



**Corporate Auto-client.  
User Manual**

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## Foreword

This document is a detailed guide for using the **Corporate Auto-client** additional module of the PRAVEXBANK BIZ electronic banking system.

The **General Description** section includes the information about the main features and purpose of the module.

The **Installation and Module Setup** section describes the installation procedure for the **Corporate Auto-client** module.

The **Current Work** section contains a description of the actions during importing and signing of documents, as well as during exporting statements of account.

The **Module operation logging** section describes the principles and setup of module operation logging.

The **Application. The Module's files purpose** section gives the structure of the **Corporate Auto-client** module directories, as well as the purpose of all files.

## 1. General description

The **Corporate Auto-client** module of the PRAVEXBANK BIZ system is designed to serve large corporate clients with a very large document flow. The main purpose of the module is to completely exclude the participation of the client in the process of signing and sending documents to the bank, receiving statements of accounts. The module allows to provide the tight integration of the corporate client's accounting program with the PRAVEXBANK BIZ banking server, taking into account all individual features of the client's work.

The Corporate Auto-client module is a separate application that the client installs and configures itself. The module does not contain a graphical interface, runs from the command line and communicates with the PRAVEXBANK BIZ bank server according to the individual script described in BeanShell script language. The work with this module implies two basic work scenarios:

1. Import of hryvnia payment orders into PRAVEXBANK BIZ system and their signature with client's EDS keys. The module works in a common document space with other modules of PRAVEXBANK BIZ system. It means that the documents downloaded and signed with the help of the **Corporate Auto-client** module are available for work in other modules of the PRAVEXBANK BIZ system (for example in **Internet Banking**).
2. Receipt of account statements from the bank for their further uploading to the accounting program.

The Corporate Auto-client module supports the ability to work with several corporate clients using one installed version of the module.

## 2. Module Installation and Setup

### Warning!

In order to work with the Corporate Auto-client module, it is necessary to have the installed virtual Java-machine, JRE version 1.8 or higher.

Installation and configuration of the PRAVEXBANK BIZ Corporate Auto-client module is performed by the following operations:

### Step 1: Getting and unpacking the module distribution package

In order to install the Corporate **Auto-client module**, the client needs to get the distribution of the module, which is the **auto-client.zip** file. You can get the distribution from the web site of the servicing bank. If the module distribution is not available, you should contact the technical support department of the servicing bank.

After receiving the module's distribution package, you need to create a directory on your hard disk where the module will be unpacked, e.g. **.autoclient**. Using any of the available archiver programs, you should extract the **auto-client.zip file** into a newly created directory.

Further in the document the path to this directory will be indicated by %autoclient\_home%.

As a result, the following directory structure will be formed:

№	Catalog	Contents
1.	bin	Command scripts for starting the module or setting environment variables
2.	conf	Module configuration files
3.	doc	Documentation on work with the module
4.	lib	Files of the libraries required to run the module
5.	src	Configuration scripts describing the different modes of operation of the module

For a detailed description of the files in each of the directories, see the **Application. Assignment of module files** section.

### Step 2. Setting up environment variables.

For the module to work under Windows, you should configure the environment variables by editing the setEnvironment.bat file in the %autoclient\_home%\bin subdirectory:

- define the **JAVA** parameter as the full path to the executable file of the installed virtual Java machine, for example:

```
JAVA=C:\Program Files\re7inava.exe
```

- define **IBANK\_HOME** parameter as the path to the %autoclient\_home% directory, for example:

```
IBANK_HOME=C:\autoclient
```

- If necessary, you can change the logging settings file in **LOG\_CONF**. No changes need to be made by default.

For the module to work under Unix OS, you should configure the environment variables by editing the file setEnvironment.sh in the subdirectory %autoclient\_home%\bin:

- define the **JRE\_HOME** parameter as the path to the directory of the installed virtual Java-machines, for example:

```
JRE_HOME=/usr/lib/java/jre
```

- define the **JAVA** parameter as the path to the executable file of the installed virtual Java-machine, for example:

```
JAVA=$JRE_HOME/bin/java
```

- define **IBANK\_HOME** parameter as the path to the %autoclient\_home% directory, for example:

```
IBANK_HOME=/opt/local/autoclient
```

- the log settings file are changed by editing the **LOG\_CONF** parameter in the import.sh files (for details, see **Import and Signing of Hryvnia Payment Orders** subsection) and export.sh (for details, see **Export of Customer Account Statements** subsection).

### Step 3. Creating client directories

A subdirectory must be created in an arbitrary directory (e.g. %autoclient\_home%). In the newly created catalogue for each corporate client of the PRAVEXBANK BIZ system that will work with the current module version, create directory {**client\_name**}. The client name can be either the name of the client in the PRAVEXBANK BIZ system, or the shortened name of the client (in this case, you need to enable "mapping", see **Step 5. Editing the emulator.xml configuration file** subsection).

Each client directory must contain the following subdirectories:

- **IN** – directory intended for importing client's documents files;
- **OUT** – directory intended for uploaded client's account statements;
- **KEYS** – directory with client's personal settings. It should include client's EDS key storage files and client.xml configuration file.

### Warning!

After unpacking the auto-client.zip module distribution, the client.xml configuration file is placed in the conf directory of the auto-client module. When creating directories of registered clients of the PRAVEXBANK BIZ system, you need to move the client.xml file to the KEYS subdirectory, and then make changes to it according to this client (for more details see **Step 4. Editing the client.xml configuration file**). In the same subdirectory, it is necessary to place files with EDS keys of clients. This

procedure is performed for each client of the PRAVEXBANK BIZ system that will work in the current instance of the **Corporate Auto-client** module.

#### Step 4: Editing the client.xml configuration file

For each client of the PRAVEXBANK BIZ system that will work in the module it is necessary to adjust the client.xml configuration file (located in the **KEYS** subdirectory of the client's directory).

Adjustment is performed in the keystore block as follows:

- define the **file** parameter as the client's EDS key storage file name;
- define the **clientKeyAlias** parameter as the name of the client's EDS key in the key storage file;
- if necessary, you can define the **clientKeyPassword** parameter as a password for the client's EDS key. If the variable is not specified, you will need to enter the password manually after launching the module in the console.

If it is necessary to use several client's EDS keys, the keystore block with the correspondingly adjusted settings **file**, **clientKeyAlias** and **clientKeyPassword** should be added to the client.xml **file** for each of them.

For example:

```
<client>
  < keystore
    file="director.dat"
    clientKeyAlias="Director"
    clientKeyPassword=""
  />
  < keystore
    file="buhgalter.dat"
    clientKeyAlias="Accountant"
    clientKeyPassword=""
  />
</client>
```

#### Step 5: Editing the emulator.xml configuration file

In the configuration file emulator.xml from the subdirectory %autoclient\_home%\conf, the following changes should be made:

- if necessary, you can define the **system** parameter as the version of the PRAVEXBANK BIZ system used. No changes need to be made by default;
- define the **host** parameter as IP address or domain name of the PRAVEXBANK BIZ bank server (for this information contact the technical support department of the servicing bank);
- define the **port** parameter as the number of the port by which the client interacts with the PRAVEXBANK BIZ system bank server (for this information please contact the technical support department of the servicing bank);
- if necessary, you can define the parameter **root** as a relative path to the module. No changes need to be made by default;
- if necessary, you can define the **key** parameter as the name of the public key file of the PRAVEXBANK BIZ system bank server. By default, this file is in the module distribution. When

changing it, the file is provided to the client by the bank and must be placed in the %autoclient\_home%\conf subdirectory. No changes need to be made by default;

- define the **path** parameter as the path to a directory that contains all client directories (for more details see **Step 3. Creating client directories**).
- define the **mapping** parameter as "true" (mapping is switched on) or "false" (mapping is switched off) (for more details see **Step 6. Creating links to client working directories**).

If the client uses a proxy server to connect to the Internet, the following parameters must be added to the transport block:

- **proxyHost** is a proxy server address;
- **proxyPort** – the port number of the proxy server;
- **proxyUser** – the user's name if the proxy server requires authentication;
- **proxyPassword** – the user password if the proxy server requires authentication.

### Step 6: Creating links to client working directories

When "mapping" is switched on (the value of the variable **mapping="true"** of the file emulator.xml), it is necessary to additionally form links to the clients' working directories. In order to do this, in the %autoclient\_home%\conf subdirectory, you should edit the file mapping.txt, specifying the data in the format alias=client\_name (where alias is the symbolic name of the client; client\_name is the name of the client's directory, for more details see **Step 3. Creating client directories**), for example:

```
company1=InvestUA  
company2=SP Ignashevich
```

If the mapping is switched off, this step is not performed.

## 3. Current work

In order to work in the **Corporate Auto-client** module, all clients must register in the PRAVEXBANK BIZ system. The registration process is described in **Internet-Banking for corporate clients. Registration in PRAVEXBANK BIZ and PC-Banking system for corporate clients. Registration in PRAVEXBANK BIZ** documentation in more detail.

The **Corporate Auto-client** module is implemented as two components: the component of importing and signing the documents, as well as the component of uploading customer statements.

### Warning!

For correct work of the module under Unix OS, it is necessary to perform the following actions:

- Save all files in the Windows-1251 encoding in the subdirectories %autoclient\_home%\conf, %autoclient\_home%\src, as well as in a directory that contains all client directories (for more details see **Step 3. Creating client directories**).
- Change the locale to Windows-1251 in the terminal settings (Select **Menu** → **Terminal** → **Set character encoding** → **Cyrillic (WINDOWS-1251)**).

### Import and signature of hryvnia payment orders

The **Corporate Auto-client** module allows you to import documents of one or all clients whose directories have been created (for more details see **Step 3. Creating client directories**). Before starting

the import procedure, the documents, that will be imported into the PRAVEXBANK BIZ system and placed in the **IN** folder of the client's directory, must be prepared. The documents should be saved in text files in iBank 2 format (detailed description of the import file of the hryvnia payment order in iBank 2 format is presented in the documentation **Formats of data import and export in PRAVEXBANK BIZ system. Technical description**).

Running of the component, that imports and signs documents, produces the executable file import.bat (Windows OS) or import.sh (Unix OS). These files are located in the %autoclient\_home%\bin subdirectory.

Before starting a command file, you can specify a client from the directory of which it will be imported. In order to do this, the value of the **NAME** parameter must be defined in the import.bat(sh) file. If "mapping" is switched on (for more details see **Step 5. Editing the emulator.xml configuration file**), you should specify the **alias** of the client from the mapping.txt file (for more details see **Step 6. Creating links to client working directories**). When "mapping" is switched off, the **NAME** parameter specifies the name of the client that exactly matches the name of the corresponding client directory.

If the **NAME** value is not specified (left blank), the import will be performed for all clients that work with the current version of the module.

For the above example, when importing "InvestUA" client documents, in the file import.bat(sh) should be specified:

- if "mapping" is switched on, then:

```
set NAME=company1
```

- if "mapping" is switched off, then:

```
set NAME=InvestUA
```

#### **Warning!**

When working with a module under Windows, the value must be specified in double quotes in order to correctly specify alias or the name of the client containing spaces. For the above example, when importing the client's documents "Ignashevich PN", you should specify the following in the file import.bat:

```
set NAME="Ignashevich emergency"
```

#### **Warning!**

If, when working with a module under Windows, you do not import documents, if in the file import.bat you specify alias or client names that contain Cyrillic characters, you should edit the file import.bat as follows:

- Before the set NAME line add the line **chcp 1251**.
- After the set NAME line, add the line **chcp 866**.

For the above example, when importing the client's documents "Ignashevich PN", you should specify the following in the file import.bat:

```
chcp 1251
set NAME="Ignashevich emergency"
chcp 866
```

When a Unix module is running, you can change the logging settings file as needed by changing the **LOG\_CONF** parameter in the import.sh file. No changes are required by default.

Interaction with the user is performed at the command line in the text mode.

The processing of documents is performed consistently for each client. The procedure for processing each client's documents is as follows:

1. If the client.xml file does not specify the value of the clientKeyPassword parameter (for more details see Step 4. Editing the client.xml configuration file for details), you must enter the password to access the client's EDS key storage.
2. Documents are imported into the PRAVEXBANK BIZ system. The following information is displayed for each document:

- If the document was successfully imported, then:  
Saved document DD.MM.YYYY No. {document\_number}, {amount}, {recipient}.

As a result, successfully imported documents are saved in the PRAVEXBANK BIZ system as **New**.

- If there were errors during the import, then:  
Error loading document number {document\_number}

You can view the cause of the error in the module's operation log (for more details, see the **Logging of module operation** section).

3. If you have successfully imported documents, you will be prompted:  
Should the saved documents be signed?

If the answer to the request is positive (the **Y** key is pressed), signing of the document is executed. If EDS keys are used for signing, for which the values of clientKeyPassword parameter are not specified in client.xml file, it will be necessary to enter the password for each of them. The following information is displayed after all documents have been signed:

The documents are signed

As a result, imported documents become **Signed** (if the documents are not signed with all necessary signatures) or **Delivered** (if the documents are signed with all necessary signatures).

If the answer to the request is negative (the **N** key is pressed), the imported documents remain in the **New** status.

### Exports of customer statements

The **Corporate Auto-client** module allows you to export statements of one or all clients whose directories have been created (see **Step 3. Creating client directories**).

Running the component that exports client statements produces an executable file export.bat (Windows OS) or export.sh (Unix OS). These files are located in the %autoclient\_home%\bin subdirectory.

Before starting a command file, you can specify the client for which you want to export statements. In order to do this, you should define the **NAME** parameter value in the export.bat(sh) file. If "mapping" is switched on (for more details see **Step 5. Editing the emulator.xml configuration file**), then it is necessary to specify client **alias** from mapping.txt file (for more details see **Step 6. Creating links to client working directories**). When "mapping" is switched off, the **NAME** parameter specifies the name of the client that exactly matches the name of the corresponding client directory. If you do not specify **NAME** (leave it blank), the export of statements will be performed for all clients that work with the current version of the module.

For the above example, when exporting the client's account statements "InvestUA", the following information should be specified in the file export.bat(sh):

- if "mapping" is switched on, then:  
set NAME=company1

- if "mapping" is switched off, then:  
set NAME=InvestUA

### Warning!



When working with a module under Windows OS, the value must be specified in double quotes in order to correctly specify alias or the name of the client containing spaces. For the above example, when exporting the client's account statements "SP Ignashevich ", you should specify the following information in the file export.bat:

```
set NAME="SP Ignashevich"
```

### **Warning!**

If the export of account statements is not performed when working with a module under Windows OS, if the export.bat alias or the names of clients that contain Cyrillic characters are specified, then you should edit the export.bat file as follows:

^

- Before the set NAME line add the line **chcp 1251**.
- After the set NAME line, add the line **chcp 866**.

For the above example, when exporting the client's account statements "SP Ignashevich", you should specify the following information in the file export.bat:

```
chcp 1251
set NAME="SP Ignashevich"
chcp 866
```

When running a module under Unix OS, if necessary, you can change the logging settings file by changing the **LOG\_CONF** parameter in the export.sh file. No changes need to be made by default.

The module unloads the client account statements for a specified period of time, which can be specified explicitly (a specific start and end date of the unloading period is specified) or implicitly (a shift in days from the current date is specified). With an explicit indication of the time period, the start date of unloading is a mandatory argument. The end date of the unloading may not be specified. In this case, the current date is taken as the end date of unloading. The period of receiving the client's account statements is set as input arguments when launching the executable file export.bat(sh) and has the following format:

```
export.bat(sh) [begin_date | disp_from_now [end_date | disp_from_now]].
```

where:

- begin\_date – the initial date of exporting statements from the PRAVEXBANK BIZ system (included in the interval) in "dd.mm.yyyy" format;
- disp\_from\_now – offset in days from the current date;
- end\_date – the final date of exporting statements from iBank 2 system (included in the interval) in "dd.mm.yyyy" format.

Examples of using input arguments of executable file export.bat(sh):

- export.bat 0 – exporting the account statements for the current day;
- export.bat 04.03.2014 – exporting the account statements from 04.03.2014 to the current day inclusive;
- export.bat 04.03.2014 06.03.2014 – exporting the account statements from 04.03.2014 to 06.03.2014 inclusive;
- export.bat -7 -1 – exporting the account statements from the current day minus seven days to the current day minus one day.

For example, if today is 19.03.2014, then this request will be equivalent to the request export.bat 12.03.2014 18.03.2014;

- export.bat 12.03.2014 -4 – exporting the account statements from 12.03.2014 to the date of the current day minus four days.

Interaction with the user is performed at the command line in the text mode. The export of statements is performed sequentially for each client. If the client.xml file does not specify the value of the

clientKeyPassword parameter (for more details see **Step 4. Editing the client.xml configuration file**), you must enter the password to access the client's EDS key storage.

As a result of exporting statements to the **OUT** folder of the client's directory, statements and turnovers will be saved in text files in the format "file with separators (.csv)" (a detailed description of statements and turnovers export files in the format "file with separators (.csv)" is presented in documentation **Formats of data import and export in the PRAVEXBANK BIZ system. Technical description**). The name of the files is automatically generated in the following format:

- Statements: {account number}{currency}\_opers.txt, for example, 26001222148856UAH\_opers.txt;
- Turnovers: {account number}{currency}\_saldo.txt, for example, 26001222148856UAH\_saldo.txt.

If there are errors when exporting the client's account statements, the following information is displayed for each account:

- If an error occurs when a statement is received:  
Error when receiving the account statement {account number}. {currency}. {error message}.
- If an error occurs when a turnover is received:  
Error when getting the account turnover {account number} {currency}. {error message}.

You can also view the cause of the error in the module's operation log (for more details see the **Module operation log** section).

## 4. Module operation log

During the work of clients, the work protocols (logs) are automatically recorded in the module. Configuring the logging is performed in the file logback.xml, which is located in the %autoclient\_home%\conf subdirectory. The client can configure the **level of logging**, i.e., how much detailed information will be recorded in the logs of the module's operation. In order to do this, the **root** block should define the **level** parameter as one of the following values:

**off** – logging disabled;

**error** – errors only are recorded in the logs;

**warn** – errors and warnings are recorded in the logs;

**info** – errors, warnings and information messages are recorded in the logs;

**debug** – errors, warnings, information messages and debugging information are recorded in the logs;

**trace** – all possible information is recorded in the logs.

The protocols of module's work are in the %autoclient\_home%\logs subdirectory (subdirectory is automatically created when creating logs). The protocol of execution of import and signature of documents is located in the file import.log, the protocol of exporting the client account statements is located in the export.log file.

### Warning!

In case errors occur when importing documents, the name of the field of the import file, in which the error occurred, is printed in the error text.

## 5. Application. Module Files Assignment

Subdirectory %autoclient\_home%\bin:

№	File	Description
1	import.bat	Executable file for importing and signing documents under Windows OS

2	import.sh	Executable file for importing and signing documents under Unix OS
3	export.bat	Executable file for downloading the client account statements from PRAVEXBANK BIZ database under Windows OS
4	export.sh	Executable file for downloading the client account statements from PRAVEXBANK BIZ database under Unix OS
5	setEnvironment.bat	Setting Environment Variables

Subdirectory %autoclient\_home%\conf:

№	File	Description
1	client.xml	Client EDS Key Configuration
2	emulator.xml	Corporate Auto-client Module Configuration
3	iBank_sample.txt	Example of a client document import file
4	logback.xml	Configuration of module operation records maintenance
5	mapping.txt	Creating links to client work directories
6	public_gsl	Public encryption key of Application Server
7	readme.txt	Brief description of module settings and work with it

Subdirectory %autoclient\_home%\doc:

№	File	Description
1	autoclient.pdf	Module User Manual

The %autoclient\_home%\lib subdirectory contains library files:

№	File	Description
1	bsh.jar	Running scripts
2	cln_emulator.jar	Module kernel
3	gepard.jar	Cryptographic Library
4	ibank_core.jar	System kernel
5	logback-classic-1.0.11.jar	Auxiliary Logging Package
6	logback-core-1.0.11.jar	Logging kernel
7	packages20.jar	Auxiliary packages
8	slf4j-api-1.7.5.jar	Facade that implements module logging

The %autoclient\_home%\logs subdirectory contains log files, in which the module operation protocols are recorded.

Subdirectory %autoclient\_home%\src contains configuration scripts in BeanShell language, describing different modes of module operation:

№	File	Description
1	export.bsh	The script responsible for exporting statements
2	import.bsh	The script responsible for importing documents
3	include.bsh	Library Script

4	operateDocuments.bsh	The script containing the main method of importing documents
5	saveExtracts.bsh	The script containing the method of saving the statement of one account
6	saveOverturn.bsh	The script containing the method of saving the turnover on one account

## 6. Sources of additional information

More information on this topic can be found in the documents:

- **"PRAVEXBANK BIZ" for corporate clients. System manual;**
- **Registration of new client in "PRAVEXBANK BIZ". User manual;**
- **Formats of data import and export in PRAVEXBANK BIZ system.**