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**Bosch Access Importer/Exporter Installation and User Guide**

Abstract This document describes the installation and operation of the Bosch Access Importer/Exporter tool for cardholder data.

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# 1 Overview

The **Bosch Access Importer/Exporter**, hereafter referred to by the abbreviation IMPEX, is a standalone software tool to facilitate the bulk import and export of cardholder data to and from the cardholder database of the Bosch Access Management system.

- The **import** process adds, deletes or modifies cardholder data.
- The **export** process writes specific cardholder data from the database to a CSV file. An export template file specifies which data are exported, and how they are formatted.

IMPEX handles LDAP data and data from customizable CSV files.

IMPEX is installed on a computer with a network connection to the cardholder database of the access control system. You can operate IMPEX via a secure HTTPS web client from any authenticated computers and browsers on the same network.

## 1.1 Terminology

**AMS/Access Management system:** the Bosch access control system to which the cardholder database belongs

**Login server:** the computer where the access control system (e.g. AMS or BIS-ACE) is installed

**Database server:** the computer where the cardholder database is installed, typically but not necessarily the Login server.

**IMPEX server:** the computer where IMPEX is installed

**IMPEX client:** a computer where IMPEX is operated via a secure web connection

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**LDAP:** (Lightweight Directory Access Protocol) an open protocol for sharing and maintaining user data.

**CSV:** (Comma-separated values) a file extension denoting a text file which contains tabular data. The data records are separated by new lines, and the attribute fields are separated by a designated character, typically a comma or semicolon.

**Cardholder:** a personnel record that is managed by the access control system, irrespective of whether their credentials are cards, key fobs, PINs or biometric.

**Old Import/Export tool:** A tool available in the BIS Configuration Browser **Tools > ACE Configuration import/export > Configuration import/export**

## 2 Updating the application

**Note:** If you have reinstalled over an older version without following the steps in this section, then you may find that no HTTPS certificate was created and secure connection no longer works. To remedy this, follow the steps described in section [There is no Certificate file on IMPEX server.](#)

### 2.1 Prerequisite software

- **IMPEX** is installed on the IMPEX server. If not, proceed to section 3 Installation

### 2.2 Preliminary steps

1. Log on to the IMPEX web UI application.
2. Make sure there are no Scheduler Templates in Active state.

Type	Template Name	Data Type	Last Started	Last Completed	Next Start	Active	Action
Export	IDs_of_ent	CSV	21.10.2019 11:36	21.10.2019 11:40	-	-	☑ ✎ 🗑
Export	auths	CSV	21.10.2019 11:34	21.10.2019 11:38	-	-	☑ ✎ 🗑
Export	cards	CSV	21.10.2019 11:33	21.10.2019 11:37	-	-	☑ ✎ 🗑
Import	ldaps	LDAP	21.10.2019 11:33	21.10.2019 11:37	-	-	☑ ✎ 🗑
Import	ldap8	LDAP	21.10.2019 11:34	21.10.2019 11:38	-	-	☑ ✎ 🗑
Import	companiesAll	CSV	21.10.2019 11:32	21.10.2019 11:36	-	-	⬆ ☑ ✎ 🗑
Import	personsAll	CSV	21.10.2019 11:35	21.10.2019 11:39	-	-	⬆ ☑ ✎ 🗑
Import	delete_personsAll	CSV	21.10.2019 11:31	21.10.2019 11:36	-	-	⬆ ☑ ✎ 🗑
Import	CompPersCardsAuth	CSV	30.09.2019 18:36	30.09.2019 18:36	-	-	⬆ ☑ ✎ 🗑

3. Make sure there are no import/export tasks in 'Pending' or in 'In Progress' state.

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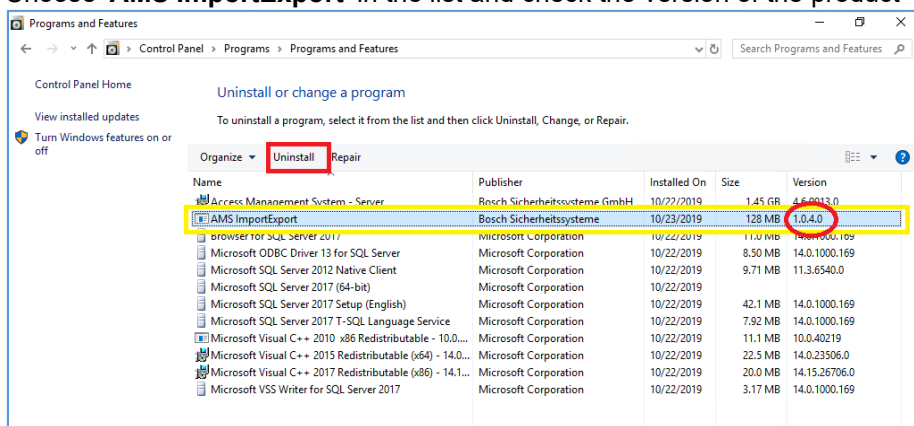
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Agent Task List

Type	Template Name	Data Type	Executed By	Created On	Started On	Completed On	State	Action
Import	ldap8	LDAP	Scheduler	25.10.2019 14:59	25.10.2019 14:59	-	In progress	
Import	ldaps	LDAP	Scheduler	25.10.2019 14:59	25.10.2019 14:59	-	In progress	
Export	cards	CSV	Scheduler	25.10.2019 14:59	25.10.2019 14:59	-	In progress	
Import	ldapss	LDAP	Scheduler	25.10.2019 14:59	25.10.2019 14:59	-	In progress	
+ Export	auths	CSV	Scheduler	25.10.2019 14:59	25.10.2019 14:59	25.10.2019 14:59	Succeeded	↓
+ Import	ldap8	LDAP	Scheduler	25.10.2019 14:58	25.10.2019 14:58	25.10.2019 14:58	Failed	↓
+ Export	IDs_of_ent	CSV	Scheduler	25.10.2019 14:58	25.10.2019 14:58	25.10.2019 14:59	Succeeded	↓
+ Export	cards	CSV	Scheduler	25.10.2019 14:57	25.10.2019 14:57	25.10.2019 14:58	Succeeded	↓
+ Import	ldapss	LDAP	Scheduler	25.10.2019 14:57	25.10.2019 14:57	25.10.2019 14:58	Failed	↓
+ Export	auths	CSV	Scheduler	25.10.2019 14:57	25.10.2019 14:57	25.10.2019 14:58	Succeeded	↓

### 2.3 Updating IMPEX to a newer version

1. Go to **Control Panel > All Control Panel Items > Programs and Features**
2. Choose **'AMS ImportExport'** in the list and check the version of the product



3. If **Version=1.0.4.0** then click **Uninstall**, otherwise proceed with step 5

  - Uninstall starts

4. Wait until uninstall finishes

  - Uninstall finished

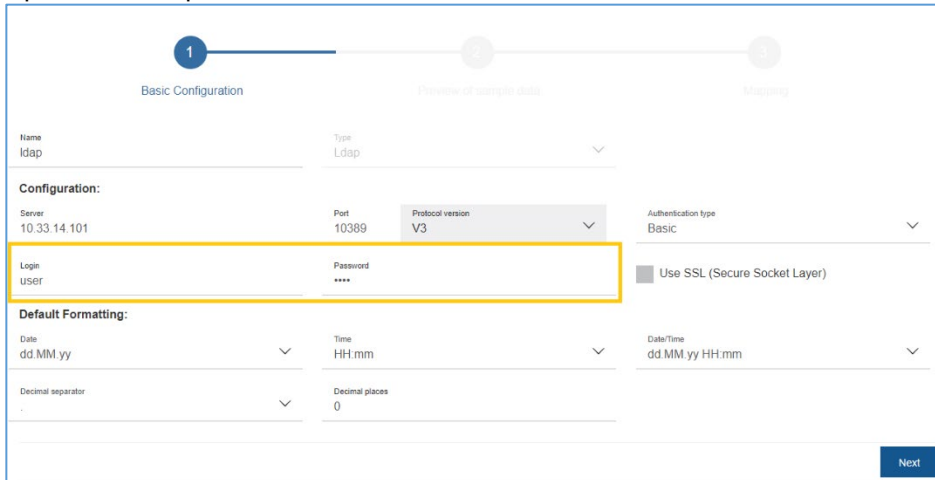
5. If **Version** is not 1.0.4.0, proceed to the [Installation](#) section.

### 2.4 Post-update steps

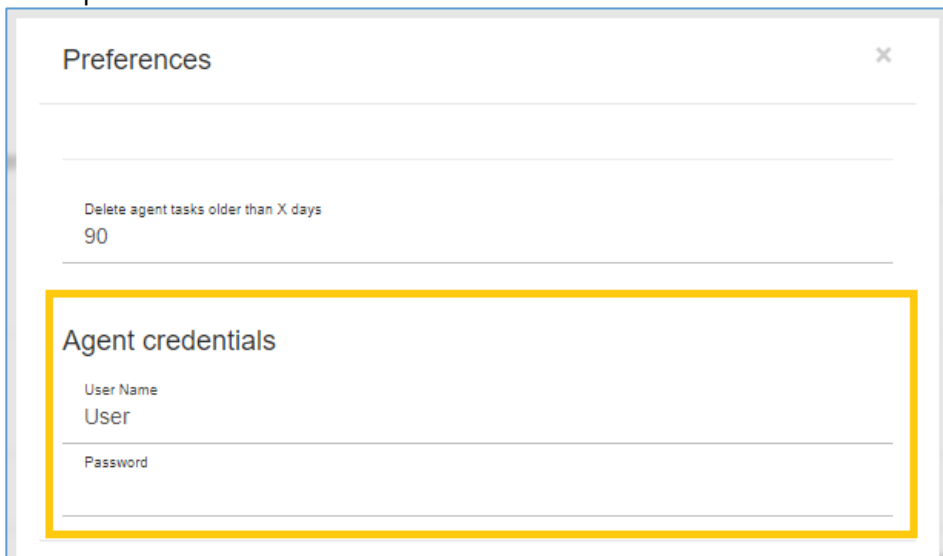
After updating from 1.0.4.0 version to 1.0.5.0 or higher, follow the instructions in this section to update the credentials in every LDAP Import Template, and verify that IMPEX uses the correct credentials in the **Preferences** pop-up.

### 2.4.1 Credentials update

1. Go to the **Import** Tab
2. Find all Import Templates of type LDAP
3. Open each template in turn and enter the credentials for the LDAP server



4. Save the templates
5. Go to the **Agent** tab and click the cog icon to access **Preferences**
6. Make sure that the correct **Agent credentials** are entered to perform import and export tasks



### 2.4.2 Updating the certificates

After installing a new version a new IMPEX certificate is created. Copy it to the client working stations as described in the section [Importing the HTTPS certificate for IMPEX clients and browsers](#)



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## 3 Installation

### 3.1 Prerequisite software

- **SQL Server 2014 Express edition** or higher on the IMPEX server
- **.NET Framework 3.5** installed and enabled on the IMPEX server:  
Windows Start > **Turn Windows features on or off** > **.NET 3.5 enable**

### 3.2 Preliminary steps

1. Log on to the IMPEX server.
2. Copy the installation package to the IMPEX server.

### 3.3 Installing IMPEX on the IMPEX server

1. In the installation package, right-click `ImportExportInstaller_x.x.x.x.exe`, where each x represents any digit in the version number, and select **Run as administrator**.  
– The installation preparation wizard opens. Follow the installation preparation wizard.
2. Read and accept the terms in License Agreement and click **Next>**
3. Enter the SQL Database Server configuration data:
  - Choose whether to use local or remote **SQL Server**
  - **SQL Server**: The host name of the access control system's database server. If remote was chosen then please follow steps described in [Setting up a remote SQL server database for IMPEX](#) before proceed.
  - **SQL instance**: The SQL instance name. The default instance name is ACE
  - **SQL user name**: The name of the SQL user that will be used to access the database. This user must have administrative rights. The default SQL user name is sa
  - **SQL password**: The database password for the chosen **SQL user name**
  - **'ImportExportUser' user password** – the password defined during the user creation on remote **SQL Server**
4. Click **Next>**
5. Enter the Administrator password and confirm if prompted.
6. If a dialog window appears listing **Files in Use**
  1. Choose **Close the application and attempt to restart them**
  2. Click **OK**
7. Click **OK** if warned that setup was unable to automatically close all requested applications.
8. Observe the installation progress bar.
  - You will be notified if the installation program needs to enable IIS.
9. Click **Finish**  
If the installation fails, see section 13.4 An error occurred while processing your request. for possible causes.
10. If you began this installation by uninstalling version 1.0.4.0, proceed with [Post-update steps](#)



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### 3.4 *Setting up a remote SQL server database for IMPEX*

**IMPORTANT:** In order for IMPEX to use remote database, make sure that the SQL server has the same Windows user for database administration, with the same name/password, BEFORE running the IMPEX setup on the IMPEX server.

On the remote database server:

1. Create the user "ImportExportUser" with the following settings
  - **Username** (case sensitive): "ImportExportUser"
  - **Password:** Set the password according to your policies, and note it carefully as it will be required for the IMPEX setup on the IMPEX server.
  - **Member of group:** Administrators
  - **User must change password at next logon:** NO
  - **User cannot change password:** YES
  - **Password never expires:** YES
  - **Logon as a service:** YES
  - **Account is disabled:** NO
2. If a firewall is installed, deactivate it now.  
The firewall can be restarted after a successful installation. Refer to the document "BIS\_Firewall\_Configuration.pdf".
3. Ensure that network protocols "Named Pipes" and "TCP/IP" are enabled for the SQL Server. (Refer to the section **Installing and publishing SQL server databases on database servers** in the BIS Installation Guide.)
4. Start the SQL Server Browser service, if it has not been started automatically.

### 3.5 *Importing the HTTPS certificate for IMPEX clients and browsers*

The installation program creates a self-signed certificate and installs it on the IMPEX server. It is not necessary to import the certificate to the IMPEX server, unless you are using Firefox. If you are using Firefox, proceed to 3.4.2 Importing an HTTPS certificate to the Firefox browser.

To run IMPEX via HTTPS from a computer other than the IMPEX server (i.e. from an IMPEX client) copy a certificate from the server to the IMPEX client and install it there, as described below:

#### 3.5.1 **Installing the HTTPS certificate on an IMPEX client**

1. On the IMPEX server find the certificate



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- a. AMS:  
C:\Program Files (x86)\Bosch Sicherheitssysteme\  
ImportExportACEWS\ACEImportExport CA.cer
- b. BIS:  
**Start > Manage Computer Certificates > trusted root certification authorities > Certificates**, right click **BisSelfSignedCERF**, All tasks > **Export**

And copy it to the intended IMPEX client computer.

3. From an account with access to administrator rights on the IMPEX client, double-click the certificate.
  - A certificate dialog box appears.
4. Click **Install Certificate...**
  - The **Certificate Import Wizard** opens.
5. Select **Local Machine** (recommended) and click **Next**
6. Select **Place all certificates in the following store** to specify a location for the certificate (recommended).
7. Click **Browse...**
  - A dialog box opens to browse the certificate store.
8. Select **Trusted Root Certification Authorities** (recommended) and click **OK**.
  - You return to the **Certificate Import Wizard**.
9. Click **Next**
10. Click **Finish** to import the certificate.

### 3.5.2 Importing an HTTPS certificate to the Firefox browser

Skip this section if you are not using the Firefox browser.

In principle, you can use any browser on the IMPEX client: Chrome reads the certificate from the operating system, but Firefox and others may require you to import the certificate separately into the browser. Use the following procedure for Firefox.

On the IMPEX server locate the certificate

- **AMS:**  
C:\Program Files (x86)\Bosch Sicherheitssysteme\  
ImportExportACEWS\ACEImportExport CA.cer
- **BIS:**  
**Start > Manage Computer Certificates > trusted root certification authorities > Certificates**, right click **BisSelfSignedCERF**, All tasks > **Export**

If you are going to use Firefox on the server, treat the server as a client in performing the following steps:





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1. Copy the certificate to the intended IMPEX client computer.
2. On the client or server machine start Firefox and type `about:preferences` in the address bar
  - An options page opens.
3. In the **Find in Options** field, type `certificate`
  - The View Certificates button appears on the page.
4. Click the **View Certificates** button.
  - The **Certificate Manager** dialog opens with several tabs
5. Select the **Authorities** tab.
6. Click **Import...**
  - A dialog box to select the certificate opens.
7. Locate and select the certificate, then click **Open**.
  - The **Downloading Certificate** dialog opens.
8. Select **Trust this CA to identify websites** and click **OK**.
  - The Downloading Certificate dialog closes
9. In the **Certificate Manager** dialog, click **OK**.
  - The certificate import process is finished.

### 3.6 Uninstalling

To uninstall an IMPEX do the following:

1. Click Start menu > **Control panel** > **Programs** > **Uninstall a program**, select **Bosch Access Import/Export** and click **Uninstall**.
2. Follow the installation wizard.
3. Enter connection details to delete the database:
  - Select the radio button if you want to delete the IMPEX database.
  - **SQL Server**: The host name of the access control system's database server. If the host name is grayed out then only the local SQL Server is available.
  - **SQL instance**: The SQL instance name. The default instance name is `ACE`
  - **SQL user name**: The name of the SQL user that will be used to access the database. This user must have administrative rights. The default SQL user name is `sa`
  - **SQL password**: The database password for the chosen **SQL user name**

**Note:** If you are completely removing a BIS or AMS system, it is recommended that you uninstall IMPEX and delete its database first. Otherwise it is recommended that you delete IMPEX database files manually. The database files (with *ImportExport* filenames) are usually located on one of the following paths:

- On the **AMS** server  
`C:\Program Files\Microsoft SQL Server\MSSQL14.ACE\MSSQL\DATA` or
- On the **>BIS** server  
`C:\Program Files (x86)\Microsoft SQL Server\MSSQL12.BIS_ACE\MSSQL\DATA`

4. Click **Next** button and wait until uninstallation will be finished.

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## 4 Logon and authentication

In order to browse and manipulate the cardholder database, IMPEX must log on with an operator name that has sufficient rights. In particular:

- **User profile:** UP-Administrator
- **API usage:** unlimited

If such an operator is already defined in the access control system, you may skip the next section.

If no such user exists, or if you wish to operate IMPEX only through a dedicated operator name, follow the next section to create the operator and assign those rights.

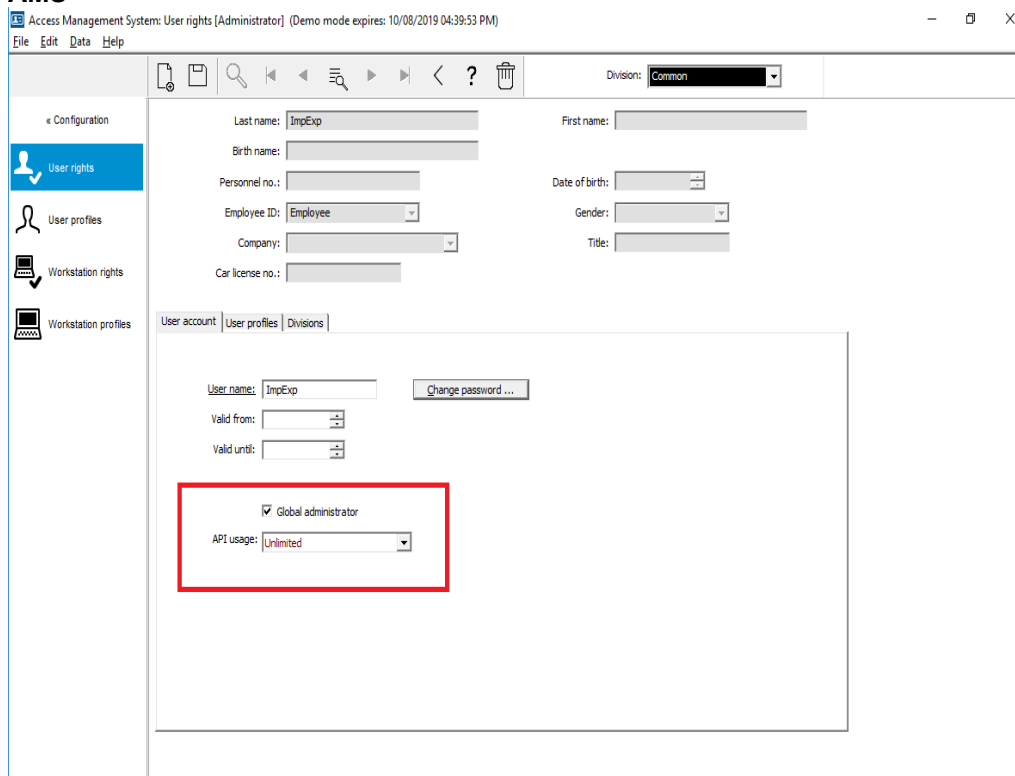
### 4.1 Creating and enabling an IMPEX user

If no such user exists, or if you wish to operate IMPEX only through a dedicated user, create the operator in the access control system and assign those rights.

- Dialog path (AMS): Main menu > **Configuration > Operators and workstations > User rights**
- Dialog path (BIS): Configuration Manager > **Administration > Operators > tabs: ACE operator settings and ACE API Access rights**

After creating the operator, save the configuration and reboot the login server of the access control system.

#### AMS



AMS  
Access Management System: User rights [Administrator] (Demo mode expires: 10/08/2019 04:39:53 PM)

File Edit Data Help

Division: Common

Configuration

User rights

User profiles

Workstation rights

Workstation profiles

Last name: ImpExp First name:

Birth name:

Personnel no.:

Date of birth:

Employee ID: Employee Gender:

Company: Title:

Car license no.:

User account | User profiles | Divisions

User name: ImpExp Change password ...

Valid from:

Valid until:

Global administrator

API usage: Unlimited

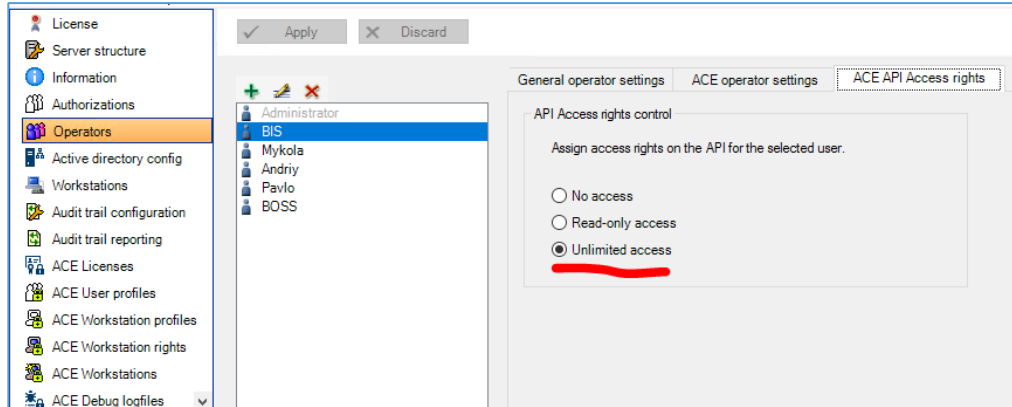
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### BIS Configuration Browser

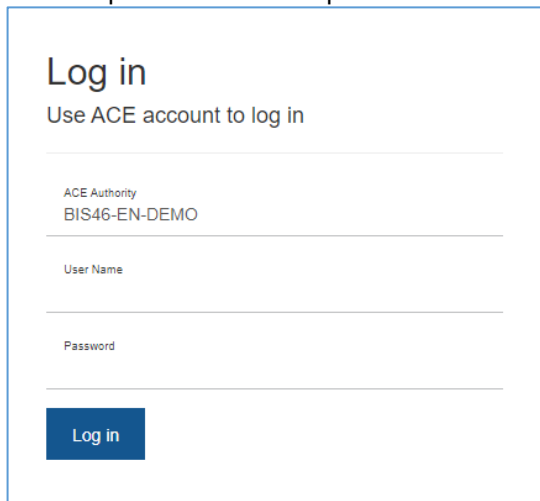


## 4.2 Logging on to IMPEX

1. Double-click the IMPEX shortcut on the desktop or  
Open any browser with the address [https://<IMPEX\\_server>/ImpEx](https://<IMPEX_server>/ImpEx)  
where <IMPEX\_server> is the computer where IMPEX is installed.

If you are using Internet Explorer JavaScript must be enabled. If it is not, then make the following two settings:

1. Click Start menu > **Internet Options** > **Security** > **Local intranet**, and set security level to *medium* or lower.
  2. Click Start menu > **Internet Options** > **Security** > **Internet**, and set security level to *medium-high* or lower.
2. Enter the following information in the Login window:
    - **ACE Authority:** (hostname or IP of the login server)
    - **User Name:** The name of an operator with unlimited API usage, as described above
    - **Password:** The password of that operator.



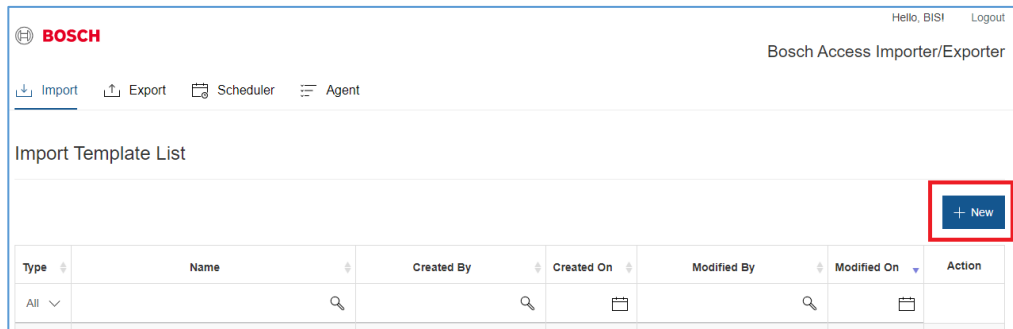
## 5 Templates for import and export

**Templates** are named files, created by the IMPEX user, that contain mappings between the fields of the cardholder database and the fields of the CSV file. IMPEX can retrieve, add, modify and delete only those fields that are specified in a template.

After logon the first screen shown in IMPEX is **Import Template List**. If the list is empty, create an import template as described in the next subsection.

### 5.1 Creating an import template for a CSV data source

1. Select **Import**
  - The **Import Template List** dialog appears
2. Click the **+New** button



4. In the pop-up select **CSV** as **Source Type** and click the **Add** button
  - The **Create Import Template** dialog is displayed.
5. Enter or select values for the following fields. (\*) means the field is mandatory:
  - (\*) **Name**: A unique name for the template
  - (\*) **Upload sample file**:
  - **Separator**: the character that is used to demarcate data fields
  - **Column names in first data row**: If the check box is selected, the first row in the table is interpreted as column names.
  - **Enable automapping**: make this option active and if input file contains headers in format *EntityName.PropertyName*. then IMPEX will try to map columns automatically.
  - Default **Date**, **Time** and **Date/time formats**
  - **Decimal separator**: the period or the comma character, used to separate units from tenths.
  - **Decimal places**: the number of decimal places to be imported.
  - **Import Photo mode**: Defines the mode on how IMPEX will handle Image property, see [Import of images](#)

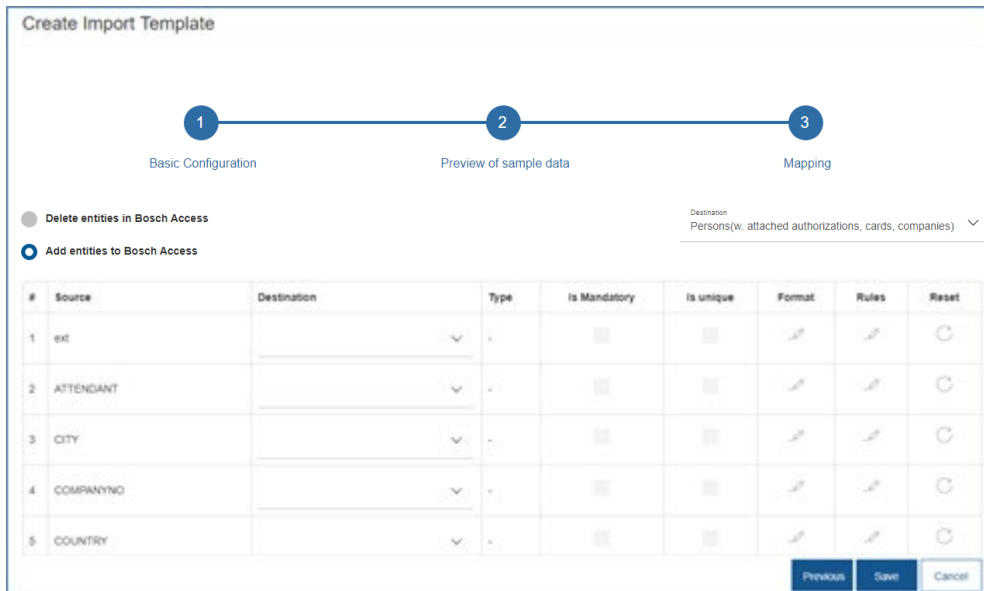
6. Click Next

- The second page of the **Create Import Template** wizard appears, with a preview of the sample data.
- If you selected **Column names in first data row** on page 1, then the first row of input file will be displayed as a header row in bold font.
- The preview contains the first 10 rows plus the header from sample input file chosen on page 1.
- The data is divided into columns according to the separator character that you chose on page 1.

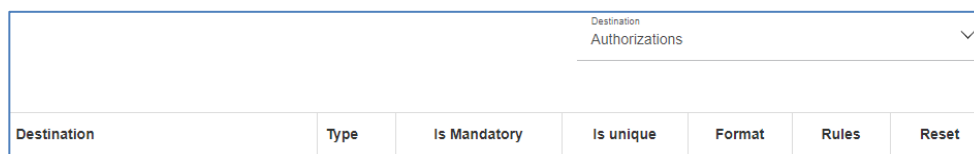
ext	ATTENDANT	CITY	COMPANYNO	COUNTRY	EMAIL	FAX
1111	attendant0320201918120507	city0320201918120507	company10399	country0320201918120507	email0320201918120507@mail.com	fax0320201918120507
1112	attendant0320201918120507	city0320201918120507	company10400	country0320201918120507	email0320201918120507@mail.com	fax0320201918120507
1113	attendant0320201918120507	city0320201918120507	company10401	country0320201918120507	email0320201918120507@mail.com	fax0320201918120507
11140320201918120507	attendant0320201918120507	city0320201918120507	company10402	country0320201918120507	email0320201918120507@mail.com	fax0320201918120507
11150320201918120507	attendant0320201918120507	city0320201918120507	company10403	country0320201918120507	email0320201918120507@mail.com	fax0320201918120507

7. Click Next

- Page 3 of the Import Template wizard appears, containing a mappings table:
- In the mappings table, every row maps a column in the input file with an object in the database, and allows you to define metadata for that object, such as its datatype, uniqueness and formatting.



8. Choose an execution mode, **Add entities to Bosch Access** or **Delete entities from Bosch Access**. If Add mode is chosen then entities will be inserted to the Access system and if Delete is chosen then entities will be searched by unique fields and deleted from the Access system if found.
9. Select a type of database entity from the **Destination** drop-down list above the table.
  - IMPEX can import and export the following types of entity.
    - Persons (Cardholders)
    - Visitors
    - Companies
    - Authorizations
    - Cards



10. Enter the following metadata for each row:



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<b>Destination</b> (first column in table, not the Destination from the previous step)	(Select from list) The field in the database record into which the value will be written
<b>Type</b>	(Select from list)The data type of the destination field
<b>Is mandatory</b>	(Check box) Select if the database record would be invalid without a value in this field.
<b>Is unique</b>	(Check box) Select if the value in this field is unique to the database record. See the following subsections for details.
<b>Datetime format</b>	(Select from list) The datetime format of the destination field, e.g. dd/MM/yyyy HH:MM See the following subsections for details.
<b>Rules</b>	(Click the edit icon to start a selection dialog) One or more text transformations that will be applied to the value before it is written to the database. See the following subsections for details.
The <b>Reset</b> button at the end of each row instantly deletes all the metadata for that row.	

11. When the mappings are complete, click **Save** to save the import template.
  - The Import Template List is displayed, including a new row for the template you have just created.

### 5.1.1 Unique identifier option mechanism

If you select one of the following in the **Destination** drop-down list:

- Persons(w. attached authorizations, cards, companies)
- Visitors(w. attached authorizations, cards, companies)

and the import file contains property fields for more than one entity type (Persons, Visitors, Companies, Authorizations, or Cards) then each entity type requires at least one of its fields to be unique.

Since version 1.0.5.0 only Persons/Visitors require unique keys to be defined. For Cards, Companies and Authorizations unique keys are set automatically.

The import process then groups the rows in the CSV import file by this unique field value. That is, all lines in the import file that have the same value in the unique field will be treated as belonging to the same database entry.

If multiple lines in the import file refer to the same field in a unique entity, then the last line “wins”, that is, its field value will supersede that of the earlier lines.



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There are three methods for defining a field as unique:

- A) If an entity type, such as `Persons` or `Visitors`, has a naturally unique field, such as an ID number, in the database, then select the **Is unique** check box in the mapping. An example is `Persons.PERSNO`
- B) If an entity type, such as `Persons`, does not have a naturally unique field in the database, then you can define a dummy field called, for example `ext` in the import template, and give it a **Destination** of `ExternalID`, for example `Persons.ExternalID`.  
The import process will then treat all the `Person` lines in the import file that have the same value in the column `ext` as belonging to the same `Person`. In this case do **not** select the **Is unique** check box.

**IMPORTANT:** If you have used the **Old Import/Export tool** with key field(s) not mapped to any of the properties, and you create a template using same data input, this will cause duplication of data in the BIS or AMS system. Similarly, if the BIS or AMS system already has data inserted somehow with `ExternalID` (without using `ImpEx`) and you will try to do update of such a data, `ImpEx` will create new entries in the system, because these `ExternalIDs` are new for it.

- C) Use `Persons.PERSID` for `Persons` or `Visitors.VISID`. The internal database identifiers of the entities. Please note that only update is available with this option, and if the input value is empty import will fail with an error.

**IMPORTANT:** Do not mix the methods A, B and C within the same entity type.

### 5.1.2 Import of images

To do import of the Person's or Visitor's photos a column which contains a path to image file or image file name should be mapped to special property 'Image'  
There are 3 options available to import images (drop-down on 1<sup>st</sup> step of Import Template):

1. Full path – input file should contain value with full path to the image file located on the IMPEX server
2. Relative path – input file should contain value with image file name with extension. User should provide a path to folder with images located on the IMPEX server
3. From Zip file – input file should contain value with image file name with extension. User should upload a ZIP archive with images on immediate or scheduled import.

**Note:** Image files should not be bigger than 500Mb.

### 5.1.3 Setting a datetime format for a mapping

1. Click the Edit icon in the **Rules And Formatting** column
2. Select a datetime format from the list



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### 5.1.4 Adding Rules to a mapping

**Rules** are text transformations that the import process applies to a value from the import file before entering it in the access control database. This is to ensure that the database does not become corrupted by invalid data.

To add a rule for a specific mapping:

1. Click on 'Edit' icon in 'Rules and Formatting' column

Column	Column name in source	Destination	Is Mandatory	Is Unique	Rules And Formatting	Combine	Remove
1	Persons.ExternalId	Persons.ExternalId	<input type="checkbox"/>	<input type="checkbox"/>			
2	Persons.FIRSTNAME	Persons.FIRSTNAME	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

- The **Rule List** pop-up is displayed.

Rule List ✕

+ New

Order	Name	Description	Action
No matching records found			

Cancel
Save

2. Click **+New** to see the list of available rules

Rule List ✕

Choose rule to add:

Trim

Decimal to hexadecimal conversion

Hexadecimal to decimal conversion

Fill

Predefined text substitution

Extract characters

Character constraints

Case sensitivity

Cancel
Add

3. Select a single rule and click **Add** to add it to the list of rules in the **Rule List** dialog.
4. If the rule requires parameters, specify them in the fields provided.  
For instance, for the **Case sensitivity** rule select one of:
  1. All upper case
  2. All lower case
  3. Capitalize first word in line
  4. Capitalize each word in line



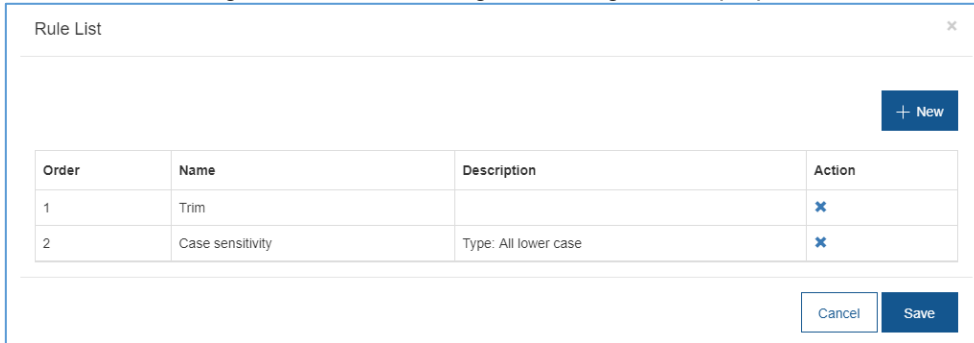
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- If more text transformations are required on the same field, click **Add** and repeat the previous step. The rules will be applied in the order in which they appear in the **Rule List** dialog. Order can be changed via drag and drop option.



- Click **Save** in the **Rule List** dialog to save the list of rules.

### 5.1.5 Column Split


On import file preview (2<sup>nd</sup> page) you can define whether the column in the file should be split before inserting the data into the access control database. To configure a split do the following:

- On the 2<sup>nd</sup> page, click the diverging arrows icon  in the header of the file preview table  
A configuration pop-up appears
- Enable **Split in the middle** checkbox or specify a separator character and the number of the columns in which to split
- Click **Save**  
The Preview reflects the Split configuration

After you configure a column split, additional rows, representing database fields as column numbers, will be available on the 3<sup>rd</sup> page: **Mappings**

### 5.1.6 Column Combine

On **Mappings** (3<sup>rd</sup> page) you can define whether specified column data should be merged before they are inserted into the access control database. To configure such a combination do the following:

- On 3<sup>rd</sup> page, click the converging arrows icon  in the **Combine** column  
A configuration pop-up appears
- Specify a connector character with which to join data values
- Click **'Add column'** to add additional row and select a column to be combined with
- Click **'Save'** button to save combine settings

After you configure a column combination, the selected values from input file will be joined with the specified connector character before they are inserted into the access control database.

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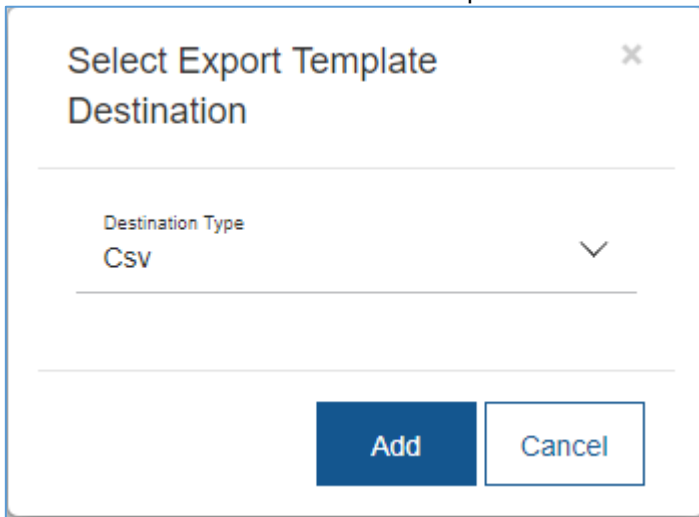
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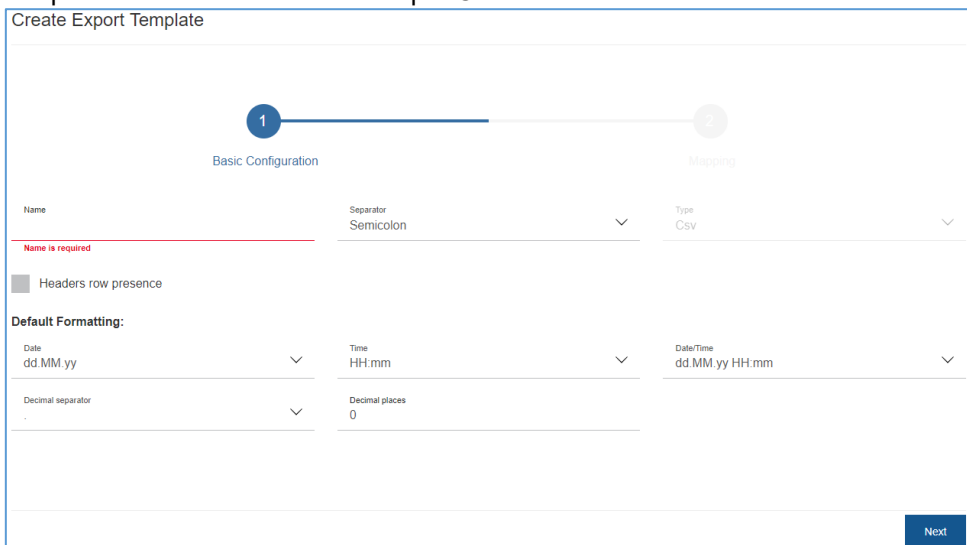
## 5.2 Creating an export template for CSV data

1. Click the **'Export'** tab to see the Export Template List
2. Click the **'New'** button to choose export destination:



The screenshot shows a dialog box titled "Select Export Template Destination". It has a close button (X) in the top right corner. Below the title, there is a "Destination Type" dropdown menu currently set to "Csv". At the bottom of the dialog, there are two buttons: "Add" (a dark blue button) and "Cancel" (a white button with a blue border).

3. Click the **'Add'** button to start the creation of an export template.
4. Enter a name for the template.
5. (Optional) Reset the **Separator** character (default is the semicolon) and the options under **Default Formatting**, including the decimal separator and presence of headers in the output CSV file.



The screenshot shows the "Create Export Template" wizard, specifically the "Basic Configuration" step (indicated by a blue circle with the number 1). The wizard has a progress bar at the top with two steps: "Basic Configuration" (active) and "Mapping". The form contains the following fields:

- Name:** A text input field with a red error message "Name is required" below it.
- Separator:** A dropdown menu set to "Semicolon".
- Type:** A dropdown menu set to "Csv".
- Headers row presence:** A checkbox that is currently unchecked.
- Default Formatting:**
  - Date:** A dropdown menu set to "dd.MM.yy".
  - Time:** A dropdown menu set to "HH:mm".
  - Date/Time:** A dropdown menu set to "dd.MM.yy HH:mm".
  - Decimal separator:** A dropdown menu set to ".".
  - Decimal places:** A dropdown menu set to "0".

A "Next" button is located at the bottom right of the form.

6. Click **'Next'** to see page 2 of **Create Export Template** wizard  
By default there are initially no mapping lines in the template.
7. Select a Source from the **Source** list. Your choice will determine the database fields that will be offered in the **Column name in source** column in the mapping lines. Currently IMPEX can export the following entities:

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- Persons (Cardholders)
  - Visitors
  - Companies
  - Authorizations
  - Cards
8. Click the **'+ Add Mapping'** button to add a new mapping line.  
A new mapping line is added.  
Drag-and-drop any lines to change their order in the table, if required.
    - a. Similar as for Import configuration [Combine](#) is available for Export.

Create Export Template

1
2

Basic Configuration
Mapping

+ Add Mapping
Source Authorizations ▼

Column	Column name in source	Type	Format	Rules	Remove
1	SHORTNAME <span style="float: right;">▼</span>	String			
2	<input type="text"/> <span style="float: right;">▼</span>	-			
3	<input type="text"/> <span style="float: right;">▼</span>	-			

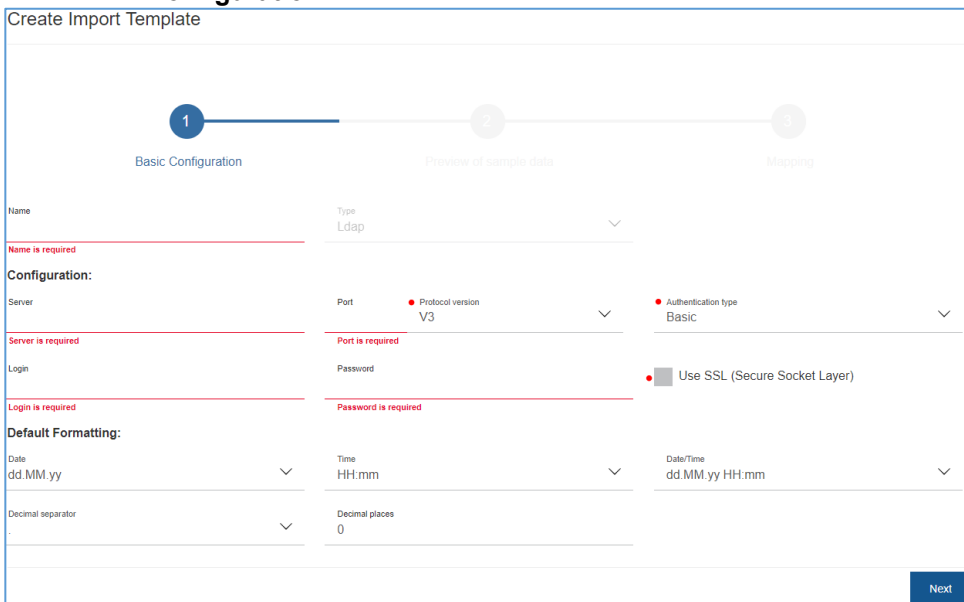
Previous

Cancel
Save

9. After all the required mappings have been added click 'Next' button to see export preview with actual data taken from ACE.
  - a. Split configuration is available to be configured in a same way as on Import [Column Split](#)
10. Click the **'Save'** button to save the template and finish Export Template Creation.  
**Note:** It is not possible to save the template if it contains no complete mappings.

### 5.3 Creating an import template for LDAP data

1. Select **Import**
  - The **Import Template List** dialog appears
2. Click the **+New** button
  - **The Select Import Template source** popup appears
3. Select **LDAP** from the list and click **Add**
  - The **Create Import Template** dialog appears, Page 1 **Basic Configuration**



4. Enter or select values for the following fields:
  - **Name:** A unique name for the template

#### Configuration

**Server:** The name or the IP address of the LDAP server

- **Port:** The port configured on the LDAP server (depended on **Use SSL (Secure Socket Layer)** check box)
- **Protocol version:** Choose the protocol of the LDAP server you have
- **Authentication type:** Select one used on the LDAP server you have
- **Login:** The username on the LDAP server with enough privileges to export user data.
- **Password:** The password for this LDAP username.
- **Use SSL (Secure Socket Layer):** Select this check box if you will use secured connection.

#### Default formatting:

- Default **Date**, **Time** and **Date/time** formats
- **Decimal separator:** the period or the comma character, used to separate units from tenths.
- **Decimal places:** the number of decimal places to be imported.

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Some examples of connection configurations:

- Connect to Apache AD via SSL

Name ldaps	Type LDAP		
<b>Configuration:</b>			
Server 10.33.14.102	Port 10636	Protocol version V3	Authentication type Basic
Login uid=admin, ou=system	Password *****	<input checked="" type="checkbox"/> Use SSL (Secure Socket Layer)	

- Connect to Apache AD without SSL

Name ldap8	Type LDAP		
<b>Configuration:</b>			
Server 10.33.14.102	Port 10389	Protocol version V3	Authentication type Basic
Login uid=admin, ou=system	Password *****	<input type="checkbox"/> Use SSL (Secure Socket Layer)	

- Connect to Microsoft AD via SSL

Name TestImport1	Type LDAP		
<b>Configuration:</b>			
Server TestDC.de	Port 636	Protocol version V3	Authentication type Basic
Login TESTDC\Administrator	Password *****	<input checked="" type="checkbox"/> Use SSL (Secure Socket Layer)	
<b>Default Formatting:</b>			
Date	Time	Date/Time	

Use Domain Name, not computer name

Use Domain Login

5. Click **Next**
  - Page 2 **Preview of sample data appears.**
6. Enter search parameters to query a LDAP directory if data should be filtered before import.
  - **Search Base:** The base DN (Distinguished Name) of the search, e.g. *ou=users,ou=system* or *DC=TestDC,DC=de*
  - **Filter:** Enter a valid LDAP search filter, e.g. *(objectClass=inetOrgPerson)* or *(&(objectClass=user)(displayName=\*))*



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Create Import Template

Search Base:  Filter: (ObjectClass=Persons) Refresh

activity	additionallastname	aristocray	arrivaldate	arrivalexpected	attendant	attendantid	authfrom	authuntil	centraloffice	city	cityofbirth	client
Visitor	Easy	ARISTOCRAY	04.12.2018	04.12.2018	Adviser	0013431E81D8C63A	13.12.2008 17.03	12.12.2028 22.03	Lqocawtoen	California	birth of place	FF00
PERSON	Cubanna	ARISTOCRAY	-	-	Adviser	-	13.12.2008 17.03	12.12.2028 22.03	Lqocawtoen	California	birth of place	FF00

Previous Next

7. Click **Next**

- Page 3 of the **Import Template** wizard appears, containing a mappings table

8. Select one of 2 modes for the LDAP import template, as described in detail below.

- **Delete if not in LDAP**
- **Delete by attribute value**

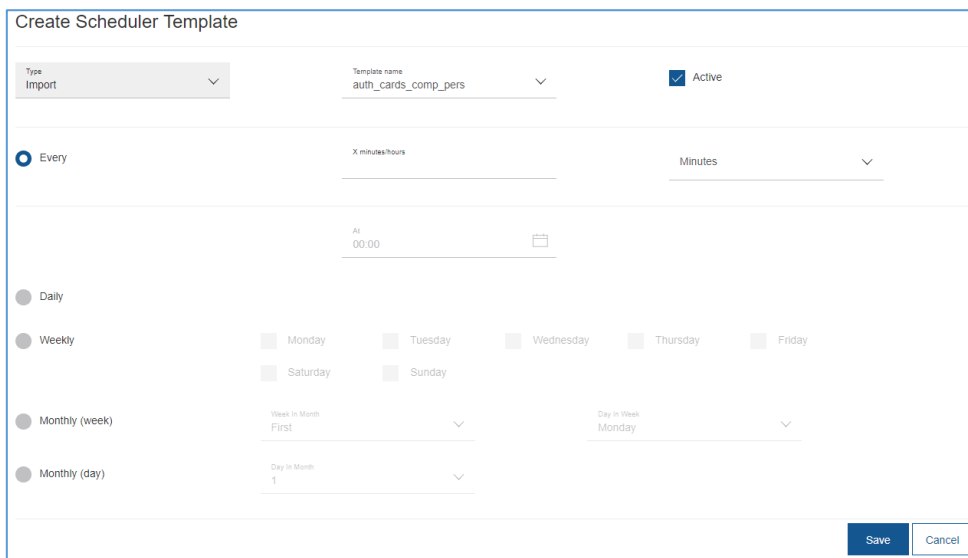
<p><b>Delete if not in LDAP</b></p>	<p>Selects all persons/visitors in the database that are no longer found in LDAP, but which had been previously imported from LDAP and deletes them. The deletion process is then as follows:</p> <ol style="list-style-type: none"> <li>Select all cards of an employee or visitor.                     <ol style="list-style-type: none"> <li>Delete the cards of the employee.</li> <li>Remove the assignments of the cards from the visitor.</li> </ol> </li> <li>Select all authorizations of the employee or visitor and remove them.</li> <li>Delete the employee or visitor record itself.</li> </ol>
<p><b>Delete by attribute value</b></p>	<p>Deletes persons/visitors if the specified attribute and its value are found in the record that is being imported. <b>Note:</b> If all data was deleted from LDAP server deletion from ACE system will not be performed. The task will be finished with 'Failed' state and an error message, for example: 'LDAP server '&lt;IP address of LDAP server&gt;:&lt;Port number&gt;' returned 0 entries'</p>

## 6 Creating a Schedule for import and export

The scheduler is a tool for executing imports and exports automatically at set times.

1. Click the **'Scheduler'** tab to see a list of schedules already created.
2. Click the pen icon to edit an existing schedule, or the **'+New'** button to create a new schedule.

The **'Create Scheduler Template'** dialog opens.



3. On the top of the form chose **'Type'** Import or Export  
Depending on your selection, the **'Template name'** list will contain import or export templates.
4. Pick the desired template from the **Template name** list.
  - a. In Case of import, specify quantity of rows to be skipped on every execution.

**Note:** If Import Template was created with 'Column names in first data row' enabled, then imports will always skip the 1st row.

5. Clear the **'Active'** check box until you have finished making your settings. This will prevent exports from execution until the schedule is ready. There are two kinds of schedule,
  - a. Interval based
  - b. Calendar based
6. Select **Every** and specify the number of minutes or hours for the interval or  
Select a time in HH:MM format use the calendar controls to define on which days or dates of the month the scheduler should activate.
 

**Note:** If a chosen date, for instance day 31, does not occur in the month, then the scheduler activates on the last day in the month.
7. Click the **'Save'** button to finish creating the schedule.





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8. Select the **Active** check box to activate the schedule.  
The import or export template selected under **Template name** will be executed at the defined interval, or at the defined time.  
**Note:** *It is not possible to create more than one schedule for same template.*

## 7 Editing templates and schedules

To edit a template, locate the template in a list and click the 'Edit' (pen) icon in the 'Action'.

Import Template List							+ New
Type	Name	Created By	Created On	Modified By	Modified On	Action	
All							
Csv	d	Pavlo	15.04.2019	Pavlo	15.04.2019	  	

### 7.1 Editing import templates for CSV data sources

The editing process of a template is almost identical to its creation except for the following points:

- **'Separator'** and **'Column names in first data row'** are disabled until a new sample file is selected.
- After a new sample file is selected, the 'Separator' and 'Column names in first data row' become editable. The previous sample file may be used, or a version with additional columns. Additional columns will cause additional empty mapping lines to appear on page 3 of the wizard. Any other changes will cause a reset of all mappings.
- Resets of mappings are accompanied by a popup warning.
- If **Destination** has changed, all previous mappings will be removed from page 3.
  - o Removed mappings are highlighted in red
  - o Added mappings are highlighted in green.
  - o Modified mappings are highlighted in orange

### 7.2 Editing export templates for CSV data sources

The editing process of a template is almost identical to its creation except for the following points:

- Resets of mappings are accompanied by a popup warning.
- If **Source** is changed, all mappings are removed on page 2.
- In addition:
  - o Added mappings are highlighted in green.
  - o Modified mappings are highlighted in orange.
  - o Deleted mappings are highlighted in red.



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### 7.3 Editing import templates for LDAP data sources

The editing process of the template is almost identical to its creation except for the following points on page 3:

- All mappings will be removed if '**Destination**' is changed. The user receives an appropriate warning beforehand.
  - o Added mappings are highlighted in green.
  - o Modified mappings are highlighted in orange.
  - o Deleted mappings are highlighted in red.

### 7.4 Editing export templates for LDAP data sources

The editing process of the template is almost identical to its creation except for the following points on page 2:

- All mappings will be removed if '**Source**' is changed. The user receives an appropriate warning beforehand.
  - o Added mappings are highlighted in green.
  - o Modified mappings are highlighted in orange.

### 7.5 Editing schedules

1. Click the **Scheduler** tab to display a list of schedules.
2. At the end of the row of the desired schedule, click the Edit (pen) icon.
3. Clear the **Active** check box, to prevent the schedule from being executed in the meantime.
4. Make the desired changes
5. Click the **Save** button to finish editing.
6. Select the **Active** check box to allow the execution of the schedule.

## 8 Deleting templates and schedules

#### Notes:

- If the template that you wish to delete is included in a schedule, then you must delete the schedule first, regardless of whether the schedule is active.
- You cannot delete a schedule if any of its tasks are **in progress** or **Pending**. Wait for the tasks to finish before deleting the schedule.

To delete an import template, an export template or a schedule:




1. Locate the template or schedule in the list on the first page of the respective tab (**Import**, **Export** or **Scheduler**).
2. Click the '**Delete**' (trash can) icon in the '**Action**' column.
3. Confirm or cancel the deletion in the popup warning message.

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Import Template List							+ New	
Type	Name	Created By	Created On	Modified By	Modified On	Action		
All								
Csv	d	Pavlo	15.04.2019	Pavlo	15.04.2019	  		

## 9 Execution of import/export tasks: The Agent

### 9.1 Execution of the import process

If a line in an input file refers to an entity that already exists in the access control database, then the import will update it. Otherwise the import will create a new database record.

Before every create/update operation, entities in the access control database are searched by the following fields:

- **Authorizations** will be checked by `SHORTNAME` property.
- **Companies** – by `COMPANYNO`.
- **Cards** – by `CARDNO` and `Customercode` (`CODEDATA`).
- **Persons and Visitors** – by unique identifiers provided by operator (see section 5.1.1 Unique identifier option mechanism)

**Note:** If Input file contains empty value for text type of properties such a property will be cleared on update import. This is actual only for text type of properties. Dates, Numbers and Boolean will not be cleared.

### 9.2 To execute an import or an export immediately

1. Locate the template in the list on the first page of the respective tab (**Import** or **Export**).
2. Click the **Import** or **Export** icon in the **Action** column.
3. Specify quantity of rows to be skipped on the execution

**Note:** If Import Template was created with 'Column names in first data row' enabled, than 1st row will be skipped during every import execution.

4. Confirm or cancel the execution in the popup message.
  - a. The **Agent Task List** is displayed.
  - b. The new import or export appears at the top of the list, with dates and times for **Created**, **Started** and **Completed**, and a **State** (one of Pending, In Progress, Succeeded, Failed).



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Type	Template Name	Data Type	Executed By	Created On	Started On	Completed On	State	Action
All		All					All	
Import	ldap_persons	Ldap	Scheduler	15.04.2019 17:10	15.04.2019 17:10	15.04.2019 17:10	Succeeded	

Operation has completed: 8 entities imported successfully, 0 entities failed to import, 0 entities deleted successfully, 0 entities failed to delete.

### 9.3 To evaluate an import or export in the Agent Task List

Records in the **Agent task list** are color-coded green, yellow or red, depending on whether they succeeded, partially succeeded or failed.

To evaluate an import or export task:

1. Click the **Agent** tab to display the **Agent Task List**
2. Locate the desired import or export in the list
  - Click the **+** icon in the first column to see details of how many records were processed successfully.
  - Click the **Download** (down arrow) icon in the **Action** column to view a CSV export file.
  - Click the logfile (LOG) icon to view the logfile.

The Agent tasks are backed up to the server. Use the Preferences tool on the **Agent** tab to delete tasks automatically that are older than a set number of days. See section 9.5 Using Agent Preferences.

### 9.4 Execution of scheduled import and exports

After a schedule has been created and set active it will be executed at the intervals defined.

From the **Scheduler Template List** there are 2 ways to execute imports from CSV (LDAP and exports will be executed automatically).

- A. Manually select the input file from the scheduler template list
- B. Use an external program to copy a new version of the input file to a special import folder before each scheduled import.

Method A.

1. Locate the scheduled import in the **Schedule Template List**
2. Click the Upload icon in the **Action** column
3. Specify quantity of rows to be skipped on the execution

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**Note:** If Import Template was created with 'Column names in first data row' enabled, than 1st row will be skipped during every import execution.

4. Use the file selector to select the desired input file.  
The input file that you select will be imported **once only**, at the date and time indicated in the **Next Start** column.

Scheduler Template List								+ New		
Type	Template Name	Data Type	Last Started	Last Completed	Next Start	Active	Action			
Import		All				All				
Import	companiesAll	Csv	15.04.2019 17:35	15.04.2019 17:35	15.04.2019 17:50	Yes				

Method B.

1. Copy the intended input file to the following folder on the IMPEX server:  
C:\inetpub\wwwroot\ImportExportWebApp\Content\files\import\

**Note:** Folder path can be changed in [Agent Preferences](#).

2. Ensure that the filename matches the name in the **Template Name** column. For instance, if the Template Name is `companiesAll`, then the input file must be named `companiesAll.csv`
3. The input file will be imported at the date and time indicated by the **Next Start** column, and then **repeatedly**, after the interval specified by the schedule.

Use a shell script or other external program to ensure that the input file is overwritten by a new version with the same name, in time for the next scheduled import. Otherwise the same data will be imported with every schedule cycle.

## 9.5 Using Agent Preferences

**Preferences** are settings that schedule the deletion of completed Agent tasks from the list, and store the credentials used for executing the tasks in the access control system.

1. Select the **Agent** tab
2. Click the '**Preferences**' (cog wheel) icon in the upper right of the Agent window.



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ACE Importer/Exporter

Import Export Scheduler Agent

Agent Task List

Type	Template Name	Data Type	Executed By	Created On	Started On	Completed On	State	Action
All		All					All	
+ Import	companiesAll	Csv	Scheduler	15.04.2019 17:20	15.04.2019 17:20	15.04.2019 17:20	Succeeded	
+ Import	d	Csv	Pavlo	15.04.2019 17:20	15.04.2019 17:20	15.04.2019 17:20	Partially Succeeded	
+ Import	ldap_persons_no_delete	Ldap	Scheduler	15.04.2019 17:16	15.04.2019 17:16	15.04.2019 17:16	Succeeded	

3. Set the following options in the ‘Preferences’ pop-up window:

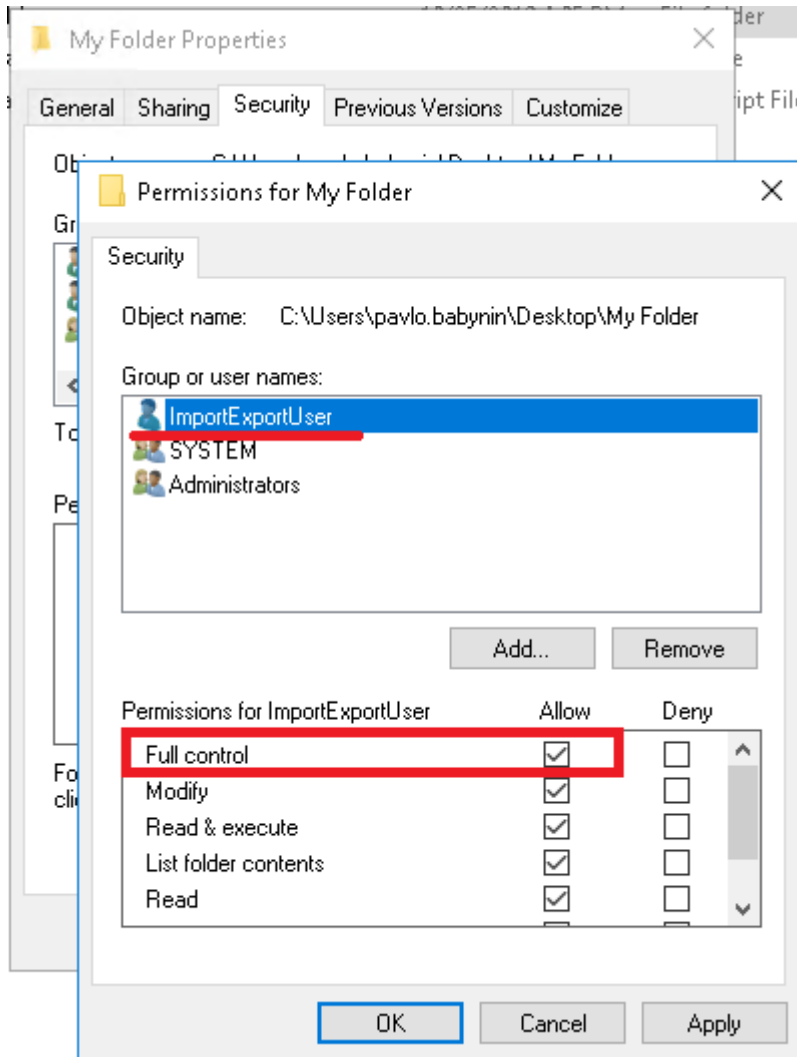
- Delete agent tasks older than X days**  
 This option defines the maximum age of the task in the list. Older tasks will be deleted automatically from the server, along with their input and log files.
- Agent credentials**  
 This option defines the operator account that will be used to execute import/export tasks, immediate or scheduled. By default first operator logged-on will be used.

**Note:** We recommended you have a dedicated operator/user in the BIS/AMS with a password that never expires.

**Important:** It is required to do an update of the credentials here, if operator account credentials were changed from other application (e.g. BIS client, Configuration browser, AMS, etc.). Otherwise all import tasks will fail as IMPEX will continue to use the old credentials.

**Note:** Only operators with unlimited API access can execute import tasks.

- Custom import/export directories**  
 Enables two additional inputs where it is possible to specify folders where on IMPEX Server should be stored result and log files of import/export tasks (C:\Program Files (x86)\Bosch Sicherheitssysteme\ImportExportACEWS\Import and C:\Program Files (x86)\Bosch Sicherheitssysteme\ImportExportACEWS\Export by default). In case of import, same folder will be searched for files to be imported by Scheduler. Only full paths can be used.  
 Before enabling the option, it is required to define folders on IMPEX Server and give IMPEX sufficient access rights to read/write data from the folders:  
*Right click on the folder > Properties > Security > Edit > Add Add ImportExportUser (a special user created by the installation). Allow Full control permissions as shown below:*



- Enable server logs (disabled by default)**  
 Enables server logs to be written and stored on IMPEX server:  
 IMPEX service logs - C:\Program Files (x86)\Bosch Sicherheitssysteme\ImportExportACEWS\logs  
 IMPEX website logs - C:\inetpub\wwwroot\ImportExportWebApp\logs
- Enable user logs (disabled by default)**  
 Enables user logs (available for downloading from UI Agent tab under each import/export task in Action column) to be written and stored on IMPEX server in the folder C:\Program Files (x86)\Bosch Sicherheitssysteme\ImportExportACEWS\ by default or folder specified in **Custom import/export directories**

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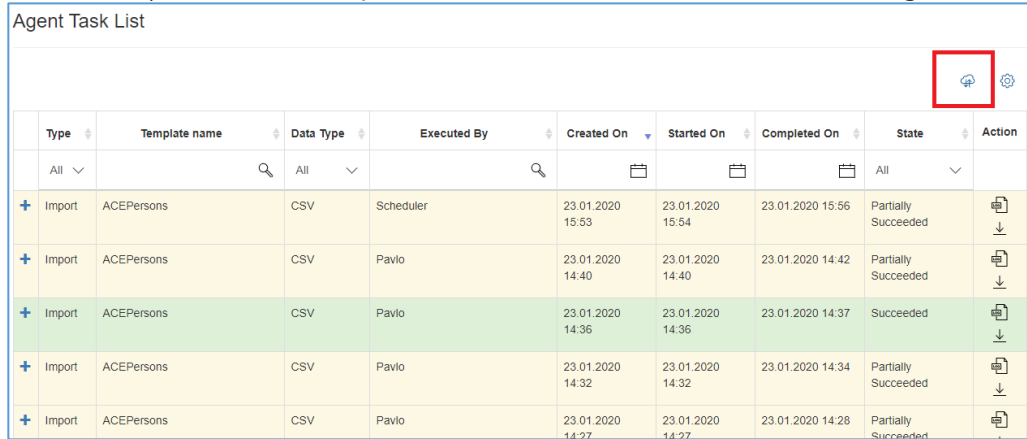
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## 9.6 Using Agent Backup/Restore

IMPEX configuration (Import Templates, Export Templates, Scheduler Templates and Preferences) can be backed up and restored via a dedicated menu on the **Agent** tab.

Agent Task List



Type	Template name	Data Type	Executed By	Created On	Started On	Completed On	State	Action
All		All					All	
+ Import	ACEPersons	CSV	Scheduler	23.01.2020 15:53	23.01.2020 15:54	23.01.2020 15:56	Partially Succeeded	
+ Import	ACEPersons	CSV	Pavlo	23.01.2020 14:40	23.01.2020 14:40	23.01.2020 14:42	Partially Succeeded	
+ Import	ACEPersons	CSV	Pavlo	23.01.2020 14:36	23.01.2020 14:36	23.01.2020 14:37	Succeeded	
+ Import	ACEPersons	CSV	Pavlo	23.01.2020 14:32	23.01.2020 14:32	23.01.2020 14:34	Partially Succeeded	
+ Import	ACEPersons	CSV	Pavlo	23.01.2020 14:27	23.01.2020 14:27	23.01.2020 14:28	Partially Succeeded	

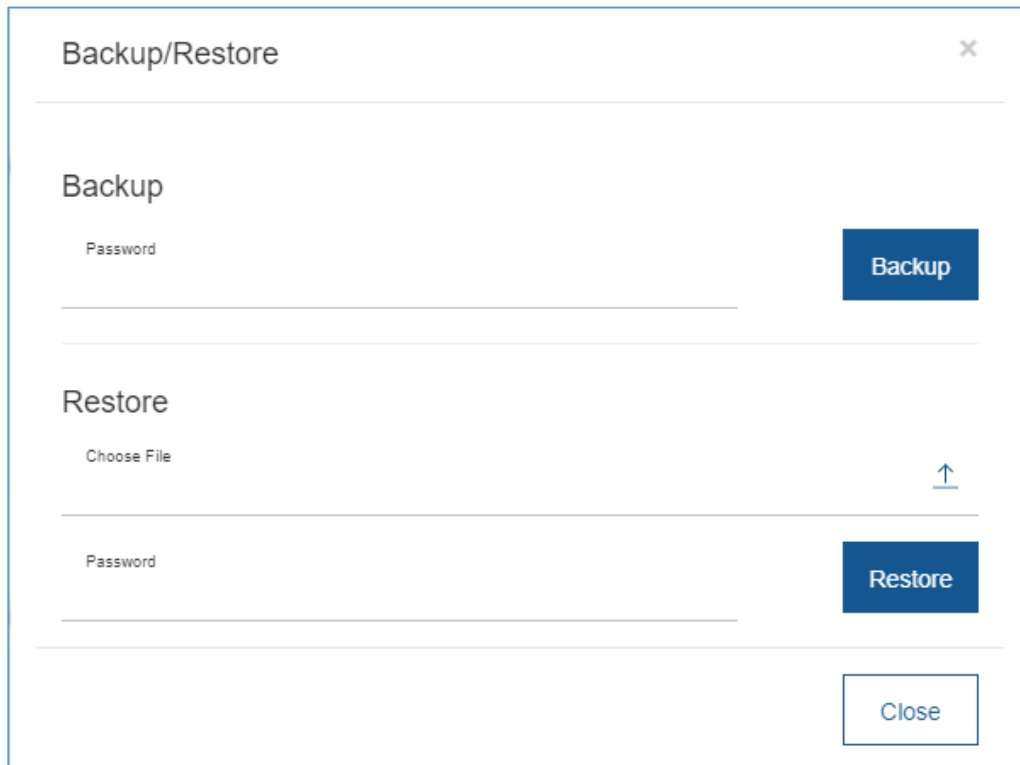
Click the 'Backup/Restore' (cloud) icon. A pop-up appears with options:

**Backup**

- Password

**Restore**

- Choose file
- Password



**Backup/Restore** ✕

---

**Backup**

Password **Backup**

---

**Restore**

Choose File

Password **Restore**

---

Close



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### Backup




This option provides ability to enter a password for the BAK file which will contain the IMPEX configuration. Then click the **'Backup'** button to initiate the backup process. After the process is finished, the password protected BAK file can be downloaded and saved.

### Restore

This option allows you to select the BAK file created with **Backup** option. After providing the password specified on the **Backup** option, and clicking on **'Restore'** button, the current configuration will be replaced with the configuration from the BAK file.

### Migrate old templates

This button is shown only if import and export templates (descriptions) are configured in old ImpEx. After click on the button, an Old Template list will be shown. To do migration of old templates select Destination (required) and scheduler (optional) for each of the templates to be migrated. Only templates with defined Destination will be included into migration process. Note that new ImpEx does not support multiple schedulers for one template. If migration is not possible or contains some warnings an old template will be marked with error/warning sign in the list. (Click on sign to see more details).

Old Template List						
	Destination	Name	Type	Scheduler Templates	Description	Date created
		Test	Export		Test	2018-10-04
The new system does not support custom date format "yyyy-mm-dd" for a standard rule. Configuration setting "Description" will be skipped Configuration setting "Overwrite (an existing export file with the current export)" will be skipped Configuration setting "File encoding" will be skipped						
	Persons(w. attached authorizations, cards, compa...	Test	Import	Testimport.txt	Test	2018-10-04
		pers with image	Import		pers with image	2020-04-09
						<input type="button" value="Cancel"/> <input type="button" value="Migrate"/>

Scheduler Template columns contains drop-downs with file names options, but this file names are used only for indication of Tasks configuration from Old ImpEx and not the file itself.

## 10 Examples

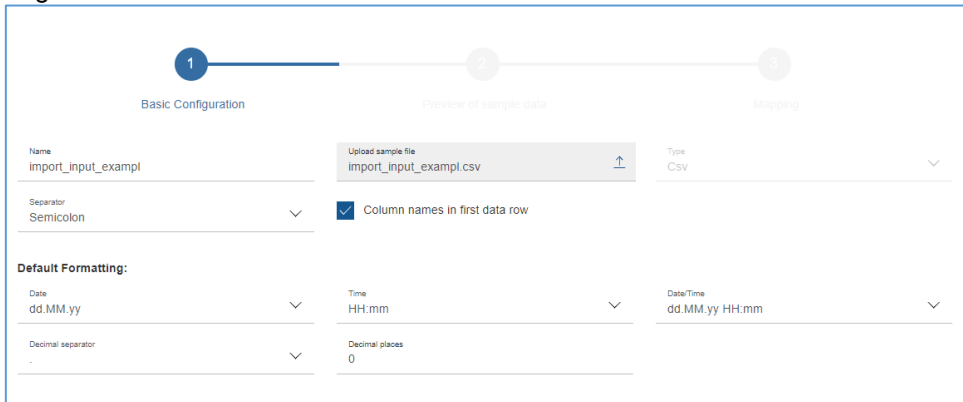
### 10.1 CSV import example

Using the example file **import\_input\_exempl.csv**, the following Import Template settings are defined for an import:



import\_input\_exempl.csv

Page 1:



**Basic Configuration**

Name: import\_input\_exempl

Upload sample file: import\_input\_exempl.csv

Type: Csv

Separator: Semicolon

Column names in first data row

**Default Formatting:**

Date: dd.MM.yy

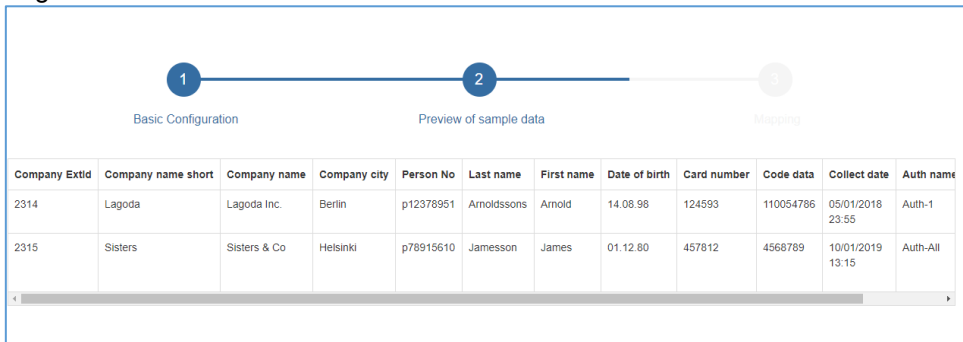
Time: HH:mm

Date/Time: dd.MM.yy HH:mm

Decimal separator: .

Decimal places: 0

Page 2:



**Preview of sample data**

Company Extid	Company name short	Company name	Company city	Person No	Last name	First name	Date of birth	Card number	Code data	Collect date	Auth name
2314	Lagoda	Lagoda Inc.	Berlin	p12378951	Arnoldssons	Arnold	14.08.98	124593	110054786	05/01/2018 23:55	Auth-1
2315	Sisters	Sisters & Co	Helsinki	p78915610	Jamesson	James	01.12.80	457812	4568789	10/01/2019 13:15	Auth-All

Page 3:

Destination = Persons(w. attached authorizations, cards, companies)

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Persons(w. attached authorizations, cards, companies)

● Add entities to ACE

Column	Column name in source	Destination	Type	Is Mandatory	Is Unique	Format	Rules	Remove
1	Company ExtId	Companies.ExternalId	String	<input type="checkbox"/>	<input type="checkbox"/>			
2	Company name short	Companies.COMPANYNO	String	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
3	Company name	Companies.NAME	String	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
4	Company city	Companies.CITY	String	<input type="checkbox"/>	<input type="checkbox"/>			
5	Person No	Persons.PERSNO	String	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
6	Last name	Persons.LASTNAME	String	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
7	First name	Persons.FIRSTNAME	String	<input type="checkbox"/>	<input type="checkbox"/>			
8	Date of birth	Persons.DATEOFBIRTH	ACEDateT	<input type="checkbox"/>	<input type="checkbox"/>			
9	Card number	Cards.CARDNO	String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
10	Code data	Cards.CODEDATA	String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
11	Collect date	Cards.COLLECT	DateTime	<input type="checkbox"/>	<input type="checkbox"/>			
12	Auth name	Authorizations.SHORTNAME	String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	dd/MM/yyyy HH:mm		
13	Auth desc	Authorizations.NAME	String	<input type="checkbox"/>	<input type="checkbox"/>			

Previous Cancel Save

The format of the **Date** column is overridden to match the input:

Add Format ✕

---

dd/MM/yyyy HH:mm ▼

---

Cancel
Save

After the import

- Task finishes with a success message.

Agent Task List

Type	Template Name	Data Type	Executed By	Created On	Started On	Completed On	State	Action
All		All					All	
Import	Import_input_exempl	Csv	Pavlo	10.06.2019 14:30	10.06.2019 14:30	10.06.2019 14:30	Succeeded	↓

Operation has completed: 8 entities imported successfully, 0 entities are failed, 0 rows skipped.



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- the Access control database contains the following entries:

COMPAN YNO	NAME	CITY	PERSNO	LASTNAME	FIRSTNAME	DATEOFBIRTH	CARDNO	CODEDATA	COLLECT	SHORTNAME	NAME
Lagoda	Lagoda Inc.	Berlin	p12378951	Arnoldssons	Arnold	19980814	00000012459 3	0x068F4D820001E6 B1	2018-01-05 19:55:00.000	Authz-1	Authorization number one
Sisters	Sisters & Co	Helsinki	p78915610	Jamesson	James	19801201	00000045781 2	0x0045B6D50006FC 54	2019-01-10 09:15:00.000	Authz-All	Authorization for administrator s

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## 10.2 Export Examples

### 10.2.1 CSV Export example

The following Export Template's settings defined for an export:

Page 1:

Create Export Template

---

1 ————— 2

Basic Configuration Mapping

Name import_input_exempl	Separator Semicolon	Type Csv
<input checked="" type="checkbox"/> Headers row presence		
<b>Default Formatting:</b>		
Date dd.MM.yy	Time HH:mm	Date/Time dd.MM.yy HH:mm
Decimal separator .	Decimal places 0	

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Page 2:

1 Basic Configuration | 2 Mapping | 3 Preview of sample data

+ Add Mapping

Source: Persons(w. attached authorizations, cards, companies) ▾

Column	Column name in source	Rules And Formatting	Combine	Remove
1	Companies COMPANYNO			
2	Companies NAME			
3	Companies CITY			
4	Persons PERSNO			
5	Persons LASTNAME			
6	Persons FIRSTNAME			
7	Persons DATEOFBIRTH			
8	Cards CARDNO			
9	Cards.Customercode			
10	Cards.COLLECT			
11	Authorizations.SHORTNAME			
12	Authorizations NAME			

The following database entries are available for the export:

COMPANYNO	NAME	CITY	PERSNO	LASTNAME	FIRSTNAME	DATEOFBIRTH	CARDNO	Customercode	COLLECT	SHORTNAME	NAME
Lagoda	Lagoda Inc.	Berlin	p12378951	Arnoldssons	Arnold	19980814	000000124593	0x068F4D820001E6B1	2018-01-05 19:55:00.000	Authz-1	Authorization number one
Sisters	Sisters & Co	Helsinki	p78915610	Jamesson	James	19801201	000000457812	0x0045B6D50006FC54	2019-01-10 09:15:00.000	Authz-All	Authorization for administrators

The Export generates a file that can be downloaded from the **Agent Task List** with the following contents:



import\_input\_exam  
pl.csv

```

File Edit Format View Help
COMPANYNO;NAME;CITY;PERSNO;LASTNAME;FIRSTNAME;DATEOFBIRTH;CARDNO;Customercode;COLLECT;SHORTNAME;NAME
Lagoda;Lagoda Inc.;Berlin;p12378951;Arnoldssons;Arnold;14.08.98;000000124593;110054786;05.01.18 23:55;Authz-1;Authorization number one
Sisters;Sisters & Co;Helsinki;p78915610;Jamesson;James;01.12.80;000000457812;4568789;10.01.19 13:15;Authz-All;Authorization for administrators
    
```

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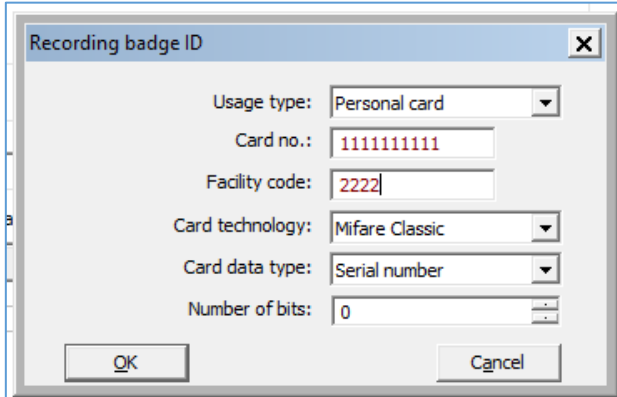
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### 10.2.2 Export Wiegand and Bosch serial number cards

1. Cards are created and linked to person via AMS or ACE dialog:

*Dialog (Wiegand)*



Recording badge ID

Usage type: Personal card

Card no.: 1111111111

Facility code: 2222

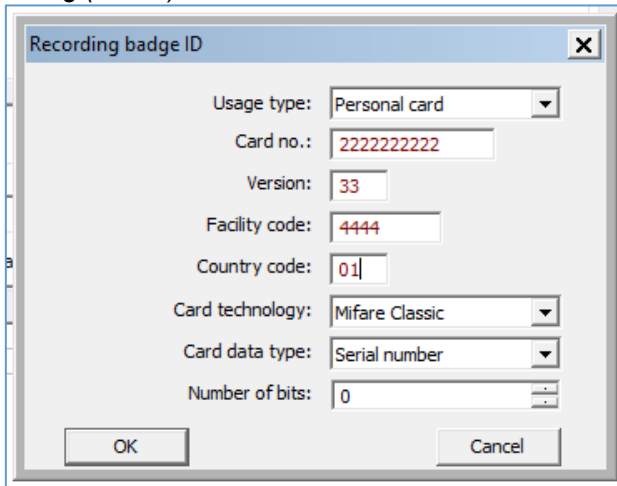
Card technology: Mifare Classic

Card data type: Serial number

Number of bits: 0

OK Cancel

*Dialog (Bosch)*



Recording badge ID

Usage type: Personal card

Card no.: 2222222222

Version: 33

Facility code: 4444

Country code: 01

Card technology: Mifare Classic

Card data type: Serial number

Number of bits: 0

OK Cancel

2. See section 10.2.1 CSV Export example for a template file defined for an export
3. The export generates a file that can be downloaded from Agent Task List. It will have the following contents:



export\_input\_exam  
pl (2).csv

```
File Edit Format View Help
COMPANYNO;NAME;CITY;PERSNO;LASTNAME;FIRSTNAME;DATEOFBIRTH;CARDNO;Customercode;COLLECT;SHORTNAME;NAME
Sisters;Sisters & Co;Helsinki;p78915610;Jamesson;James;01.12.80;001111111111;2222;;Authz-All;Authorization for administrators
Sisters;Sisters & Co;Helsinki;p78915610;Jamesson;James;01.12.80;002222222222;3301004444;;Authz-All;Authorization for administrators
```

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## 11 Possible usage examples

ImpEx tool provides an ability to do numerous operations with BIS/AMS system entities (Persons, Visitors, Companies, Cards and Authorizations). This chapter contains a description of available actions to be done with ImpEx.

### 1. Insert single entity in the system via CSV.

To insert single entity to the system you may perform a simple import of the CSV file containing a list of entities e.g. file with Companies only or Persons only or etc.

### 2. Update single entity in the system via CSV.

To do an update on the entities already inserted or existing in the system, an input file should contain the rows with values for unique fields used during inserts.

Before every update operation, entities in the access control database are searched by the following fields:

**Authorizations** will be checked by SHORTNAME property.

**Companies** – by COMPANYNO.

**Cards** – by CARDNO and Customercode (CODEDATA).

**Persons and Visitors** – by unique identifiers provided by operator (see section [5.1.1 Unique identifier option mechanism](#))

**Note:** If Input file contains empty value for text type of properties such a property will be cleared on update import. This is actual only for text type of properties. Dates, Numbers and Boolean will not be cleared.

### 3. Delete single entity in the system via CSV.

If there is a need to delete entries in the system then use the [Delete mode](#) for CSV templates.

**Note:** If input data contains cards, Visitor's or Person's, the cards will be deleted from the system without deleting a Visitor or a Person.

### 4. Insert related entities via CSV.

To insert related entities to the system an input file should have a row for each relation between the entities. E.g. to insert 1 Person with 2 cards the input file should have 2 rows:

```
Firstname;Lastname;Cardno;Customercode
```

```
Bob;Willson;1;123
```

```
Bob;Willson;2;124
```

### 5. Update related entities via CSV.

Similar to **Update single entity in the system via CSV** but unique values should be same as used for insert for each entity in the row.

**Note:** If input data contains visitor card with a Person in one line and the card is not in use, such a card will be removed from visitor's cards and assigned to the Person.



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**6. Delete related entities via CSV.**

Similar as for **Delete single entity in the system via CSV** but file should contain related entities. Deleting will be done in next sequence:

- 1) Select all cards of an employee or visitor.
- 2) Delete the cards of the employee.
- 3) Remove the assignments of the cards from the visitor.
- 4) Select all authorizations of the employee or visitor and remove them.
- 5) Delete the employee or visitor record itself.

**7. Insert Persons of Visitors from LDAP.**

Please refer to [Creating an import template for LDAP data](#) for more details on how to configure import from LDAP. During import from LDAP there is no need to configure unique properties as LDAP has distinguished name which is unique already.

**8. Update Persons or Visitors from LDAP.**

All previously imported entities from LDAP will be automatically updated in the Access system on each next import.

There is no backwards import from the Access system to the LDAP, so if e.g. Person was updated in AMS/BIS this change will not be reflected in the LDAP.

**9. Insert or Update Persons with Authorizations from LDAP**

To insert Persons from LDAP together with Authorizations it is required to configure a dedicated **Person type** in AMS/BIS with locked **Access profile** which has a set of Authorizations under it, and map dedicated attribute from LDAP to PERSCLASSID property.

E.g. in the AMS/BIS you have **Access profile** named "LDAP access profile" and a special **Person type** named "LDAP person" and this **Access profile** is locked with the **Person type**. Then on the LDAP you have an attribute which contains 'LDAP person' values. During creation of the LDAP import template map the attribute to PERSCLASSID property and execute the import. During the import IMPEX will search for **Person type** named "LDAP person" and will use it to create or update entries in the system, and as we have locked **Access profile** to the **Person type** all Authorizations connected to the **Access profile** will be automatically assigned to the Persons from LDAP.

**10. Delete Persons or Visitors from AMS/BIS if they does not present on LDAP.**

There are 2 modes for the LDAP import template, as described in detail below.

- **Delete if not in LDAP**
- **Delete by attribute value**

<b>Delete if not in LDAP</b>	<p>Selects all persons/visitors in the database that are no longer found in LDAP, but which had been previously imported from LDAP and deletes them.</p> <p>The deletion process is then as follows:</p> <ol style="list-style-type: none"> <li>1. Select all cards of an employee or visitor.             <ol style="list-style-type: none"> <li>a. Delete the cards of the employee.</li> <li>b. Remove the assignments of the cards from the visitor.</li> </ol> </li> </ol>
------------------------------	---



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	2. Select all authorizations of the employee or visitor and remove them. 3. Delete the employee or visitor record itself.
<b>Delete by attribute value</b>	Deletes persons/visitors if the specified attribute and its value are found in the record that is being imported. <b>Note:</b> If all data was deleted from LDAP server deletion from ACE system will not be performed. The task will be finished with 'Failed' state and an error message, for example: 'LDAP server '<IP address of LDAP server>:<Port number>' returned 0 entries'

**11. Migrate data from APE**

The process of migration data from APE is described in separate document 'Migration from APE to AMS User Guide.docx'

**12 Data field reference**

Entity	Property	Datatype	Dialog / (Tab) / Dialogfield Valid characters	Description / Remarks
Authorizations	SHORTNAME	String	Access Authorizations / Authorization name	Can be used to assign existing authorizations. But also it is possible to create new authorizations - note that there are no entrances included.
	MACID	String	Access Authorizations / MAC	Reference to Devices table (MAC type only) Unique Identifier from Devices table of type MAC is used as ID can be used. If nothing is provided then default instance 1 of type MAC is used.
	TMID	String		Reference to time models table
	CLIENTID	String		Optional, reference to clients (=divisions) table
	SPECIALFUNCTIONID	String		Reference to special functions table
	NAME	String	Access Authorizations / Description	Description provided for Authorization



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Cards	CARDNO	String	PersHdr / ID card no.	card number for a particular card, Combined with CODEDATA it should be unique
	CLIENTID	String		Optional, reference to clients (=divisions) table
	Customercode (CODEDATA)	String		Required field, accepts decimal values which will be converted to CODEDATA.
	CODELEN	Int16		Optional field, codelen
	CODELEN2	Int16		Optional field, codelen (codedata2)
	CODETYPE	ACECardType	Accepts one of next values, literal or numeric: ACE_CARDTYPE_UNKNOWN = 0 ACE_CARDTYPE_MIFARECLASSIC = 1 ACE_CARDTYPE_MIFAREDESFIRE = 2 ACE_CARDTYPE_LEGICPRIME = 3 ACE_CARDTYPE_LEGICADVANT = 4 ACE_CARDTYPE_ICCLASS = 5 ACE_CARDTYPE_HIDPROX = 6 ACE_CARDTYPE_EM = 7 ACE_CARDTYPE_HITAG = 8	Optional field, codetype.



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	CODEVAR	ACECardVariationT	Accepts one of next values, literal or numeric: ACE_CARDVARIATIONS_UNKNOWN = 0 ACE_CARDVARIATIONS_CSN = 1 ACE_CARDVARIATIONS_BOSCH = 2	Optional field, cardvariation.
	CODEVAR2	ACECardVariationT	Accepts one of next values, literal or numeric: ACE_CARDVARIATIONS_UNKNOWN = 0 ACE_CARDVARIATIONS_CSN = 1 ACE_CARDVARIATIONS_BOSCH = 2	Optional field, card variation (codedata2)
	COLLECT	DateTime		Optional field, timestamp of card collection date Date Time format must be defined.
	PERSID	String		NULL if it is a card for later visitors usage; in all other cases it references the Persons table.
	USAGETYPEID	String		Either Unique Identifier from CardUsageTypes is used as ID or Usage type name can be used. If nothing is provided then default value 1 usage type id is used.
Companies	ATTENDANT	String		n/a
	CITY	String	Companies / City	City of the company



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	COMPANYNO	String	Companies / Short name	Required and unique field. Represents company Short name in the access control system.
	COUNTRY	String		Country of the company
	EMAIL	String	Companies / E-mail	E-mail address
	FAX	String	Companies / Fax	Company's Fax number.
	HOMEPAGE	String	Companies / Webpage address	Company's webpage address
	MAILBOX	String	Companies / Post-office box	Company's Post-Office box
	MOBILEPHONE	String	Companies / Mobile	Company's Mobile phone number
	NAME	String	Companies / Name	Represents company Name in the access control system. COMPANYNO will be used if this is not present in the template.
	PHONE	String	Companies / Phone	Company's phone number
	REMARKS	String	Companies / Remarks	Company's remark
	STATE	String		The geographical state where the company' is located.
	STREETHOUSENO	String	Companies / Street	Company's Street
	STREETHOUSENOEXT	String		Company's Address line #2
	ZIPCODE	String	Companies / Zip code	Company's Zip code
Persons	ExternalId	String		This property is not written to ACE system but used for linking entries in input file that refer to the same object.
	ADDITIONALLASTNAME	String	PersHdr / Birth name	Birth name
	ATTENDANT	String	Persons / (Additional Company Data) / Adviser	
	AUTHFROM	DateTime	Cards / Authorizations /	Date Time format must be defined.



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			Authorization / Valid from	
	AUTHUNTIL	DateTime	Cards / Authorizations / Authorization / until	Date Time format must be defined.
	CENTRALOFFICE	String	Persons / (Additional Company Data) / Location	
	CITY	String	Persons / (Address) / City	
	CITYOFBIRTH	String	Persons / (Additional Person Data) / Birthplace	
	CLIENTID	String		Client ID from Clients table, to which Division this person belongs.
	COMPANYID	String		Company ID from Companies table, to which company this person refers to. It is possible, that this data field is missing in the list. With the entries for Company.Name and Company.Shortname the company name is displayed.
	COSTCENTRE	String	Persons / (Additional Company Data) / Cost unit	
	COUNTRY	String	Persons / (Address) / Country, State	
	DATEOFBIRTH	ACEDateT	PersHdr / Date of birth	Date format must be defined.
	DEPARTMENT	String	Persons / (Additional Company Data) / Department	



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EMAIL	String	Persons / (Contact) / e-mail	
EXTOPENTIME	ACEBoolT	TRUE=1 FALSE=0	
FAXOFFICE	String	Persons / (Contact) / Fax business	
FAXPRIVATE	String	Persons / (Contact) / Fax home	
FIRSTNAME	String	PersHdr / First name	
GLOBALYADMINISTERED	ACEBoolT	PersHdr / Administrated globaly TRUE=1 FALSE=0	
GRADE	String	PersHdr / Title	
HEIGHT	Int32	Persons / (Additional Person Data) / Size	
Image	String		Special property to do import of the Person's ID photo. Should contain a path to image file.
IDENTIFICATIONMODE	ACEPersonIdentModeT	ACE_IDENTMODE_UNKNOWN = 0 ACE_IDENTMODE_FINGER = 1 ACE_IDENTMODE_CARD = 2 ACE_IDENTMODE_FINGERANDCARD = 3	
IDNUMBER	String	Persons / (Additional Person Data) /	





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			Identification No	
IDTYPE	String		Persons / (Additional Person Data) / Official pass	
IDVALIDUNTIL	ACEDateT		Persons / (Additional Person Data) / Valid until	Date format must be defined.
JOB	String		Persons / (Additional Company Data) / Job title	
LASTNAME	String		PersHdr / Last name	= required
MAIDENNAME	String		Persons / (Additional Person Data) / Father's name	
MARITALSTATUS	ACEMaritalStateT		Persons / (Additional Person Data) / Marital status UNMARRIED = 0 MARRIED = 1 WIDOWED = 2 DIVORCED = 3 MARITALSTATUS_UNDEFINED = -1	
NATIONALITY	String		Persons / (Contact) / Nationality	
NUMBERPLATE	String		PersHdr / Car license no.	
PERMOPEN	ACEBoolT		TRUE=1 FALSE=0	
PERSCLASSID	String		Employee ID	PersClassId should be provided, it has to be the identifier from PersClasses



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PERSNO	String	PersHdr / Personnel no.	
PHONEMOBILE	String	Persons / (Contact) / Mobile	
PHONEOFFICE	String	Persons / (Contact) / Phone business	
PHONEOTHER	String	Persons / (Contact) / Phone	
PHONEPRIVATE	String	Persons / (Contact) / Phone home	
REASONSTAY	String	Persons / (Additional Company Data) / Residence reason	
REMARK	String	Persons / (Remarks) / Remarks	
REMOTECTRL1	ACEBoolT	TRUE=1 FALSE=0	
REMOTECTRL2	ACEBoolT	TRUE=1 FALSE=0	
SEX	ACESexT	PersHdr / Gender SEX_MALE = 0 SEX_FEMALE = 1 SEX_UNDEFINE D = -1	
STREETHOUSENO	String	Persons / (Address) / Street, No	
VIP	ACEBoolT	TRUE=1 FALSE=0	
WEBPAGEURL	String	Persons / (Contact) / Homepage	



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	ZIPCODE	String	Persons / (Address) / ZIP	
Visitors	Externalld	String		Dummy property which will not be written to ACE system but used for identifying entries in input file.
	ADDITIONALLASTNAME	String	VisitorHdr / Birth name	
	ARRIVALDATE	DateTime	Visitor / (Additional data) / Date of arrival	Date Time format must be defined.
	ARRIVALEXPECTED	DateTime	Visitor / (Additional data) / Expected arrival	Date Time format must be defined.
	ATTENDANT	String		
	ATTENDANTID	String	Visitor / (Additional data) / Attendant	Identifier of the Person who is the attendant.
	AUTHFROM	DateTime	Visitor / (Authorizations) / Authorization / Valid from	Date Time format must be defined.
	AUTHUNTIL	DateTime	Visitor / (Authorizations) / Authorization / until	Date Time format must be defined.
	CENTRALOFFICE	String		
	CITY	String	VisitorHdr / City	
	CITYOFBIRTH	String		
	CLIENTID	String		
	COMPANYID	String	VisitorHdr / Company	Company ID from Companies table, to which company this visitor refers to.  It is possible, that this data field is missing in the list.  With the entries for Company.Name and Company.Shortname the company name is displayed.
	COUNTRY	String		



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DATEOFBIRTH	ACEDateT	VisitorHdr / Date of birth	Date format must be defined.
DEPARTDATE	DateTime	Visitor / (Additional data) /Date of departure	Date Time format must be defined.
DEPARTEXPECTED	DateTime	Visitor / (Additional data) /Expected departure	Date Time format must be defined.
DEPARTMATTEND	String		
DEPARTMENT	String		
EMAIL	String		
FAXOFFICE	String		
FAXPRIVATE	String		
FIRSTNAME	String	VisitorHdr / First name	
GLOBALLYADMINISTERED	ACEBoolT	TRUE=1 FALSE=0	
GRADE	String		
HEIGHT	Int32		
Image	String		Special property to do import of the Visitor's photos. Should contain a path to image file.
IDENTIFICATIONMODE	ACEPersonIdentModeT	ACE_IDENTMODE_UNKNOWN = 0 ACE_IDENTMODE_FINGER = 1 ACE_IDENTMODE_CARD = 2 ACE_IDENTMODE_FINGERANDCARD = 3	
IDENTIFIEDBY	ACEVisitorIdentifyT	VisitorHdr / Official pass ACE_IDENTIFY_TYPE_PASSPORT = 0 ACE_IDENTIFY_	



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			TYPE_DRIVING_LICENCE = 1 ACE_IDENTIFY_TYPE_ID_CARD = 2 ACE_IDENTIFY_TYPE_OTHER = 3 ACE_IDENTIFY_TYPE_UNKNOW N = -1	
IDENTPAPER	String	VisitorHdr / Official pass / Other		It is valid only if the Visitor.IDENTIFIEDBY is 3.
IDNUMBER	String			
IDTYPE	String			
IDVALIDUNTIL	ACEDateT			Date format must be defined.
JOB	String			
LASTNAME	String	VisitorHdr / Last name		required
LOCATION	String	Visitor / (Additional data) / Location		
MAIDENNAME	String			
MARITALSTATUS	ACEMaritalStateT	UNMARRIED = 0 MARRIED = 1 WIDOWED = 2 DIVORCED = 3 MARITALSTATUS_UNDEFINED = -1		
NATIONALITY	String			
NUMBERPLATE	String	VisitorHdr / Car license No.		
PASSPORTNO	String	VisitorHdr / Official pass / Number		
PHONEMOBILE	String			
PHONEOFFICE	String			



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PHONEOTHER	String		
PHONEPRIVATE	String	VisitorHdr / Phone	
REASON	String	Visitor / (Additional data) / Reason	
REASONSTAY	String		
REMARKS	String	Visitor / (Additional data) / Remark	
SEX	ACESexT	SEX_MALE = 0 SEX_FEMALE = 1 SEX_UNDEFINE D = -1	
STREETHOUSENO	String	VisitorHdr / Street, no	
WEBPAGEURL	String		
ZIPCODE	String	VisitorHdr / Zip code	

## 13 Troubleshooting

Before troubleshooting, please be sure that User and Server (see [9.5 Using Agent Preferences](#) for more details) and AMS/BIS API logs are enabled. If AMS/BIS logs are enabled usually they are stored under

C:\Users\ImportExportUser\AppData\Local\Temp

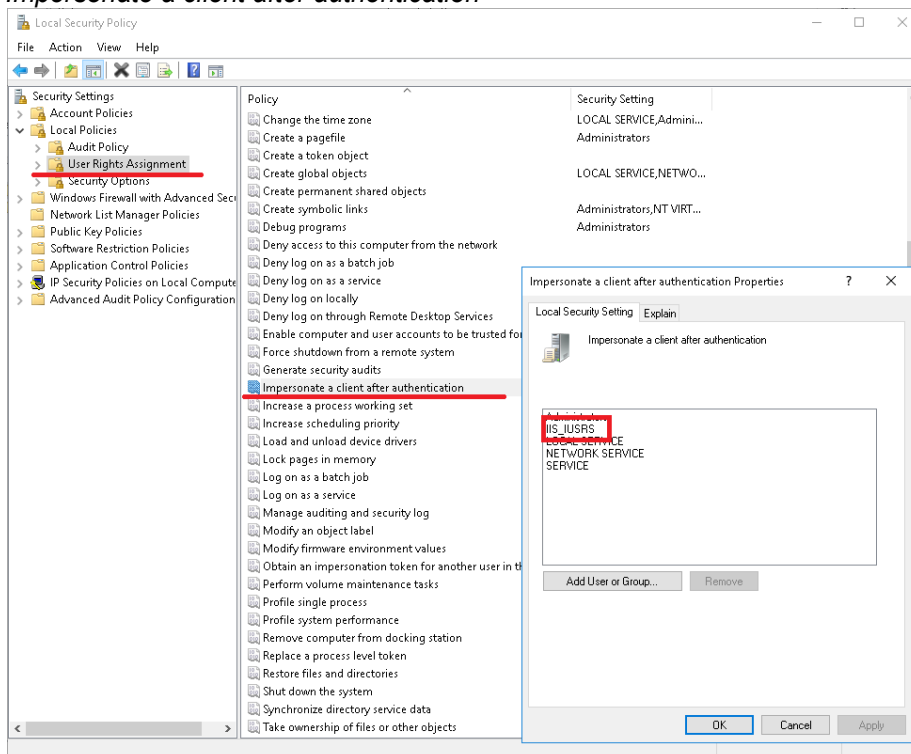
### 13.1 Installation failed

Check installation logs, usually located at system path %temp%

### 13.2 Pictures and icons are not displayed

Verify if user's group IIS\_USRS is added into Local Security Policy:

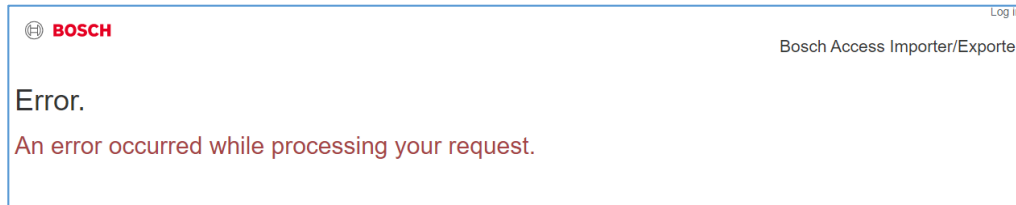
*Start > Local Security Policy > Local Policies > User Rights Assignment > Impersonate a client after authentication*



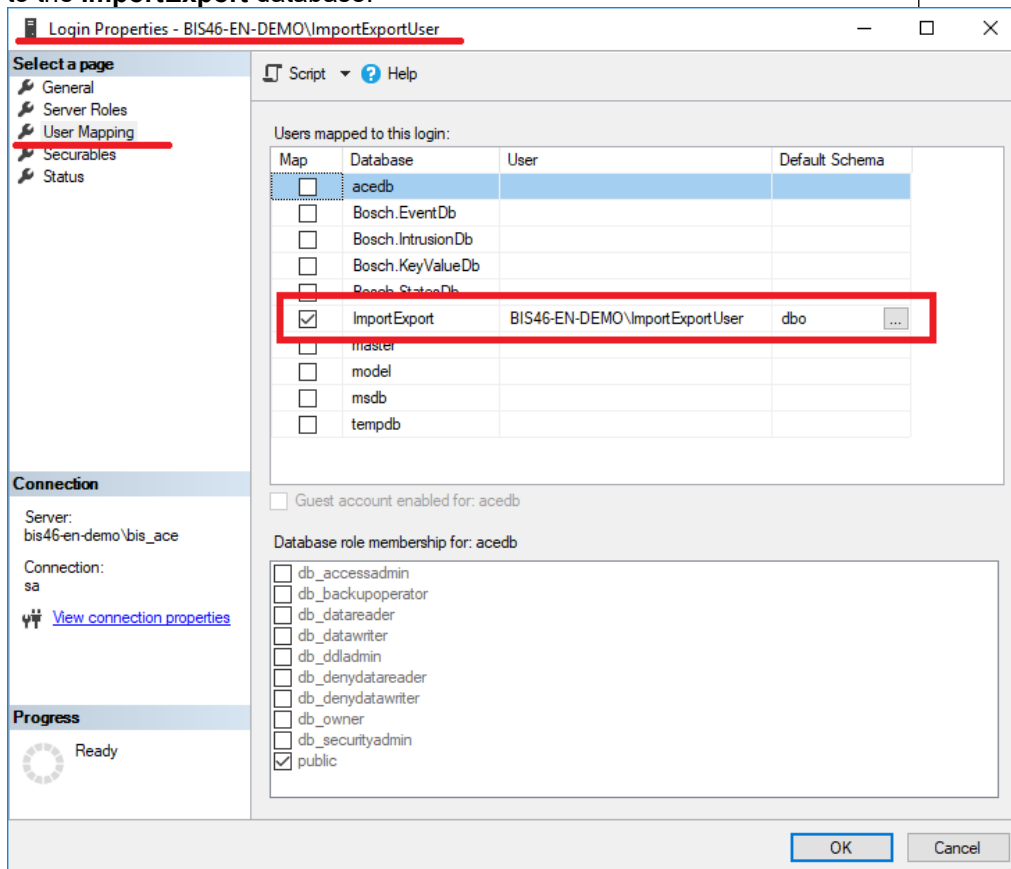
### 13.3 There is no Certificate file on IMPEX server

- Go to IMPEX installation folder
- Execute PowerShell script 'CreateCertificates.ps1' as Administrator

### 13.4 An error occurred while processing your request



- Please check if connection between IMPEX server and SQL server is valid.
- Verify if ImportExportUser has the same password on both SQL and IMPEX servers and is in Administrators group (refer [Setting up a remote SQL server database for IMPEX](#) to for more details).
- Verify that ImportExportUser is added to SQL users and that it is mapped to the **ImportExport** database.



- Restart ACE\_ImportExport\_Pool on IMPEX server  
**Start > Internet Information Services (IIS) Manager > Application Pools > ACE\_ImportExport\_Pool > Restart**