Verkkolasku
osoitteisto

JSON, XML and SFTP APIs

How-to Guide

Version 1.3	2025-11-07	BEL: Added JSON & HTTPS details and updated eg. external links
Version 1.1	2021-05-27	BEL: Added owner and ownerSchema description, added prod urls
Version 1.0	2017-11-22	BEL: Added Get eAddress schema to XML-API and description of SFTP API. Service name updated & some minor corrections.
Version 0.2	2017-11-08	BEL: First version for operators
Version 0.1	2017-11-06	BEL Solutions Oy: Initial DRAFT version for internal use & review

General description

This document describes the usage of XML and JSON, in relation with SFTP and HTTPS APIs of TIEKE Verkkolaskuosoitteisto (https://verkkolaskuosoite.fi), which is an e-invoice address catalog for Finnish organizations.

Both XML and JSON APIs are request-response protocols. Administrator sends XML or JSON document to the corresponding request endpoint or file share and receives either XML or JSON document back as the reply.

Differences between XML and JSON-API's

JSON:

- Improved error handling
  - IF the file-input tries to change or remove something that does not exist, or add an address that already exists, it won't be considered as an error. Instead, the API processes all instructions that can be interpreted and ignores those which it could not perform.
  - This means that the data processing can occur even if some changes could not be performed.
- Supports new version of eAddress (2.2)
  - It is still compatible with eAddress version 2.0
- Improved JSON-definitions (JSD-files)
  - JSD-files corresponds to XML's XSD-files. They can be fetched directly via SFTP server folder /export/ or from HTTPS endpoints defined for the Batch (which is the eAddress root element) schema.
  - For example, LastModified-element is an element for listing the latest modification time for the organization

Access via HTTPS or SFTP

SFTP-folders

- **/import/** - for uploading of files (e.g eaddress.json) and reading the reply file (e.g. eaddress_response.json)
- **/export/** - for fetching of files (eaddress.json, owners. Json)

Importing (to Verkkolaskuosoitteisto, in json in this example)

Filename: **eaddress.json**
Folder: **/import/**
Input: Addresses according to **eaddress.jsd** (Batch-schema).

After the upload of eaddress.json file the **eaddress_response.json**-file will be automatically created to the same folder. It includes the detailed feedback. If something in the input file is incorrect, the other data will be correctly processed, and the response file will have details over the erroneous one.

Export (from Verkkolaskuosoitteisto, in json in this example)

Example of files in **/export/:**

- **owners.json** – list over operators and their tasks
- **eaddress.json** – content of the Verkkolaskuosoitteisto.
- There are also various **jsd/xsd** files for schema definition and validation

HTTPS endpoints

To be able to use JSON you need to give rights for the following HTTP-details:

- For fetching of JSON:
  - **Accept: application/json**
- For sending JSON:
  - **Content-Type: application/json**

Fetching of schema for Batch (eAddress)

Production: https://verkkolaskuosoite.fi/server/Integration/batchSchema
Test: https://test.osoitteisto.bel.fi/server/Integration/batchSchema

➔ Returns **eaddress.jsd**

Fetching of schema for BatchResponse

Production: https://verkkolaskuosoite.fi/server/Integration/batchResponseSchema
Test: https://test.osoitteisto.bel.fi/server/Integration/batchResponseSchema

➔ Returns **eaddress_response.jsd**

Fetching of schema for Owners

Production: https://verkkolaskuosoite.fi/server/Integration/ownersSchema
Test: https://test.osoitteisto.bel.fi/server/Integration/ownersSchema

➔ Returns **owners.jsd**

Importing JSON-data

Production: https://verkkolaskuosoite.fi/server/Integration/import
Test: https://test.osoitteisto.bel.fi/server/Integration/import

➔ Send via **PUT** method

Environment details

Verkkolaskuosoitteisto has separate test and production environments and appropriate service should be used as part of the URLs and as sftp host when accessing the APIs. In this document all URLs and sftp examples used point to test site. Replace test server part with production server when appropriate.

Service url for https:

- **TEST**: https://test.osoitteisto.bel.fi/
- **PRODUCTION**: https://verkkolaskuosoite.fi/

Service url for SFTP:

- **TEST**: test.osoitteisto.bel.fi
- **PRODUCTION**: verkkolaskuosoite.fi

Some of the API services require authentication with a valid operator-specific account and password. To be able to use some services properly, you'll need to know your operator prefix for eAddress AuthorizationToken. You can get both from TIEKE, who manages the service. For more information on eAddress, see separate eAddress documentation (https://tieke.fi/palvelut/verkkolaskuosoitteisto/verkkolaskuosoitteiston-latauksen-rajapinnasta/eaddress/). Verkkolaskuosoitteisto requires eAddress version 2.0 or newer to be used.

Same account details will work with SFTP and HTTPS.

Currently (this may change later) you can also use following authentication and other information on TEST service:

- Account: info@bel.fi
- Password: aaaBBB###
- Prefix for eAddress AuthorizationToken: XX
- ServiceID for eAddress ServiceID: TESTTEST

The account and password above are used as part of the examples throughout the document. Please replace these with your operator-specific account and password.

JSON API

Download e-invoice addresses

This service returns all e-addresses within Verkkolaskuosoitteisto in eAddress format.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/export
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/export
- Authentication: required
- Add **Accept-Encoding: gzip** header to allow server to pack the response for transport and **Accept: application/json** to receive in JSON format.
- Returns
  - **On success**

        - http status code 200 OK
        - Content type is application/json
        - Response body follows eAddress schema.
    - **On error**
        - some other http status code (e.g. 4xx, 5xx)

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X GET –H 'Accept: application/json' https://test.osoitteisto.bel.fi/server/Integration/export

Upload e-invoice addresses

You may incrementally update (add, delete or replace) single or multiple e-addresses within Verkkolaskuosoitteisto by sending valid eAddress files to this interface. Please see eAddress documentation for further details:
https://tieke.fi/palvelut/verkkolaskuosoitteisto/verkkolaskuosoitteiston-latauksen-rajapinnasta/eaddress/
Simple examples can be found in appendices 1,2 and 3.

Instead of incremental updates you can also replace all e-addresses associated with the operator account you are using. You should run this operation at regular intervals to ensure that e-addresses you are managing and your Verkkolaskuosoitteisto e-addresses are in sync.

It is strongly encouraged that you compress this material and **use http Content-Encoding: gzip** header. Also, your eAddress ID, **ServiceID** and **AuthorizationToken** prefixes must match operator-specific information attached to the account you are using.

- Method: PUT
- URL:
    - TEST: https://test.osoitteisto.bel.fi/server/Integration/import
    - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/import
- Authentication: required
- Content type should be set to **application/json**
- Note: Pack eAddress-file and use http **Transport-Encoding: gzip** header
- Returns
    - **On success:**
        - http status code 200 OK
        - Content type is application/json
        - Document conforms to BatchResponse schema
        - BatchResponse Status field with text content OK.
    - **On error:**
        - some other http status code for protocol-level error or unhandled system error or
        - BatchResponse with a Status field with text content other than OK.

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X PUT -H 'Content-Type: application/json' -T ./myfile-NEW.json https://test.osoitteisto.bel.fi/server/Integration/import

Get eAddress schema

Returns currently supported eAddress schema.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/batchSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/batchSchema
- Authentication: not required
- Add Accept: **application/json** to receive JSD instead of XSD
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/json
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl https://test.osoitteisto.bel.fi/server/Integration/batchSchema

Get BatchResponse schema

Returns currently supported response batch schema. BatchResponses generally carry statistical information on the operations performed in the database. Status field contains the overall result, which contains “OK” when requested operation was successful, and some other text string when not. The Errors array contains error messages which describe the cause of the error in human readable format.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/batchResponseSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/batchResponseSchema
- Authentication: not required
- Add **Accept: application/json** to receive JSD instead of XSD
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/json
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl -H ‘Accept: application/json’
https://test.osoitteisto.bel.fi/server/Integration/batchResponseSchema

Download Owners

This service returns all owners within Verkkolaskuosoitteisto in xml format. Schema for this is available at https://verkkolaskuosoite.fi/server/Integration/ownersSchema

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/owners
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/owners
- Authentication: required
- Add **Accept-Encoding: gzip** header to allow server to pack the response for transport.
- Returns
  - **On success**
    - http status code 200 OK
    - Content type is application/json
    - Response body schema available at: https://verkkolaskuosoite.fi/server/Integration/ownersSchema
  - **On error**
    - some other http status code (e.g. 4xx, 5xx)

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X GET -H 'Accept: application/json'
https://test.osoitteisto.bel.fi/TIEKE/server/Integration/owners

Get Owners Schema

Returns currently supported eAddress schema.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/ownersSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/ownersSchema
- Authentication: not required
- Add **Accept: application/json** to receive JSD instead of XSD
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/json
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl -H 'Accept: application/json' https://test.osoitteisto.bel.fi/server/Integration/ownersSchema

XML API

Download e-invoice addresses

This service returns all e-addresses within Verkkolaskuosoitteisto in eAddress format. XML is the default format, so it is not necessary to specify Accept: application/xml to receive schema documents and other replies in XML.

- Method: GET
- URL:
    - TEST: https://test.osoitteisto.bel.fi/server/Integration/export
    - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/export
- Authentication: required
- Add **Accept-Encoding: gzip** header to allow server to pack the response for transport.
- Returns
    - **On success**
        - http status code 200 OK
        - Content type is application/xml
        - Response body follows eAddress schema.
    - **On error**
        - some other http status code (e.g. 4xx, 5xx)

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X GET
https://test.osoitteisto.bel.fi/server/Integration/export

Upload e-invoice addresses

You may incrementally update (add, delete or replace) single or multiple e-addresses within Verkkolaskuosoitteisto by sending valid eAddress files to this interface. Please see eAddress documentation for further details:
https://tieke.fi/palvelut/verkkolaskuosoitteisto/verkkolaskuosoitteiston-latauksen-rajapinnasta/eaddress/
Simple examples can be found in appendices 1,2 and 3.

Instead of incremental updates you can also replace all e-addresses associated with the operator account you are using. You should run this operation at regular intervals to ensure that e-addresses you are managing and your Verkkolaskuosoitteisto e-addresses are in sync. Simple example can be found in appendix 4.

It is strongly encouraged that you compress this material and **use http Content-Encoding: gzip** header. Also, your **eAddress ID**, **ServiceID** and **AuthorizationToken** prefixes must match operator-specific information attached to the account you are using.

- Method: PUT
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/import
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/import
- Authentication: required
- Content type should be set to **application/xml**
- Note: Pack eAddress-file and use http Transport-Encoding: gzip header
- Returns
  - **On success**
    - http status code 200 OK
    - Content type is application/xml
    - Document conforms to BatchResponse xml schema
    - BatchResponse Status field with text content OK.
  - **On error**
    - some other http status code for protocol-level error or unhandled system error or
    - BatchResponse with a Status field with text content other than OK.

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X PUT -T ./myfile-NEW.xml https://test.osoitteisto.bel.fi/server/Integration/xmlImport

Get eAddress schema

Returns currently supported eAddress schema.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/batchSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/batchSchema
- Authentication: not required
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/xml
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl -H 'Accept: application/json' https://test.osoitteisto.bel.fi/server/Integration/batchSchema

Get BatchResponse schema

Returns currently supported response batch schema. BatchResponses generally carry statistical information on the operations performed in the database. Status field contains the overall result, which contains “OK” when requested operation was successful, and some other text string when not. The Errors array contains error messages which describe the cause of the error in human readable format.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/batchResponseSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/batchResponseSchema
- Authentication: not required
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/xml
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl https://test.osoitteisto.bel.fi/server/Integration/batchResponseSchema

Download Owners

This service returns all owners within Verkkolaskuosoitteisto in xml format. Schema for this is available at https://verkkolaskuosoite.fi/server/Integration/ownersSchema

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/owners
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/owners
- Authentication: required
- Add **Accept-Encoding: gzip** header to allow server to pack the response for transport.
- Returns
  - **On success**
    - http status code 200 OK
    - Content type is application/xml
    - Response body schema available at: https://verkkolaskuosoite.fi/server/Integration/ownersSchema
  - **On error**
    - some other http status code (e.g. 4xx, 5xx)

UNIX command line example:
curl --basic --user 'info@bel.fi:aaaBBB###' -X GET
https://test.osoitteisto.bel.fi/TIEKE/server/Integration/owners

Get Owners Schema

Returns currently supported eAddress schema.

- Method: GET
- URL:
  - TEST: https://test.osoitteisto.bel.fi/server/Integration/ownersSchema
  - PRODUCTION: https://verkkolaskuosoite.fi/server/Integration/ownersSchema
- Authentication: not required
- Returns:
  - **On success**
    - http status code 200 OK
    - Content type is application/xml
    - Content is the schema document.
  - **On error**
    - some other http status code.

UNIX command line example:
curl https://test.osoitteisto.bel.fi/server/Integration/ownersSchema

SFTP API

Connect to appropriate service (test or production) using SSH File Transfer Protocol (also Secure File Transfer Protocol, or SFTP). SFTP API supports following SFTP commands: cd, pwd, ls, dir, get, put, rm and bye. You need to use a broker account to be able to use SFTP API.

Unix command line example (interactive):
sftp -oUser="info@bel.fi" -oCompression=yes test.osoitteisto.bel.fi

Download e-invoice addresses

E-addresses are available under *export* directory with name *eaddress.xml* in eAddress xml-format.

UNIX command line example (interactive):

sftp -oUser="info@bel.fi" -oCompression=yes test.osoitteisto.bel.fi
Password authentication
Password:
Connected to test.osoitteisto.bel.fi.
sftp> *cd export*
sftp> *get eaddress.xml*
Fetching /export/eaddress.xml to eaddress.xml
sftp> *bye*

You now have eaddress.xml in your current directory containing up to date e-addresses.

Upload e-addresses

You may incrementally update (add, delete or replace) single or multiple e-addresses within Verkkolaskuosoitteisto by placing valid eAddress files to this interface in the directory *import*. Please see eAddress documentation for further details:
https://tieke.fi/palvelut/verkkolaskuosoitteisto/verkkolaskuosoitteiston-latauksen-rajapinnasta/eaddress/
Simple examples can be found in appendices 1,2 and 3.

Instead of incremental updates you can also replace all e-addresses associated with the operator account you are using. You should run this operation at regular intervals to ensure that e-addresses you are managing and your Verkkolaskuosoitteisto e-addresses are in sync. Please see eAddress documentation for further details. Simple example can be found in appendix 4.

It is strongly encouraged that you compress this material **(use sftp compression option)**. Also, your **eAddress ID**, **ServiceID** and **AuthorizationToken** prefixes must match operator-specific information attached to the account you are using.

Once you have uploaded your eAddress file to *import* directory, a response file named ***<whatever_your_file_was_named>_response.xml*** will be available in the same directory immediately. This response file should be downloaded and checked for the status of your upload. The file conforms BatchResponse schema. Status is set to *OK* when no errors have occurred.

UNIX command line example (interactive):

```
sftp -oUser="info@bel.fi" -oCompression=yes test.osoitteisto.bel.fi
Password authentication
Password:
Connected to test.osoitteisto.bel.fi.
sftp> cd import
sftp> put myfile.xml
Uploading myfile.xml to /import/myfile.xml
myfile.xml                                    100%  703   129.7KB/s   00:00
sftp> ls
myfile.xml          myfile_response.xml
sftp> get myfile_response.xml
Fetching /import/myfile_response.xml to myfile_response.xml
/import/myfile_response.xml                   100%  591    51.8KB/s   00:00
sftp> rm myfile.xml
Removing /import/myfile.xml
sftp> rm myfile_response.xml
Removing /import/myfile_response.xml
sftp> ls
sftp> bye
```

You now have in your current directory *myfile_response.xml* containing response status of the processing in XML format conforming BatchResponse schema.

Get eAddress schema and BatchResponse schema

Currently supported eAddress schema is available in SFTP API directory ***export*** with filename ***eaddress.xsd***

Currently supported Batch response schema is available in SFTP API directory ***export*** with filename ***eaddress_response.xsd***

UNIX command line example (interactive):

sftp -oUser="info@bel.fi" -oCompression=yes test.osoitteisto.bel.fi
Password authentication
Password:
Connected to test.osoitteisto.bel.fi.
sftp> *cd export*
sftp> *ls*
eaddress.xml eaddress.xsd eaddress_response.xsd
sftp> *get eaddress.xsd*
Fetching /export/eaddress.xsd to eaddress.xsd
sftp> *get eaddress_response.xsd*
Fetching /export/eaddress_response.xsd to eaddress_response.xsd
sftp> *bye*

You now have in your current directory files ***eaddress.xsd*** containing eaddress schema and ***eaddress_response.xsd*** containing batch response schema.

For more information on eAddress, see separate eAddress documentation: https://tieke.fi/palvelut/verkkolaskuosoitteisto/verkkolaskuosoitteiston-latauksen-rajapinnasta/eaddress/

BatchResponses carry statistical information on the operations performed in the database. Status field contains the overall result, which contains “OK” when operation was successful, and some other text string when not. The Errors array contains error messages which describe the cause of the error in human readable format.

Download Owners and Owners Schema

Owners and schema can be fetched from *export* directory. Following files are provided:

owners.json	owners in JSON format
owners.xml	owners in XML format
owners.xsd	owners schema

UNIX command line example (interactive):

sftp -oUser="info@bel.fi" -oCompression=yes test.osoitteisto.bel.fi
Password authentication
Password:
Connected to test.osoitteisto.bel.fi.
sftp> *cd export*
sftp> *ls owners**
owners.json owners.xml owners.xsd
sftp> *get owners**
Fetching /export/owners.json to owners.json
Fetching /export/owners.xml to owners.xml
Fetching /export/owners.xsd to owners.xsd
sftp> *bye*

Appendices

Appendix 1: Example of eAddress XML to update (add new) single e-invoice address

```
<?xml version="1.0" encoding="UTF-8"?>
<Batch Function="UPDATE" Timestamp="2017-10-06T13:17:47Z" Version="1.1"
xsi:noNamespaceSchemaLocation="eAddress1.1.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Organization>
        <Name>TESTIORGANISAATIO OY</Name>
        <Identifier TYPE="BUSINESSID">7654321-2</Identifier>
        <eAddress Context="EINVOICE" Direction="RECEIVE" Operation="NEW">
            <Name>TESTIEADDRESS (added)</Name>
            <ID IDType="OVT">003776543212</ID>
            <ServiceID IDType="BIC">TESTTEST</ServiceID>
            <PermissionToSend>true</PermissionToSend>
            <Active>true</Active>
            <AuthorizationToken>EO12345678901234567890</AuthorizationToken>
        </eAddress>
    </Organization>
</Batch>
```

Appendix 2: Example of eAddress XML to update (delete) single e-invoice address

```
<?xml version="1.0" encoding="UTF-8"?>
<Batch Function="UPDATE" Timestamp="2017-10-06T13:17:47Z" Version="1.1"
xsi:noNamespaceSchemaLocation="eAddress1.1.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Organization>
        <Name>TESTIORGANISAATIO OY</Name>
        <Identifier TYPE="BUSINESSID">7654321-2</Identifier>
        <eAddress Context="EINVOICE" Direction="RECEIVE" Operation="DELETE">
            <Name>TESTIEADDRESS (deleted)</Name>
            <ID IDType="OVT">003776543212</ID>
            <ServiceID IDType="BIC">TESTTEST</ServiceID>
            <PermissionToSend>true</PermissionToSend>
            <Active>true</Active>
            <AuthorizationToken>EO12345678901234567890</AuthorizationToken>
        </eAddress>
    </Organization>
</Batch>
```

Appendix 3: Example of eAddress XML to update (replace) single e-invoice address

```
<?xml version="1.0" encoding="UTF-8"?>
<Batch Function="UPDATE" Timestamp="2017-10-06T13:17:47Z" Version="1.1"
xsi:noNamespaceSchemaLocation="eAddress1.1.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Organization>
        <Name>TESTIORGANISAATIO OY</Name>
        <Identifier TYPE="BUSINESSID">7654321-2</Identifier>
        <eAddress Context="EINVOICE" Direction="RECEIVE" Operation="REPLACE">
            <Name>TESTIEADDRESS (replaced)</Name>
            <ID IDType="OVT">003776543212</ID>
            <ServiceID IDType="BIC">TESTTEST</ServiceID>
            <PermissionToSend>true</PermissionToSend>
            <Active>true</Active>
            <AuthorizationToken>EO12345678901234567890</AuthorizationToken>
        </eAddress>
    </Organization>
</Batch>
```

Appendix 4: Example of eAddress XML to replace all e-addresses

```
<?xml version="1.0" encoding="UTF-8"?>
<Batch Function="REPLACE" Timestamp="2017-10-06T13:17:47Z" Version="1.1"
xsi:noNamespaceSchemaLocation="eAddress1.1.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Organization>
        <Name>Kuusi kertaa kuusi testi Oy</Name>
        <Identifier TYPE="BUSINESSID">6666662-2</Identifier>
        <eAddress Context="EINVOICE" Direction="RECEIVE">
            <Name>TESTIEADDRESS (added)</Name>
            <ID IDType="OVT">003766666622</ID>
            <ServiceID IDType="BIC">TESTTEST</ServiceID>
            <PermissionToSend>true</PermissionToSend>
            <Active>true</Active>
            <AuthorizationToken>EO12345678901234567890</AuthorizationToken>
        </eAddress>
    </Organization>
</Batch>
```