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1 Invantive Cloud

1.1 Introduction

**Assistance**

Do you need help setting up the connection for Power BI or Power Query with platforms such as Twinfield, Visma or Exact Online? You can call the support team on +31880026599 or:

**Schedule free session today**

Do you need contact with other users?

**Visit the Invantive community forums**

**What is Invantive Cloud?**

Invantive Cloud is an online portal with customer services and Power BI and Power Query connectors. It is available at [https://cloud.invantive.com](https://cloud.invantive.com). Invantive Cloud provides among others:

- Access to your invoices and license keys.
- User management.
- Audit trails on your systems and API use.
- Cloud-based virtual databases.
- Web app development.
- Management of the OData connectors of Invantive Bridge Online.

All Invantive users can use Invantive Cloud to manage their subscription and with most subscriptions you can also use the virtual databases on the supported platforms. The virtual databases are available for platforms such as AFAS, Exact Online, Twinfield and Visma.net. The virtual databases are also available to retrieve data into Power BI using OData version 4 with the Invantive Bridge Online of Invantive Cloud.

**1.2 User Registration**

Follow these steps to register your user account on Invantive Cloud:

- Open [https://cloud.invantive.com](https://cloud.invantive.com) in your browser.
- A form similar to the following appears:
Click on "Log In / Sign Up" in the top-right corner.

A form similar to the following appears:

Click on "Sign up" at the bottom of the form.

A form appears.

Enter your email address.

Enter a password that matches the requirements as indicated by all check marks becoming green:
• Click on "Sign up".

• A code of 6 digits is sent to the email address you have entered to validate that you have access to inbox of the email address.

• Wait until the mail arrives.

• Enter the 6-digit code in the form:
• Click on "Confirm Account".

• A QR code image is displayed for additional security by using a two-step verification (QR code obfuscated here):

• Install an app like Google Authenticator or Microsoft Authenticator on your personal phone.

• Using the app scan the QR code.

• Enter the generated 6-digit verification code to ensure that your personal phone and Invantive Cloud are synchronized.

• Click on "Complete".

• The user registration has completed.
1.3 Link to Organization

Invantive Cloud provides services for drive-by users without an associated organization and to users of registered customers.

Users without associated organization can access selected parts of the functionality:

Users without associated organization also have access to all related apps:
By default, all license coordinators of registered customers are associated with their company in Invantive Cloud. All other associations between users and organizations are currently done manually by Invantive upon approval of a license coordinator.

Please send a mail to support@invantive.com with the name and email address of your users to request association with your organization.

1.4 Menu

This section describes the available functions in the menu. The presence of functions depend on your authorization.
1.4.1 Main Dashboard

The main dashboard is shown by clicking on "invantive cloud" in the top bar:

The elements of the main dashboard vary depending, but resemble the dashboard shown above:

- **My Profile**: some functionality is unavailable when parts of the current user's profile are missing. Click on "My Profile" to complete your profile.

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Databases: direct access to registered databases.

Support: direct access to support options.

Samples: a number of pre-defined Power BI reports for use with Invantive Bridge Online.

### 1.4.2 Databases

The form "Databases" contains a list of registered databases. All Invantive SQL databases are virtual; they do not store data, but only define the containers of data elements in the cloud or in other traditional databases or files.

#### List

There is a form in list format:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Created</th>
<th>Organisation Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dummy b4f34fe</td>
<td></td>
<td>30-09-2019 15:15:05</td>
<td>Invantive B.V.</td>
</tr>
<tr>
<td>Dummy f093809</td>
<td></td>
<td>30-09-2019 10:58:34</td>
<td>Invantive B.V.</td>
</tr>
<tr>
<td>Exact Online b979c75</td>
<td></td>
<td>12-09-2019 10:13:37</td>
<td>Invantive B.V.</td>
</tr>
<tr>
<td>Exact Online beab78a3e</td>
<td></td>
<td>13-09-2019 10:23:34</td>
<td>Invantive B.V.</td>
</tr>
</tbody>
</table>

The "New" button allows you to add databases.

When you are authorized to see databases from multiple organizations, the "Show All Databases" allows you to restrain the databases to solely the databases of your main organization.

#### Details

There is also a details format:

**Database Exact Online b979c75**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact Online b979c75</td>
<td></td>
</tr>
</tbody>
</table>

#### Buttons

The "Save" button memorizes changes made to the changeable fields.

The "Delete" button permanently deletes the database currently displayed, including memorized log on credentials to the platform.
The "Data Containers" button shows the individual data containers with the data that can be accessed through the database. There is only one data container per database for simple scenarios, but more complex setups can have dozens of data containers per database.

The "SQL Editor" button opens the SQL editor on the selected database.

The "Bridge Online Configuration" button shows a manual on how to configure Bridge Online to retrieve data from this database for Microsoft Power BI.

**Fields**

The "Name" field is a unique name of the database for easy reference. By default a name is generated automatically based upon the platform name.

The "Description" is a free text field, describing the contents of the database.

**New Database**

The registration of a new database has two steps:

- First you select the platform you wish to define the database on.
- Depending on the platform, you can enter the login credentials.

The platform choice looks like the following picture:
The next step depends on the platform chosen, but in general shows a log in form of the platform itself.

When connecting to an application protected by a firewall using source IP-address, please make sure to white list the following IP addresses:

- 52.48.151.77
- 52.48.177.24

### 1.4.3 Data Containers

The form "Data Containers" contains a list of registered data containers. A data container is part of a database and contains the actual data accessible.

#### List

There is a form in list format:

![Data Containers List Form](image)

Data containers can not be added from this form. An initial data container is created when you define a new database.

#### Details

There is also a details format:

![Data Container Details Form](image)

#### Buttons

The "Save" button memorizes changes made to the changeable fields.
The "Delete" button permanently deletes the data container currently displayed, including memorized log on credentials to the platform.

The "Refresh Authorization" button refreshes the connection credentials on platforms where a refresh token is used, such as Exact Online or Teamleader. The authorization refresh requires you to log on again on the associated platform.

**Fields**

The following fields are available:

- **Connector**: the platform this data container connects to.
- **Alias**: an Invantive SQL data container alias. It is for use on databases with multiple data containers to qualify object names with a reference to a specific data container.
- **Connection String**: specification of advanced features for the connection. The connection string is a semi-colon separated list of names and values. The available names and values are listed per connector on https://documentation.invantive.com. For ANSI SQL-based data containers, you can also use connection string parameters provided by the backing ADO.NET connector.
- **Allow Connection Pooling**: Invantive SQL provides on ANSI SQL-based data containers a custom algorithm for connection pooling. Enable this setting to activate it. Advanced use only.
- **User Log On Code**: log on code for use with connectors that use traditional user log on code/password combinations.
- **Password**: associated password or API token key.

### 1.4.4 Preauthenticate Application

Invantive SQL connects to over 50 platforms, from the cloud, file formats and traditional SQL-databases. Many platforms use OAuth2 to authenticate the application and the user. OAuth2 offers several facilities for this, such as Implicit Grant and Code Grant.

When you run an Invantive product such as Invantive Data Replicator on hardware under control of your company, you can use the Code Grant Flow to preauthenticate an application.

"Preauthentication" creates application settings (including a refresh token) which enable access to cloud applications such as Exact Online using an application without further security credentials exchange. The process can be executed before the actual use of the application. Invantive Preauthentication has no relationship with Kerberos Preauthentication.

Preauthentication is currently supported on Exact Online (all countries).

**Security warning**

A two-step authentication to achieve strong authentication is only applied during preauthentication. Apply additional measures such as IP-based access control or hardware-bound encryption of the token when you require continuous strong authentication after preauthentication. Please consult your security officer when in doubt.

### 1.4.4.1 Preauthenticate Exact Online

To preauthenticate an Exact Online application, please execute the following steps:

**Preparation**
Execute the following steps:

- Navigate to the **Exact App Center**:

![Exact App Center](image)

- Choose the correct country.
- Log in:

![Login](image)

- For the next step, make sure that you have an Exact Online App Center subscription. This is a free subscription that allows you to register your own API keys.
- To register for such an account, go to [https://apps.exactonline.com](https://apps.exactonline.com)
- Scroll to the bottom and search for "Are you an app developer?", click on "Learn More".

- On the next page, choose 'Step 1: Register', click on the 'Register your app' button.

- On the next page, you'll see a form to register, you can choose "Login" at the bottom of the form.
• Now check for the following: "Manage subscription" should be checked under the Grant rights for the user. You can check that on the Grant rights page for the user: Master data > Overview | Users > User > Rights.
<table>
<thead>
<tr>
<th>Name</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**Monitor**

- Requests
- Documents
- Rights

Companies: Access rights
If you go back to https://apps.exactonline.com, there should be a new option available:

Choose 'Manage my apps' or 'Register API Keys'.
Choose the app that you wish to preauthenticate a user on.

Click on 'Show' next to the client secret.

Take note of the following values as shown below: client ID, client secret and redirect URI.

When you preauthenticate for use with Exact Online using an Invantive product and when it fits your security policy to use an external provided callback URL, you can use https://exactonlineclientredirect.invantive.com. In fact, most Invantive products support any callback URL since they run without a browser environment.
Register a production app

App name
My nice app

Redirect URI
https://exactonlineclientredirect.invantive.com

Terms and Conditions:
Exact accepts no responsibility for the accuracy of content on your website, or the exchange of data between the App and Exact Online.

Yes, I accept the Exact Online Conditions.
Read, print or download the Exact Online Conditions.

Yes, I accept the Exact Online App Center Terms And Conditions Of Use.
Read, print or download the Exact Online App Center Terms And Conditions Of Use.

Register

Authorisation details
Here you can find the configuration settings you need in order to setup your authorisation with Exact Online. To get a better understanding of our OAuth 2.0 implementation, please follow the OAuth tutorial. To find the API resources take a look at our reference documentation.

App name
My nice app

Redirect URI
https://exactonlineclientredirect.invantive.com

Client ID

Webhook secret

Client secret

Save

Exact Online App Authorisation Details

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Preauthenticate

Then preauthenticate the application:

- Open Invantive Cloud.
- Choose "Preauthenticate" in the menu.
- Read and fill out the form as shown using the values previously noted:

- When you use a redirect URI different from cloud.invantive.com, remember to check the box "Deviating Redirect URI". If so, an additional form appears labeled "Exchange Code".
- Click on the "Preauthenticate" button.
- Exact Online will now ask you to authenticate yourself:
On successful authentication, Exact Online will ask you to authenticate access by the application to your Exact Online data with the same privileges as the user:
- Click on "Allow".
- The browser will be redirected to the redirect URI.
- The URL will contain essential information for preauthentication.
- Click in the URL and copy the whole URL to the clipboard:

```
https://exactonlineclientredirect.invantive.com/?code=F12N
```

- Exchange the URL into a OAuth2 refresh token by pasting it in the field "Code Return URL" and press the button "Exchange".

The resulting page displays the settings for preauthenticating your application:

- The field "Refresh Token" contains the OAuth2 refresh token.
- The field "Content settings.xml" contains an Invantive database definition for storage as a file named `settings-<NAME>.xml` in `%USERPROFILE%\invantive`. Confidential information in the connection string is however readable in plain text.
1.4.5 Bridge Online Configuration

Invantive Bridge Online is a website that allows access to databases stored in Invantive Cloud from popular software packages such as Power BI and Power Query on Excel. Bridge Online provides access using the OData4 protocol.

Each database is accessed using a URL that starts with "https://app.office365-apps.com". Included in the URL is a version number of the Bridge Online software version, plus the unique number of the database. For example, the URL "https://app.office365-apps.com/powerbi/bridge/v10/106/odata4/" specifies version 10 of the Bridge online software and database number 106.

For ease of use, a manual is automatically displayed for each database, resembling:

The Bridge Online URL is the URL to enter for the OData feed in Power BI or Power Query. A pop-up will be displayed next in Power BI/Power Query to choose the authentication method. Use the Bridge User Name and the Bridge password. The Bridge password is the same for all databases available to your user account.

Pseudonymization

Invantive Bridge Online does a reasonable job on pseudonymization of names of persons. There is no guaranteed completeness and/or correctness on the effectivity.

Upon written request in a ticket, pseudonymization can be disabled for your user account.

Your organization's representative must explicitly mention that the organization is aware that disabling best-effort pseudonymization might be in conflict with applicable laws and compliance rules and that the organization accepts all consequences of this.
IP Address Validation

In addition to geo blocking, Invantive Bridge Online requires both a user name/password combination as well as white-listing the IP addresses used to retrieve data from.

Upon written request in a ticket, additional specific IP address can be added for your user account.

Upon written request in a ticket, all IP address can be added for your user account. This is necessary for use with Power BI on the web.

Your organization's representative must explicitly mention that the organization is aware that providing access to data through solely user name/password combinations might be in conflict with applicable laws and compliance rules and that the organization accepts all consequences of this.

1.4.6 SQL Editor

The form "SQL Editor" allows Invantive SQL access to the contents of a database.

First choose the database to use. The database chosen will be displayed in the menu group until disconnected:

The SQL editor will open and display three groups:
The “Execute” button runs the Invantive SQL statement in which the cursor is positioned within.

The “Disconnect” button disconnects from the database and also removes the database from the menu group.

The “SQL Grammar” button displays the Invantive SQL grammar for reference purposes.

**Elements**

The SQL editor window is displayed on top. It grows to accommodate more text when necessary.

The "Available Objects" tab displays the objects per data container. Double click on an object to insert a statement to retrieve the data into the SQL editor.

The "Results" tab displays the results of the query:
The "Search" box allows entry of a text used to restrain the results to solely rows containing the search text in any column.

1.4.7 Organizations

The form "Organizations" contains a list of organizations. There will be one entry for most users.

List

There is a form in list format:
The data is taken from Invantive's internal systems. When you find an error, please send an email to support@invantive.com.

Details

There is also a details format:

![Organisation Details](image)

**Buttons**

The "Agreements" button navigates to a form with all agreements of the organization.

The "Users" button navigates to a form with all registered users of the organization.

**Fields**

The following fields are used:
1.4.8 Users

The form "Users" contains a list of users.

List

There is a form in list format:

![User List](image)

- Name: legal name of the organization.
- Address Line 1/2: street of the legal address of the organization.
- Postal code: postal code of the legal address.
- City: city of the legal address.
- Country: country of the legal address in ISO format.
- CoC Number: chamber of commerce registration number.
- VAT Number: value added tax number.
- Work Phone: main phone number.
- Email Address: main email address.
- Invoice Email Address: possibly deviating email address to send invoices to.
- Legal Form: legal form of the organization.
- IBAN Number: bank account number.
- BIC Code: BIC code associated with the IBAN number (some countries only).
- Language Code: preferred communication language of the organization.
- Temporarily Blocked: indicator whether services have been suspended temporarily, for instance due to overdue invoices.
- Signatory: name of the person of the organization that entered into the agreement with Invantive.
- License Coordinator: name of the person within the organization that manages the agreement.
- Website URL: main website.
Details

There is also a details format:

![User John Doe](image)

Fields

The following fields are used:

- User ID: a unique ID of the user.
- Name: the full name.
- Email Address: email address used for communication.
- Job Title: job title, used for pre-authentication.
- Organization: organization name.
- Profile Provider: the technology used to authenticate the user.
- Phone Number: phone number of the user.
- First Name: first name.
- Last Name: last name.
- Gender: "M" for male, "F" for female and "U" for unspecified.
- Language: preferred communication language of the user, including the Invantive Cloud user interface.
- Created: moment when the user was registered.

Some functions of Invantive Cloud are unavailable till a user completes the profile.
1.4.9 Agreements

The form "Agreements" contains a list of agreements between parties and Invantive.

**List**

There is a form in list format:

<table>
<thead>
<tr>
<th>Organisation Name</th>
<th>Agreement Code</th>
<th>Active</th>
<th>Right of Use Start</th>
<th>Right of Use End</th>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invantive B.V.</td>
<td>L51151637</td>
<td>✔️</td>
<td>01-01-2004</td>
<td></td>
<td>SUBAAINV</td>
<td>Subscription all Invantive products Invantive internal</td>
</tr>
<tr>
<td>Invantive B.V.</td>
<td>L120</td>
<td>✔️</td>
<td>01-01-2004</td>
<td></td>
<td>SUBAAINV</td>
<td>Subscription all Invantive products Invantive internal</td>
</tr>
</tbody>
</table>

**Details**

There is also a details format:

**Buttons**

The "Logging" button navigates to a form with logged messages related to this agreement.

The "License Keys" button navigates to a form with all registered license keys of this agreement.

The "Invoices" button navigates to a form with invoices related to this agreement.

**Fields**

The following fields are used:
• Organization Name: name of the counter-party of Invantine.
• Agreement Code: the unique code of the agreement.
• Active: indicator whether the agreement is still active.
• Right of Use Start: date at which the agreement becomes effective.
• Right of Use End: last effective date of the agreement.
• Product Code: associated Invantine product.
• Description: description of the product.

1.4.10 Blocked Agreements
1.4.11 License Keys
Enter topic text here.

1.4.12 Invoices
Enter topic text here.

1.4.13 Logging
Enter topic text here.
1.4.14 My Profile

Some functions of Invantive Cloud are unavailable till a user completes the profile.

Buttons

The following buttons are used:

• Save: save changes in the My Profile section.
• Upload: upload the file with a profile picture.

Fields

The following fields are used:

• User ID: a unique ID of the user.
• Profile Provider: the technology used to authenticate the user.
• First Name: first name.
• Last Name: last name.
• Job Title: job title, used for pre-authentication.
• Full Name: the full name.
• Phone Number: phone number of the user.
• Email Address: email address used for communication.
• Gender: gender.
• Language: preferred communication language of the user, including the Invantive Cloud user interface.
• Profile Picture: file to upload using the "Upload" button as picture for the user. Upload is only available when the profile provider does not itself provide a profile picture.

1.4.15 My Organization
The form "My Organization" is identical to the details section of the "Organizations" form showing the organization the current user belongs to.

1.4.16 Multi-Factor Authentication
The form "Multi-factor Authentication" requires you to enter the current value of the verification code, as shown by your app:

![Authenticate using Authenticator](Authenticate.png)

When you check "Trust this Computer for 30 Days" a cookie will be stored on your computer which avoids the need to enter the verification code on every log on during 30 days. Leaving such a cookie on an untrusted device reduces the security of your Invantive Cloud environment.

1.4.17 My Messages
The "My Messages" form displays applicable messages for your organization’s agreements. The top bar also displays a bell with a number when there are warnings or error messages:

1.4.18 Contact Us
The "Contact Us" form shows:
• contact and payment information for Invantive,
• procedure to report a security incident.
1.4.19 Log Out

Choose the "Log Out" menu option to disconnect from Invantive Cloud.

Upon re-entry, the credentials must be provided on again. The cookie created when "Trust this Computer" was chosen for the multi-factor authentication is also cleared. Upon next log on you will need to re-enter the MFA verification code.

1.5 Concepts

This section describes concepts of Invantive Cloud.

1.5.1 Security

Invantive Cloud exchanges data with back-end systems of Invantive. This data can have a sensitive nature, which a user doesn't want to be known either to other users or in the public. We have generally classified the information at the same level as data under GDPR. A number of security measures are being enforced based upon this classification.

Invantive provides this text as a help. When your organization must meet legal requirements regarding security, your organization itself is responsible for establishing and verifying the application of your information security policy. Invantive does not provide any security guarantees beyond "reasonable effort".

This section provides some insight in the security measures taken. More details are conditionally available, for instance for security audits. Costs as well as a non-disclosure agreement are part of such disclosure.

Authentication

Authentication to Invantive Cloud requires a log on code and password. The password must meet a number of constraints like a minimum length and inclusion of special character categories. Such a password is a piece of knowledge that is to be kept personal.

Additionally, almost all features of Invantive Cloud require a second authentication step using a so-called Multi-Factor Authentication verification code (also known as "MFA verification code" or "TOTP verification code"). The verification code is generated using a secret that is shared with you at most once using a QR code and the secret key in plain text. This QR code should be registered/scanned using a different device than used to log on, for instance an iPhone with Google Authenticator or Microsoft Authenticator. This secret is considered a "possession" once stored in a phone.

Function Authorization

A user in Invantive Cloud can be associated to exactly one organization. License coordinators on Invantive subscriptions are automatically registered in Invantive Cloud with their organization.

The number of functions available to a user of Invantive Cloud solely depends whether the user is associated with a party. Only limited functions are available when the user is not yet associated with an organization.

Data Authorization

Invantive Cloud uses label security to protect data. A user in Invantive Cloud can have a number of security labels, which are determined automatically based upon properties of the user account. Each data element has a number of labels associated which enable access to the data element. When a user has one of these labels, the data element is made available. In all other cases, the data element is invisible.
For most users which are a member of an organization, this policy ensures that they can only see and change data of their own organization.

**Geo Block**

Access to most Invantine services is only available from designated locations across the world. This includes all countries that are member of the European Union, United Kingdom and the United States. We additionally block usage from locations within these countries which enable access from normally blocked locations.

**Audit Trail**

Invantine Cloud has a number of audit features which are registered outside the web environment to reduce the possibilities for manipulation by fraudulent users.

**Highly Sensitive Data Encryption**

Highly sensitive data such as organization's passwords and refresh tokens are stored in another separate environment ("vault") using reversible encryption. The encryption mechanism is different per organization. The separate environment decrypts the highly sensitive data when necessary. By preference, the unencrypted data does not leave the separate environment to enter Invantine Cloud.

Explicitly not stored in an encrypted format are:

- log on codes.
- name, email address and other address information of users.
- name, email address and other address information of organizations.
- license keys.

**Cloud Database Data Encryption**

When retrieving data from your cloud databases, the data will pass our servers in memory in an unencrypted format. When stored at rest, a number of measures have been taken to ensure the data rests in an encrypted format.

**1.5.2 Devices**

Invantine Cloud has been designed to run across a number of devices:

- Windows 7 or newer with Chrome, Firefox or Edge. IE11 support is limited.
- Mac with Safari, Chrome or Firefox.
- iPhone and iPad with Safari or Chrome.
- Android with Chrome.

The user interface might work on other devices, but there is no formal support or certification on other devices.

**1.6 Bridge Online**

Invantine Bridge Online enables exchange of data stored in databases using a number of protocols. The following protocols are currently supported:
• OData version 4

1.6.1 OData 4
The OData 4 protocol is typically used to retrieve data into Power Query and Power BI. The OData 4 implementation supports:

• streaming data;
• server-side filtering;
• retrieval of metadata.

1.6.2 Metadata
Invantive Bridge Online offers in addition to the protocol-specific implementations also a number of endpoints to retrieve metadata for a connected user:

• User information
• Database information

User Information
The user information is available at the path /me directly below the base URL. Example:

https://app.office365-apps.com/powerbi/bridge/v11/me

Database Information
A list of databases connectable by the user is available at the path /setup/databases directly below the base URL. Example:

https://app.office365-apps.com/powerbi/bridge/v11/setup/databases

2 Invantive Basics
2.1 Configuration
2.1.1 Customer Service
All Invantive products exchanges messages with a central Customer Service node. These messages include:

• error messages for analysis,
• usage statistics for billing.

On Invantive-internal development workstations only, a non-standard Customer Service node can be selected by specifying a deviating URL in the environment variable INVANTIVE_CS_BASE_URL.

2.1.2 OS Platform
A variety of Invantive products is available on Windows, Linux and Mac OSX. The list of supported platforms varies per product, depending on the availability of the libraries such as Microsoft .NET Core.
The OS platform is automatically determined by Invantive software, but sometimes can raise bugs given the bleeding edge nature of Microsoft .NET Core. It is possible to overrule the automatic detection of the OS platform by assigning a value to the environment variable INVANTIVE_FORCED_OS. The following values are supported:

- windows: Microsoft Windows,
- linux: Linux,
- osx: Mac OSX.

2.1.3 Startup Checks

The Invantive products execute a number of checks at application start to ensure that the environment running the software meets a number of pre-conditions as established by Invantive. These checks can be disabled for analysis purposes and out-of-the-ordinary deployment scenarios.

Support on products is only available when checks are not manually configured.

The following environment variables allow manual configuration of the checks by setting them to 'true' or 'false':

- INVANTIVE_CHECK_SYSTEM_COMPATIBILITY: validate system compatibility.
- INVANTIVE_MAINTAIN_VSTO: re-activate Invantive VSTO add-ins when disabled.
- INVANTIVE_CHECK_OS_UPDATES: validate OS updates have been applied sufficiently recent.

Configuration of checks is solely available on the Windows OS platform.

2.1.4 Cryptography

The Invantive products use cryptographic operations to protect:

- License key
- Invantive Keychain

By default, a key pair is used and stored in the profile of the user for encryption and decryption.

**Windows**

On Windows, the encryption is normally done using Windows-managed encryption protocols. The key elements are stored in the roaming profile of the current user.

In some deployment scenarios, a user has only a temporary Windows profile. In that case it is not possible to store a key pair. This is typically signaled by an itgenlic510 error code.

As an alternative, you can configure the environment variable INVANTIVE_CRYPTOGRAPHY to the value "MACHINE" to use a key pair that is stored solely on the device.

By setting the environment variable INVANTIVE_RSA to INVANTIVE, encryption on Windows is also managed as on other platforms by custom Invantive code at the expense of loss of some security features. Often Windows patches break the functionality of previously Windows-managed encryption keys, typically signaled by a error like "Key not valid for use in specified state". Switching to custom Invantive code will solve this problem.

**Linux, Mac OSX, Android, iPhone, Windows on Parallels**
On all other platforms, Invantive offers solely encryption using key elements stored in files in the RSA folder.

### 2.1.5 UI Language

The Invantive products supported approximately ten languages. On first startup, the language of the Windows version will be used when supported. Otherwise US-English is used.

The license decides which from the languages are supported.

Additionally, the user interface language chosen can further be restricted by setting the environment variable `INVANTIVE_ALLOWED_LANGUAGE_CODES` to a comma-separated list of two characters ISO 639-1 codes.

### 2.1.6 Folders

The Invantive products store configuration and runtime information in a folder hierarchy. This hierarchy is located within the Invantive folder of the user profile. It can be opened in Windows Explorer by entering `%USERPROFILE%\Invantive` in the location bar.

The location of the folder hierarchy can be changed using environment variables. The central location can be changed by setting the environment variable `INVANTIVE_CONFIGURATION_FOLDER` to a different folder.

A number of subfolders can be relocated too:

- `INVANTIVE_CONFIGURATION_BACKUP_FOLDER`: the folder with backups of settings files. Defaults to the master folder plus "Backup".
- `INVANTIVE_CONFIGURATION_CACHE_FOLDER`: the folder with disk cache files. Defaults to the master folder plus "Cache".
- `INVANTIVE_CONFIGURATION_HTTP_CACHE_FOLDER`: the folder with HTTP disk cache files. Defaults to the root cache folder plus "http" and the OS-user and front-end user.
- `INVANTIVE_CONFIGURATION_DATA_CACHE_CACHE_FOLDER`: the folder with Data Cache disk cache files. Defaults to the root cache folder plus "datacache". Disk cache files improve performance of HTTP downloads, but when necessary can be purged.
- `INVANTIVE_CONFIGURATION_LOG_FOLDER`: the folder with log files. Defaults to the master folder plus "Log".
- `INVANTIVE_CONFIGURATION_DATABASES_FOLDER`: the folder with databases files. Defaults to the master folder.
- `INVANTIVE_CONFIGURATION_PLUGINS_FOLDER`: the folder with plugin files. Defaults to the master folder plus "Plugins".
- `INVANTIVE_CONFIGURATION_PROVIDERS_FOLDER`: the folder with provider files. Defaults to the master folder plus "Providers".
- `INVANTIVE_CONFIGURATION_RSA_FOLDER`: the folder with RSA configuration files. Defaults to the master folder plus "RSA".
- `INVANTIVE_CONFIGURATION_TEMPLATES_FOLDER`: the folder with template files. Defaults to the master folder plus "Templates".
- `INVANTIVE_CONFIGURATION_TRACE_FOLDER`: the folder with trace files. Defaults to the master folder plus "Trace".
The values may contain any combination of the following placeholders which will be expanded:

- iiid: Invantive Installation ID.
- sessionid: Invantive session ID.
- frontenduser: name of front-end user (when available).
- osuser: name of operating system user.

A folder can be configured for custom translations which overrule all default translations using the environment variable INVANTIVE_I18N_FOLDER.

3 Contact Information
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Always include your telephone number, your e-mail address and a short description. Please do not give sensitive details until a secure communication channel has been established.

For urgent security incidents please send both an email outside of opening hours and call with number display on. You will be called back as soon as possible.
We use the threat matrix of NCSC to classify a reported incident. We use the Responsible Disclosure Guideline of NCSC as basis for our policy.

You will always receive a confirmation of receipt within 1 working day.

We ask you not to share information about the security incident with others until Invantive has had sufficient opportunity to resolve the problem and users have had sufficient opportunity to use a possibly updated version of the software. We ask you to not further use any knowledge of the security incident and to omit any actions made possible after the existence of the security problem.

If you are not satisfied with the handling, we would like to ask you to contact the NCSC.

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