User's Guide

ApitamoPKIClient

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1 GENERAL

This document describes the operation of the ApitamoPKIClient application implemented to make use of the ApitamoPKI Web Service interface of the Ilmoitin.fi service easier. The purpose of this document is to aid parties utilising the application to implement the functionalities required by the submitting party.

With the help of the ApitamoPKIClient application, users can submit software-generated report files conforming to the record descriptions published by the Finnish Tax Administration and retrieve any related response records.

You should also familiarise yourself with the technical description of the ApitamoPKI interface, describing operation of the ApitamoPKI interface.

If the sample ApitamoPKIClient application is unsuitable for your needs, you can also create your own implementation. You can get started in a Java environment by generating the project framework with the *wsimport* tool. In a .Net environment, use the svcutil.exe tool for the generation. You can include the WSDL document required by the tools by adding ?wsdl after the environment-specific address, for example: *https://apitesti.ilmoitin.fi/wsapp/apitamopki?wsdl.*

2 AN APITAMOPKI CLIENT PROJECT

ApitamoPKIClient requires JDK version Java SE 8 or newer to function.

The following software frameworks and components were utilised in the project:

- Apache Maven v3.6.2 (project tool): http://maven.apache.org/
- Apache CXF v3.3.3 (WebServices software framework): http://cxf.apache.org/
- Apache commons-lang v2.6 (helper utilities) http://commons.apache.org/proper/commons-lang/
- Logback v1.2.3 and SLF4J v1.7.28 (logging): http://logback.qos.ch/ and http://www.slf4j.org/
- TestNG v6.14.3 (testing): http://testng.org/doc/index.html
- Apache Pivot v2.0.5 (UI software framework): http://pivot.apache.org/

3 PROJECT STRUCTURE

The project's directory structure conforms to the Maven standard.

3.1 Directory: src/main/java

3.1.1 Package: org.verohallinto.apitamoclient.dto

- CertDTO, an object that contains the data of the certificate used for authentication
- ResponseDTO, an object that contains the data returned by a submission or retrieval transaction

3.1.2 Package: org.verohallinto.apitamoclient.sec

- AliasKeyManager, processing of the certificate used by the client application
- TLSParameters, the TLS parameters of the client application

3.1.3 Package: org.verohallinto.apitamoclient.ui

Contains the classes of the graphical UI

- ApitamoPKIClientUI, main UI class
- ApitamoPKIClientUIAction, UI functions
- MainMenu, the main menu
- TabResponse, a tab on which the results of a submission or a retrieval transaction are displayed
- TabRetrieve, a tab for a retrieval transaction

- TabSend, a tab for a submission transaction

3.1.4 Package: org.verohallinto.apitamoclient.util

Contains the auxiliary classes used by the client application:
- Const, the application's constants
- Pops, the processing methods of the properties file
- Utils, miscellaneous static auxiliary methods

3.1.5 Package: org.verohallinto.ilmoitin.gen.*

Contains the classes generated based on the WSDL description.

3.2 Directory: src/main/resources

The directory contains the following files:
- ApitamoPKIClientUI.bxml, the header file for the graphical UI
- logback.xml, the header file for logging. In the file, the default logging level of the ”org.verohallinto” package has been defined as DEBUG and the logging level of the ”org.apache.cxf” package as INFO, in which case the message traffic of the client application is written into the log file Logback.log.
- wsapp-client.cmd, the start-up file of the client application
- wsapp-client.properties, the properties file of the application

3.2.1 Subdirectory: META-INF/cxf

This directory contains the CFX logging definitions.

3.2.2 Subdirectory: wsdl

This directory contains the WSDL file.

3.2.3 Subdirectory: crt

This directory contains the Java Keystore files of the test and production environments.
- IFIClientTestKeyStore.jks, the client application's certificate for the test environment (blank)
- IFIClientTestTrustStore.jks, the public key of the testi.ilmoitin.fi service
- IFIClientProdKeyStore.jks, the client application's certificate for the production environment (blank)
- IFIClientProdTrustStore.jks, the public key of the www.ilmoitin.fi service

3.3 Directory: src/test

This directory's subdirectories contain the test classes and the resource files used by them. The class ApitamoPKIClientTest is a simple test client application that performs record sending and retrieval to the test environment.

4 OPERATION OF THE APITAMOPKI CLIENT APPLICATION

4.1 User identification with a digital certificate

Digital certificates are used in user identification. The same certificates are used as those used when submitting reports to the Finnish Tax Administration's Incomes Register, or the certificates of the data providers issued by the certificate service, intended for use in the Web Services channel (during testing, the issuer is Test Data Providers Issuing CA and during production, Data Providers Issuing CA).

The certificate is used for identification only (client certificate authentication), and the submitted reports are not digitally signed. ApitamoPKI does not sign the response messages or return records.

You can find more information on applying for certificates on the Incomes Register website at https://www.vero.fi/en/About-us/it_developer/certificate-service/.

Information on the certificate repositories used by the application are stored in the *wsapp-client.properties* file. The certificates are stored in the certificate repositories as entire certificate chains, which

means that saving the last certificate in the chain is not sufficient, but the chain must be stored in its entirety.

The certificate data is relayed to the ApitamoPKI service along with the other SSL certificates. *org.verohallinto.apitamoclient.ApitamoPKIClient.java* class method *GetClient()* creates an instance of a CXF client, used to make calls to the ApitamoPKI interface. In the method you can also find how the certificate data is added to the SSL parameters.

You must also add the other server certificates required by an SSL connection to the SSL parameters (TrustCaCerts) cf. Section 3.2.3.

4.2 ApitamoPKIClient functions

As an exception to the earlier versions of ApiTaMo, the report record itself is sent to the ApitamoPKI interface as an attachment to a SOAP message. The results of the record check are also returned as an attachment.

If there were errors in the report record, they must be corrected in the software that generated the record and then resubmitted.

In production, you can also check successful submits in the Web interface of the Ilmoitin.fi service at https://www.ilmoitin.fi. Log into the service and select "Archive" from the left-hand menu. In the archive, you can browse the submitted reports and file attachments by time period or report type. Ensure that you have a valid Suomi.fi authorisation for the Business ID of the company the submissions of which you wish to peruse. In the test environment, checking requires agreeing on which Business ID to use, because the test cases of the Suomi.fi identification and authorisation limit what Business IDs can be used.

When file attachments are submitted, reasons for rejection include:

- The reports sent at the same time were also rejected.
- The file attachment was incorrectly named (see the Finnish Tax Administration's Guidelines Naming file attachments).
- The file attachment is of a wrong file type (only PDF is accepted).

4.2.1 Submitting a record (*sendOperation*)

A record can be submitted by calling the sendOperation method of org.verohallinto.apitamoclient.ApitamoPKIClient class.

```
final ResponseDTO dto = ApitamoPKIClient.sendOperation(language,
                                                       emails,
                                                       background,
                                                       material,
                                                       attachments,
                                                       path);
```

The call parameters are as follows:

- *language*
  - type: *java.lang.String*
  - The language in which *ApitamoPKI* will respond (incl. results of the check, response acknowledgements, etc.)
  - alternatives: fi/sv/en
- *emails*
  - type: *java.lang.String*

- If you are submitting a record involving a return record (e.g. direct transfers or tax number requests), or if the record is left for background processing, you can receive a notification in your e-mail once the record or the results of the record check can be retrieved. When you leave a record for background processing, you must provide at least one e-mail address.
- If you are submitting a basic report related to the construction notification procedure, you can receive the report ID assigned to the record in your e-mail.
- If you wish to specify more than one address, separate them with semicolons (;) or commas (,).

- *background*
  - type: *boolean*
  - Leaving the record checking for background processing. ”*false*” = normal processing, ”*true*” = background processing. No attachments can be sent when background processing is used.
  - You should leave records that are very large for background processing.
- *material*
  - type: *java.lang.String*
  - Path to the report record being submitted. When records in XML format are submitted, the character set of the file is UTF-8 (not BOM), but when other records are sent, the character set must be ISO-8859-1
- *attachments*
  - type: *java.util.Set<java.lang.String>*
  - A list of the submitted file attachments including paths
  - Only attachments in PDF format are accepted.
  - The file attachments must also be correctly named (see the Finnish Tax Administration's Guidelines Naming file attachments).
- *path*
  - type: *java.lang.String*
  - Path to the directory into which you wish the response to the call to be saved
  - The response is saved in the directory as an XML file. The contents of the XML file are described in the schema TamoResult.xsd.

A call of the *ApitamoPKIClient.sendOperation* method returns a response of the type *org.verohallinto.apitamoclient.dto.ResponseDTO*.

In the response to the call, the following data is returned in a *ResponseDTO*object:

- *resCode*
  - type: *int*
  - The HTTP response status code for the call
- *sendResponse*
  - type: *org.verohallinto.ilmoitin.gen.cxf.apitamopki.DeliveryDataSendResponse*
  - A response object according to the WSDL description
- *checkupResult* (used by the UI)
  - type: *org.verohallinto.ilmoitin.gen.jaxb.tamo.en.CheckupResult*

- The data of the CheckupResult element of the results of the TaMo check

- *result*
  - type: *java.io.File*
  - A TaMo results check file in XML format. The contents are described in the schema TamoResult.xsd.

- *errorFiled* (used by the UI)
  - type: *java.lang.String*
  - The errors in the call data.
  - For example, if no report file or attachments were included in the call

4.2.2 Retrieval of a return record or results of a check (retrievalOperation)

Return records and results of a check can be retrieved by calling the retrievalOperation method of the org.verohallinto.apitamoclient.ApitamoPKIClient.java class.

```
final ResponseDTO dto = ApitamoPKIClient.retrievalOperation(language,
                                                            retrievalId,
                                                            resultId,
                                                            path);
```

- *language*
  - type: *java.lang.String*
  - The language in which ApitamoPKI will respond (incl. results of the check, response acknowledgements, etc.)
  - alternatives: fi/sv/en

- *retrievalId*
  - type: *java.lang.String*
  - The retrieval ID of the return record, set when a return record is being retrieved.

- *resultId*
  - type: *java.lang.String*
  - The result ID of a record left for background processing, when results of the check are being retrieved.

- *path*
  - type: *java.lang.String*
  - The directory in which you wish ApiTamo's response (return record or results of a check) to be saved.
  - The response is saved in the directory as an XML file. The contents of the XML file are described in the schema TamoResult.xsd.

A call of the *ApitamoPKIClient.retrievalOperation* method returns a response of the type *org.verohal-linto.apitamoclient.dto.ResponseDTO*.

In the response to the call, the following data is returned in a *ResponseDTO*object:

- *resCode*
  - type: *int*
  - The HTTP response status code for the call

- *retrResponse*
    - type: *org.verohallinto.ilmoitin.gen.cxf.apitamopki.DeliveryDataRetrievalResponse*
    - A response object according to the WSDL description
- *checkupResult* (used by the UI)
    - type: *org.verohallinto.ilmoitin.gen.jaxb.tamo.en.CheckupResult*
    - Data of the CheckupResult element of the TaMo results of a check (used by the UI) if results of a check are being retrieved
- *errorFiled* (used by the UI)
    - type: *java.lang.String*
    - The errors in the call data.
    - For example, if retrieval ID or result ID were included in the call

5 GRAPHICAL USER INTERFACE

The *ApiTaMoClientUI* class is a simple model of the use of the actual client application class *ApiTaMo-Client*, allowing you to familiarise yourself with using the client application. The user interface is implemented using the Apache Pivot software framework.

The user interface has individual tabs for each operation, as well as a separate "Response" tab for showing the results of a check and SOAP errors, for example.

5.1 Menus

5.1.1 Environment

In the Environment menu, you can select to which environment you wish to send a message. The selected environment is displayed in the title bar of the application.

The properties of the different environments are managed in the wsapp-client.properties file.

5.1.2 Certificate

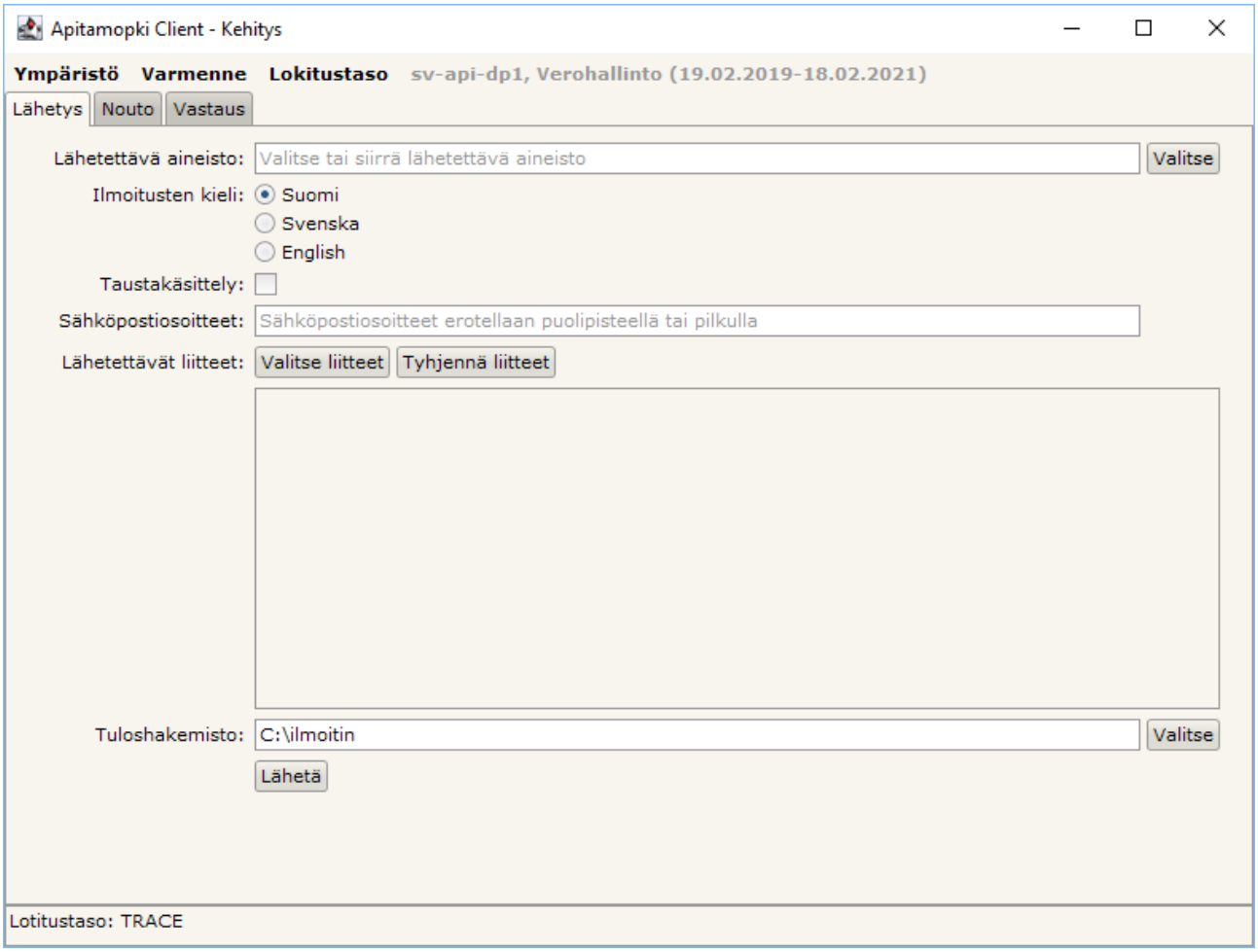
In the Certificate menu, you can see all certificates found in the Certificate Repository defined for the ApitamoPKIClient application. Select the certificate you wish to use for sending at the time. You can see the details of the selected certificate on the right hand side of the menu item.

The data in the Certificate Repositories are managed in the wsapp-client.properties file.

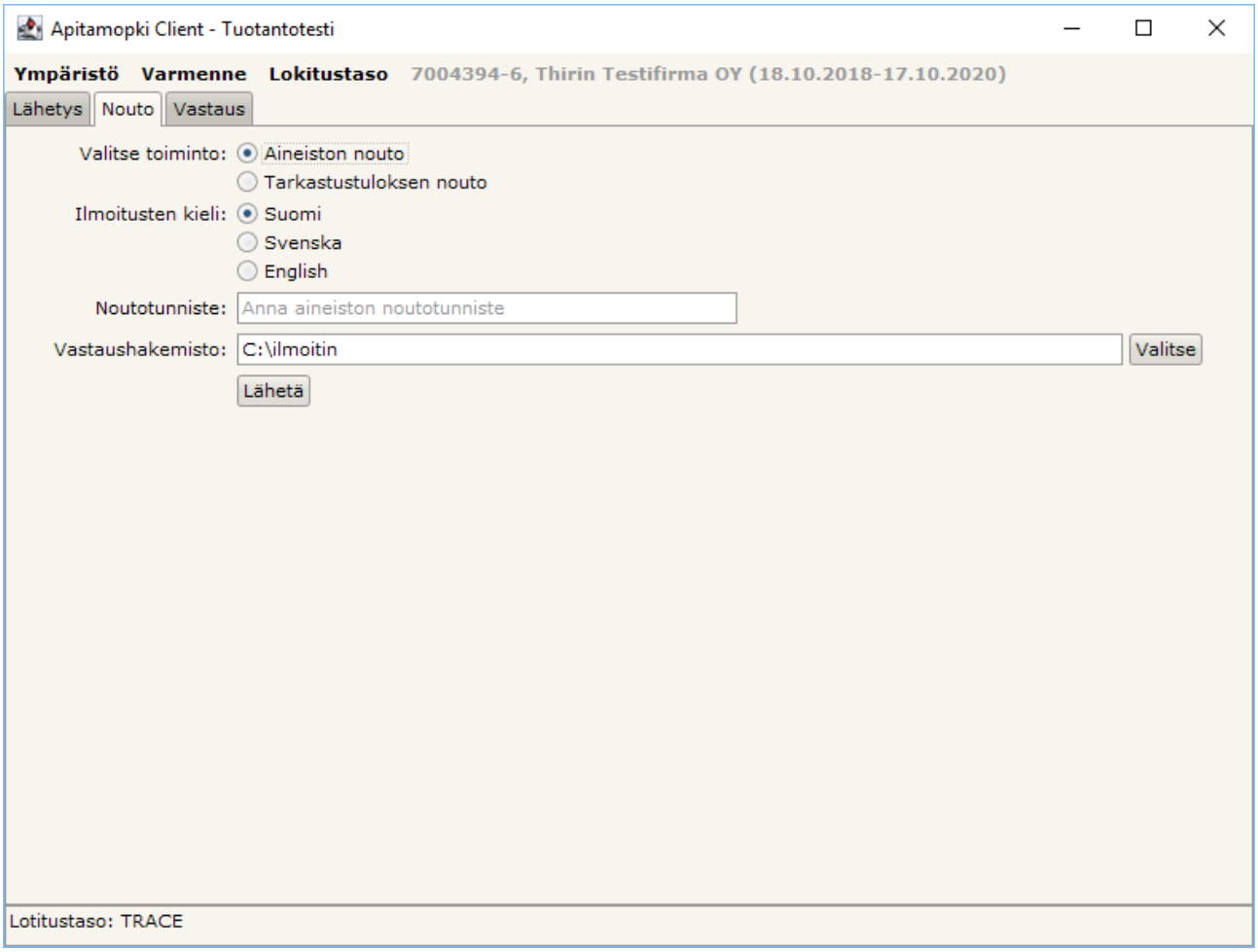
5.1.3 Logging level

In the Logging level menu, you can select the level at which ApitamoPKIClient writes events into a log file. The selected logging level is displayed in the lower left corner of the application's info bar.

5.2 Tab Sending



5.3 Tab Retrieval



5.4 Tab Response