify the configuration of the instance. If the modification concerns connections to the databases, to the mail server (sending or receiving), use the corresponding "Test" buttons. If the modification concerns the publication url, test the publication url in a browser.

- Once all the test operations have been performed, save the configuration via the File menu. As long as the configuration is not saved, you can reload the currently saved configuration by using the 'Reload Configuration of Instance xxx' command from the GTAdmin File menu.

5.5.5. Modifying the GTServer license key and assigning instances

The GTServer license key can be modified via GTAdmin.

If you have several instances running on the same server, note the assignments of the instances declared in GTAdmin to the instance numbers in the key.

The procedure for modifying the key is described in § 3.1.2.2.

Once the license key is installed, you must assign the instances declared in GTAdmin to the instance numbers of the key. The procedure is described in § 3.1.2.4.

A modification of the number of authorized users (developers, managers, validators) for an instance requires a modification of the license key.

5.5.6. Deleting an Instance

- Stop the service of the instance

- The service of the instance should be uninstalled (select the instance and choose Uninstall Service via right click)

- The GT Database can be deleted

- The email account of the instance can be deleted if it is not used for other purposes.

- The customer master can be deleted if it is not used for other purposes.

- Select the instance, then delete the instance using the "Delete Instance xxx" command from the File menu.

- The directory of the instance can be deleted, as well as all directories specified in the instance if they are not used for other purposes.

5.5.7. Adding an Instance

Follow § 3.1.3 by checking the prerequisites beforehand (see 2.1.)

5.6. Incident Management

5.6.1. General

You can obtain more information about errors by doing the following:

- Browse the execution history of GTAnswer actions (Main Menu \ Action History).

- Browse **GTServer log** files.

- Browse the Windows service log

The log files are located in the \Log subdirectory of the instance directory (see 3.1.3.1). The log files are reused ("circular" logs), so you must sort them by modification date to find the latest "as of".

If no log file is written in the directory, check the read/write rights of the service account on this directory and the other directories of the instance (cf.2.1 and 3.1.3.1).

Via GTAdmin in the first instance control panel, you can specify the information written to the GTServer log files and Windows event logs.

Monitoring operations should be performed beforehand in order to check the proper functioning of the system.

5.6.2. Unable to start the GTServer service

- Check the validity date of the license key

- Verify that the instance associated with the service is assigned to a valid instance number of the license key.

- Check the number of users defined in the instance against the number of users defined in the instance (definition of users via the Users button on the GT Base tab of GTAdmin).

5.6.3. If GTServer cannot receive the answers to the questionnaires or if it is unable to receive the connect to the mail server for sending or polling :

- **Test,** in GTAdmin, each of the **connections w**ith the mail server (mail configurations for sending and for polling/receiving)

- Check that a firewall (or a firewall in an antivirus) or any other software does not protect access to the mail server for sending and receiving/polling. Test port openings with a tool such as telnet.

- **Test** email access using another email client from the same workstation.

- In the case of a connection to Exchange (via Outlook) or Notes, check that by connecting to the Windows account under which the GTServer service is launched, it is possible to launch local clients such as Outlook or Notes, as well as to view the emails in the mailbox dedicated to GTServer in the Outlook client, an Notes.

5.6.4. If a GTAnswer response cannot be transmitted or is not received by GTServer :

- Check that the **campaign is not closed** and that the questionnaire is **not closed.** Verify the refused answers. A campaign with refused answers appears with a red border in the list of campaigns.

- Check p**olling logs via** GTAnswer (or polling log files in the Polling subdirectory of the instance on the server)

- Check polling logs via GTAnswer (or polling log files in the Polling subdirectory of the instance on the server)

5.6.4.1.If answers are made by email (backup connection)

Verification on the GTAnswer side (correspondent)

- **Send a validation email with GTAnswer** (on the correspondent's workstation to ensure that GTAnswer can dialogue with the mail server.

- **GTAnswer** will dialog directly with the mail server if it is configured in SMTP. Check, in the case of an **SMTP connection**, that GTAnswer is **not blocked** by a firewall or other access-limiting program.

- GTAnswer will dialog with the mail client installed on the correspondent's computer if it is configured in Notes (or VIM) or Outlook. In some cases of incorrect dialog with the mail client (especially Outlook), the reinstallation of the mail client is necessary.

- **Test the connection settings** to the mail server in a mail client or better in an external tool (console, etc... preferably not whitelisted by the firewall).

- **If GTAnswer** does not raise an error message but the mail does not reach the server, try to send, via a mail client, a mail to the consolidation address of the server. If GTAnswer's connection settings are different from the client's, try sending mail to the mail client by setting up an account with the same SMTP settings as specified in GTAnswer.

- If the questionnaire is large **(more than 1 MB)**, test responses with less data or smaller attachments. Try sending the .qstx file by e-mail to the e-mail system to **perform a volume test**. The mail server must accept responses with attachments of a size equivalent to the size of the .qstx file containing the correspondent's response. If this is not possible, use the http response.

GTServer-side check (server)

- Check that one or more mails whose subject line starts with "Gathering Tools Answer Environment" and marked as unread (especially for MAPI or Notes connections) is not in the mailbox dedicated to GTServer (these mails correspond to GTAnswer). The mailbox to be scanned is the mailbox of the consolidation address specified in the GTAdmin Mail tab.

- After having stopped the GTServer service of the instance, check, by answering with GTAnswer on the correspondent's computer, that an email whose subject begins with "Gathering Tools Answer Environment" reaches the mailbox dedicated to GTServer (this email corresponds to a GTAnswer email). If this is not the case, an internal tool within the company's IT infrastructure has probably intercepted or modified the mail (antivirus, anti-spam, etc...).

5.6.4.2.   If the answers are made in http

These checks should also be performed in other cases of GTAnswer communication with the Web server (Synchronization, "http check", ...).

- **Check the error messages expressed in the GTAnswer log:** an error should occur in GTAnswer when transmitting the response or in the GTServer polling log.

- **GTAnswer's access to the GTWeb url** can be blocked by a firewall (or an anti-virus software integrating a firewall). Check the access to the url in a browser on the correspondent's computer using GTAnswer: the web page displayed is the page containing a Gathering Tools logo. If you reach any other page, the specified url is incorrect.

- In order to verify that a firewall has not blocked GTAnswer's access to the GTWeb url, test the GTWeb url from the client computer in a browser or better in an http console tool (preferably not whitelisted by a firewall, for example a wget port under windows).

- Check that the download url of SetupGatheringTools.exe (or SetupGatheringTools64.exe) is operational : this url is built by taking the base url of GTWeb and by adding /**SetupGatheringTools**.exe or SetupGatheringTools64.exe (The setup must be placed in the public directory of the website

  https://url base GTWeb/SetupGatheringTools.exe

- Try to change the proxy access specified by GTAnswer (GTAnswer advanced options, choose "No proxy", "Read system proxy settings" or Custom with specific proxy server and port to be specified). The proxy authentication methods managed by GTAnswer are "Basic" and "Digest" in version 2020.
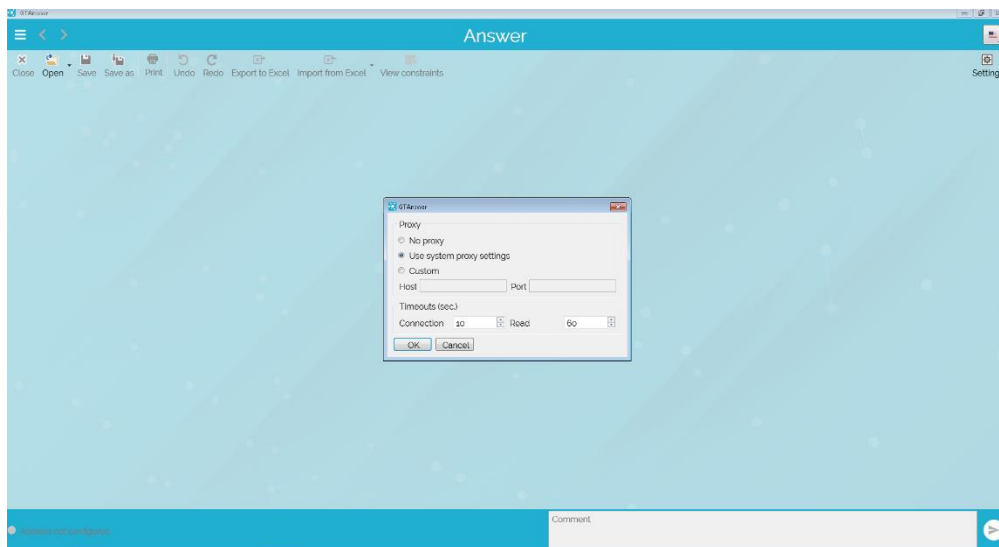
1. If the **questionnaire** is **large** (more than 1 MB), try sending a response with less data in the questionnaire or smaller attachments. Configure the PHP web server to accept documents of a size equivalent to that of the .qstx file containing the correspondent's response (see § **Error! Reference source not found.**)

GTWeb side check (web server)

- Verify that the preliminary functional tests of the Web server hosting the GTWeb scripts have been successfully completed (see 3.2.1.2).

- Check that the download url of **SetupGatheringTools** (or SetupGatheringTools64.exe) is operational: this url is built by taking the base url of GTWeb and adding / SetupGatheringTools.exe or SetupGatheringTools64.exe
  `https://url_base_GTWeb/SetupGatheringTools.exe`

This tests the dialog between GTWeb and GTServer (in addition to url access).

- Check Apache or IIS logs for the web site hosting the GTWeb scripts

- Check the PHP logs for the website hosting the GTWeb scripts.

- If you cannot access the GTWeb server via the browser, check the port of your GTWeb server.

To find out which TCP or UDP port is used by an application. Click "Start", "Run..." then type "cmd" and click "OK" to open a DOS console. Under the Dos command prompt, type "netstat -a", this will display a complete list of active connections and listening ports on the machine.

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GTServer-side check (server)

- Check that the url **specified in GTAdmin is correct.** To do this, on the GTWeb server workstation, click on the "..." button to the right of the url specified in GTAdmin, the browser is then launched: the web page displayed must contain the "ok" messages. You can also enter this url in your browser for this check.

- Check t**he error messages** expressed in the **GTServer logs.**

5.6.5. If you cannot access the web server or answer the questionnaire by http or synchronize (via the web server)

Section 5.6.4.2 contains the points that can be checked.

5.6.6. If answers are Failed during polling

Check that the account accessing the GT Database has sufficient rights to write data to the database.

Check that the GT base is not limited by quotas or other restrictions.

Check for error messages generated in the Windows file or log logs

Restart polling after correcting any errors.

If answers continue to remain in Failed. The corresponding files (mentioned in the file logs or Windows logs) should be moved to be forwarded to the support Calame (support@gathering-tools.com).

5.6.7. If GTServer cannot connect to the GTServer database or to the client database

- **Test,** in GTAdmin, each of the connections with the GT Database, with the client database and with the mail server (mail configurations for sending and for polling/receiving). To perform these tests, **GTAdmin must be launched with the GTServer service account.**

- Check the user **rights specified f**or each connection to the **GTServer database or** client database. Test these rights using another database client from the same **workstation.**

- **C**heck that a firewall is not blocking access to database servers

5.6.8. If GTAnswer cannot connect to GTServer

- Check that from the client workstation, you can open the port of the instance on the server. The verification of port openings can be done with a tool like Telnet (with telnet, a successful connection with GTServer will display a blank page in the telnet, a failed connection will display an error message).

If GTAnswer generates a timeout, you can modify the GTAnswer timeout via the main menu -> Answer \ Preferences.

Changes to the ReadTimeOut and WriteTimeOut parameters configured in the GTServer instance can also be useful if it is GTServer that generates timeouts.

Do not forget to save the configuration in GTAdmin (File->Save Instance Configuration), before starting the GTServer service, when parameter modifications have been made.

5.6.9. If an external error occurred when executing an action (start/integration/return).

All accesses of the GTServer service to both databases (GT Database and Client database) are locked in transactions that are only "committed" when all operations have been successfully completed.

If any errors occur during data access, GTServer requests a rollback from the database server.

If an error occurs before the commit, interrupting the connection to the database, changes to the data requested by GTServer, which are locked in database transactions, will not be taken into account.

So if the execution of an integration or SQL action is interrupted by an external error, it is sufficient to restart it, once the services (GTServer, network, database, mail, ...) are restored.

If GTServer operations with the database are interrupted, it is not the same for operations with the mail server for which the equivalent of a database transaction does not exist.

If a campaign launch or return action is interrupted while e-mails are partially or totally sent, these mailings cannot be cancelled.

Thus, if the execution of a campaign launch or return action is interrupted by an external error, it is sufficient to restart it once the services (GTServer, network, database, messaging, etc.) have been restored. Some correspondents may receive a second version of the questionnaires. The manager will be able to forbid the answers to the first version of the questionnaires in the management of the answers and questionnaires sent during the campaign.

5.7. Improvement of operation

5.7.1. Stopping and restarting the GTServer service

It is advisable to restart the GTServer services of each instance regularly (a restart once a month is desirable).

The restart of a GTServer service should be done at a time of least demand (at night or on weekends).

The service should be configured to be launched at the start of the machine.

5.7.2. Purging Server Database History

The various server histories must be purged on a regular basis:

- Execution history (Main menu \ action history in GTAnswer)

- Polling history (Main menu \ polling history in GTAnswer)

- Login history (via the user management dialog box, button in the top toolbar of GTAnswer)

In GTAdmin, an option (in the Mail tab of the instance configuration) allows you to configure the number of days of polling logs to keep.

5.7.3. Deletion of old campaigns

Very old campaigns should be terminated and deleted (in agreement with those responsible/managers of these campaigns).

5.7.4. Cleaning the mailbox of the GTServer account

If replies are sent by e-mail, the connection of GTServer to the mailbox (which is dedicated to it) may be slowed down if many messages not relevant to GTServer are present in the mailbox.

Reply emails from GTAnswer to GTServer are identified by a subject containing "Gathering Tools Answer Environment".

All other messages are not relevant to the operation of GTServer and should be deleted from the GTServer mailbox. They can be forwarded to another mailbox beforehand so that the people involved in the project can decide what to do with them.

5.7.5. Configuring the GTWeb PHP engine to accept large files

The PHP engine can be configured to accept response files larger than the default size.

This setting is made in the php.ini file.

The following entry in the php.ini file should be adjusted to the maximum size of .qstx files:

post_max_size = 8M

upload_max_filesize = 2M

The following entry in the php.ini file can also be adjusted :

max_execution_time = 30

5.7.6. Configuring the machine hosting GTServer

Separating the server on which GTServer runs from the database server can be advantageous in terms of performance.

Increasing the capacity of the GTServer machine (RAM, CPU, etc.) can be a lead.

The identification of the bottleneck (GTServer, database or, in a small number of cases, messaging) is an essential step in a performance diagnosis. Enable all levels of logs in GTAdmin to get more information in the file logs and enable more accurate diagnosis. Performance articles hosted on the documentation gathering-tools.com/documentation/ can help the questionnaire and database designer.

Access to different sources (databases and messaging) outside of GTServer but within the same operating framework as the GTServer service is an avenue of exploration.

Switching to a POP or IMAP client rather than Exchange or Notes is always preferable.

If GTServer is running on a virtual machine, make sure that the host machine's processors are not spread over too many virtual machines.

Shutting down other virtual machines on the host machine, moving the virtual machine to a dedicated host machine, or running GTServer on a physical machine instead of a virtual machine should improve performance and identify potential virtualization bottlenecks.

5.7.7. Gathering Tools Suite Update

Improvements and corrections are regularly made to the Gathering Tools suite.

Updating the suite, while remaining in the minor branch, should be done regularly to take advantage of these corrections and improvements.

To download the latest versions of the suite, you can:

Contact support via email: support@gathering-tools.com) or via the support portal: https://gathering-tools.com/tickets/

- go to the GT download site: https://gathering-tools.com/documentation/

6. Virtualization

The operation of the suite as a whole is independent of whether the machine is virtual or not, as long as the machine has access to a hard disk, pointing device, keyboard input device, output device, network access, etc., similarly to a physical machine, and if the technical prerequisites of the installation are met.

Nevertheless, the performance of the operation may be degraded if the host machines hosting the virtual machines do not have sufficient performance (or host too many virtual machines or virtual machines requiring too much computing power from network disk accesses, etc.). In general, to ensure minimum performance, the recommended resources for a physical server should be guaranteed at all times (and even be higher) for the virtual machine. Virtualization being an "additional layer", performance can only be degraded, even slightly, compared to a physical machine of equivalent characteristics.

Finally, DBMS virtualization for databases that need to ensure high performance (numerous accesses and/or large volumes, etc.) is generally not recommended by the publishers of these different DBMSs.

For some client modules such as GTAnswer, the graphical interface is very light: the virtualization operated on some machines does not correctly manage the 3D layers used.

The software support provided under the maintenance contract is ensured whether the machine is virtual or not.

However, if it turns out that the cause of a possible problem which is brought to our attention can come from virtualization, GATHERING TOOLS will have to ask to reproduce the problem in a physical workstation.

GATHERING TOOLS is a Microsoft certified parter. As part of this certification, the product has itself been certified as to its operation under the Microsoft virtualization platform (Hyper-V).

7. Summary of technical prerequisites

The table below provides, as an indication, the list of technical prerequisites for the installation of Gathering Tools.

		Ø
Supported	Unsupported	No rights required or Not Applicable

SUPPORTED OPERATING SYSTEMS				
	Design	GTAnswer	GT Server	GT Admin
Windows Server 2019	Supported	Supported	Supported	Supported
Windows Server 2016	Supported	Supported	Supported	Supported
Windows 10 with the last Service Pack	Supported	Supported	Supported	Supported
Windows Server 2012 et 2012 R2	Supported	Supported	Supported	Supported
Windows 8 et 8.1	Supported	Supported	Supported	Supported
Windows Server 2008 et 2008 R2	Supported	Supported	Supported	Supported
Windows 7	Supported	Supported	Supported	Supported
macOS 10.13 and +	Unsupported	Supported	Unsupported	Unsupported
Android 5 (API 21) and +	Unsupported	Supported	Unsupported	Unsupported
iOS 12 and +	Unsupported	Supported	Unsupported	Unsupported

MINIMUM USER ACCOUNT PRIVILEGES REQUIRED FOR INSTALLING				
	Design	GTAnswer	GT Server	GT Admin
Files	Writing in installation folder			
Windows Registry	Writing "HK_Local_Machine"	Writing in HKLM	Writing "HK_Local_Machine"	
Services	Ø	Ø	Install / Start / Stop services	Install / Start / Stop services

SUPPORTED MESSAGING PROTOCOLS					
	Design	GTAnswer	GT Server		GT Admin
			Sending	Receiving	
POP (*)	Ø	Ø	Ø	Supported	Ø
SMTP (*)	Ø	Supported	Supported	Ø	Ø
IMAP (*)	Ø	Ø	Ø	Supported	Ø
MAPI	Ø	Supported	Unsupported	Supported	Ø

(*) with SSL support

SUPPORTED MAIL CLIENTS (AUTODETECTED BY GTANSWER)	
	Protocol(s)
Microsoft Outlook	Outlook
<u>Please note</u> mail receiving protocols (POP, IMAP) are only used as a "fallback connection" for users that cannot connect to the web server. By default, GTAnswer connects to GTServer via http(s)	

REQUIRED DISK SPACE				
Role	**Module**	**Min space**	**Recommended space**	
Server	GT Server	**10 Go**	**20 Go**	
	GT Admin			
Developer	Design	**1 Go**	**1 Go**	
	GTAnswer			
Manager / Validator / Respondent	GTAnswer	**40 Mo**	**100 Mo**	

REQUIRED RAM (Mo)		
	Design + GTAnswer	GT Server + GTAdmin
Min RAM	**1024**	**4096**
Recommended RAM	**4096**	**8192**

GTSERVER GLOBAL REQUIREMENTS
1 mail account accessible via SMTP to send mail or notification
Optional: 1 mail account accessible via POP/IMAP or 1 Exchange account with Oulook 32 bits installed on the server
1 database schema for the Client Database, this schema must be distinct from the GT Database one
1 database schema for the GT Database, this schema must be distinct from the Client Database one
Microsoft Excel installé sur le serveur si des restitutions doivent petre générées par la suite GT (uniquement si le client a migré d'une version antérieure à la 2020)

SUPPORTED DATABASES	
Base	**Versions**
SqlServer	2008, 2012, 2014,2016,2017,2019
Oracle Client ODAC 11G required	11G
PostGreSQL	9 min
DB2 (UDB)	9 or plus

ADDITIONAL MODULES REQUIRED				
Module	Feature	Additional requirement		Version mini.
Design	Excel Import	Microsoft Excel		2007
GTServer	Excel Restitution	Microsoft Excel		2000
	ALL	Microsoft .NET Framework		4.7.2
	Web Server	PHP		7.4
		or	IIS	7.5
			Apache	2.4
GTAnswer	ALL	Windows port only: Microsoft C++ Runtime (CRT) library		