

Gathering Tools S.A.S

Gathering Tools

Technical Prerequisites



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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

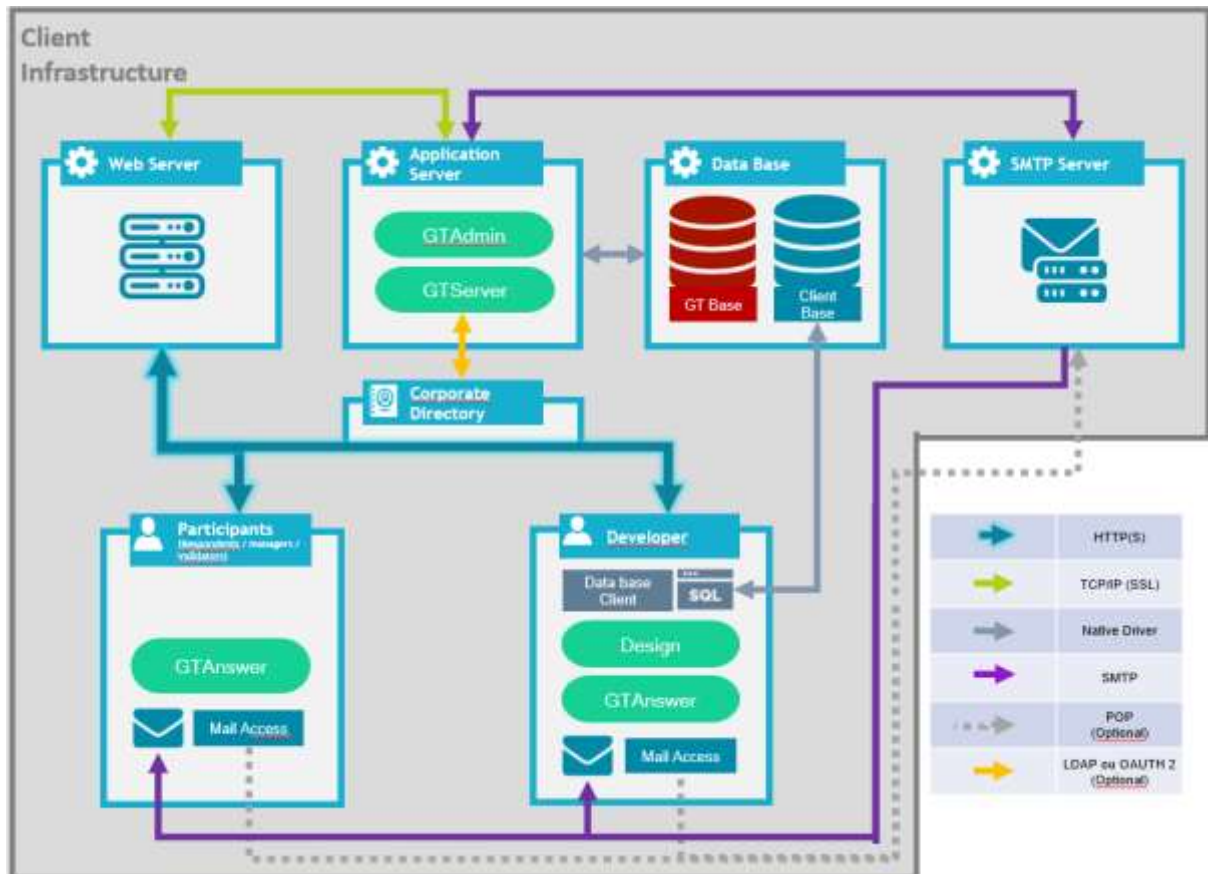
The table below lists the roles that can be assigned in a Gathering Tools project. Each role must have an account corresponding to its scope.

Rôle	Responsibility	Profil-Type	GT Modules to be installed
Administrator	<ul style="list-style-type: none"> • Creating and configuring instances <ul style="list-style-type: none"> ○ Connection to the bases ○ Login to email account ○ Connecting to the Web Server ○ Flow security certificates • User creation and management <ul style="list-style-type: none"> ○ Add/Remove Users ○ Password strategy 	Infrastructure team, IT correspondent	GtServer GtAdmin
Developer	<ul style="list-style-type: none"> • User management <ul style="list-style-type: none"> ○ Creating and maintaining user groups ○ 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Campaign follow-up • Validation of responses • Management of communication with recipients (reminders, versions, etc.) 	User Supervisor	GTAnswer
Respondent	<ul style="list-style-type: none"> • Feeding the forms with data • Consultation of the dashboards 		GTAnswer

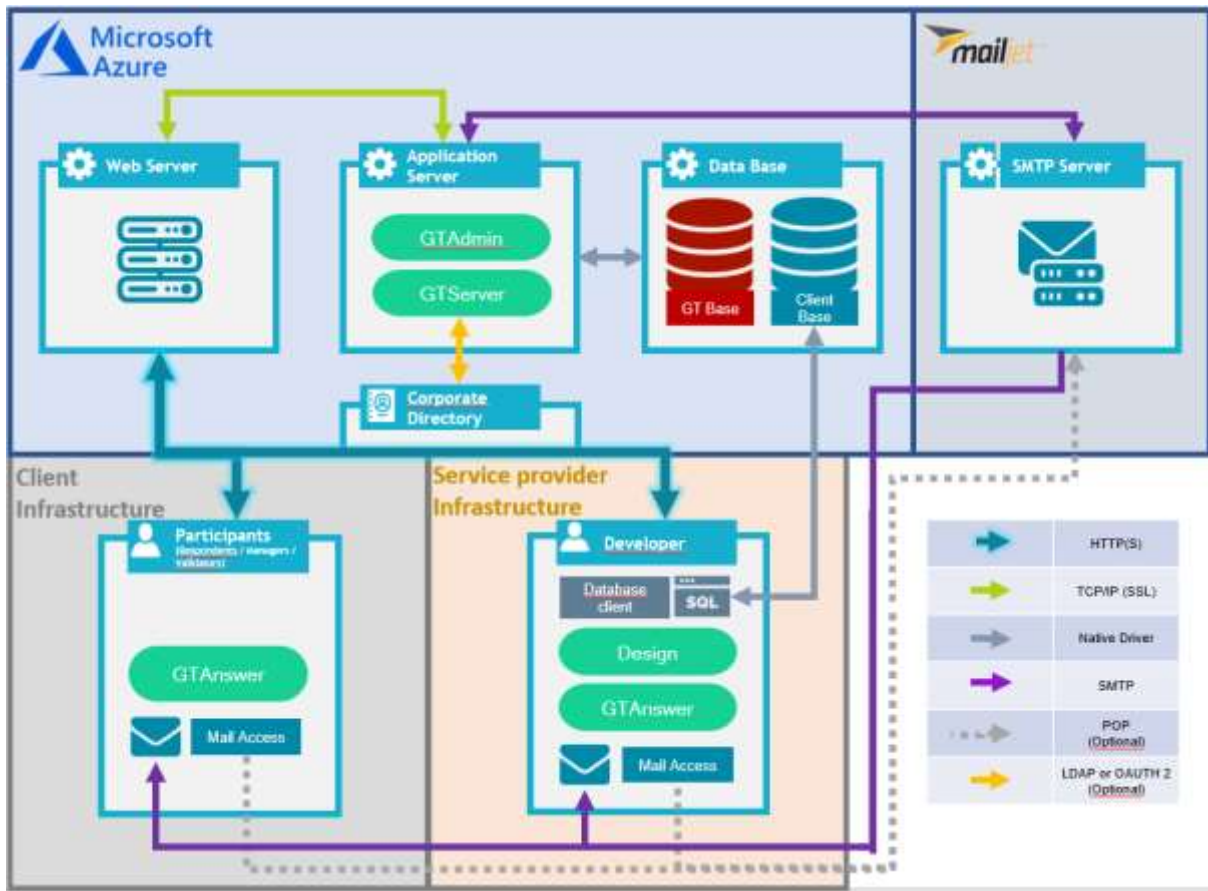
1.2. Architectural scheme

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 PC Base (repository, which manages the internal workings of the application), Initialize the PC 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, Windows 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 PC 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 Gathering Tools 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 PC 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 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.
- **Read-write rights** for 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, PC 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.

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:

- GTServer Database
- Client Database

Remarks :

GTServer	Client Database	Remarks
SQL Server 2005 or higher	Provider Ole DB for SQL Server	SQL Server Express versions are supported
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 2.2.7.0	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.

Necessary rights		
GT Database	When creating/updating the GT Database	using the GT database
	(CREATING UP CRIES)	
SQL Server	CREATE TABLE CREATE TYPE CREATE PROCEDURE ALTER ON SCHEMA REFERENCES ON SCHEMA SELECT, UPDATE, INSERT, DELETE ON SCHEMA (or membership in the roles 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 g 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.

GT Database	Necessary rights	
	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 PC 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 PC basis.

The PC **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 PC **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 PC 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 server** version 2.4minimum OR **IIS server** version 7.5minimum
- **PHP** engine installed and operational on the Web server, **version** 7.4 minimum, must be lower than version 8.
- 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.

3. Summary of technical prerequisites

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

	Supported	Unsupported	∅ No rights required or Not Applicable	
SUPPORTED OPERATING SYSTEMS				
	Design	GTAnswer	GT Server	GT Admin
Windows Server 2019				
Windows Server 2016				
Windows 10 with the last Service Pack				
Windows Server 2012 et 2012 R2				
Windows 8 et 8.1				
Windows Server 2008 et 2008 R2				
Windows 7				
macOS 10.13 and +				
Android 5 (API 21) and +				
iOS 12 and +				
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	∅	∅	Install / Start / Stop services	Install / Start / Stop services
SUPPORTED MESSAGING PROTOCOLS				
	Design	GTAnswer	GT Server Sending Receiving	GT Admin
POP (*)	∅	∅	∅	∅
SMTP (*)			∅	
IMAP (*)		∅	∅	
MAPI				
(*) with SSL support				
SUPPORTED MAIL CLIENTS (AUTODETECTED BY GTANSWER)				
	Autodetected	Protocol(s)	Please note 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)	
Windows Live Mail	Oui	SMTP		
Windows Mail	Oui	SMTP		
Microsoft Outlook (32 bits and 64 bits)	Oui	Outlook, SMTP		
Thunderbird (2 mini)	Oui	SMTP		

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 notification
Optional: 1 mail account accessible via POP/IMAP
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

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
	ALL	Microsoft .NET Framework	4.7.2
GTServer	Web Server	PHP	7.4
		or IIS	7.5
		Apache	2.4
GTAnswer	ALL	Windows port only: Microsoft C++ Runtime (CRT) library	