

# IKEA Print Application - Hybrid Model S

Supplier Setup guide

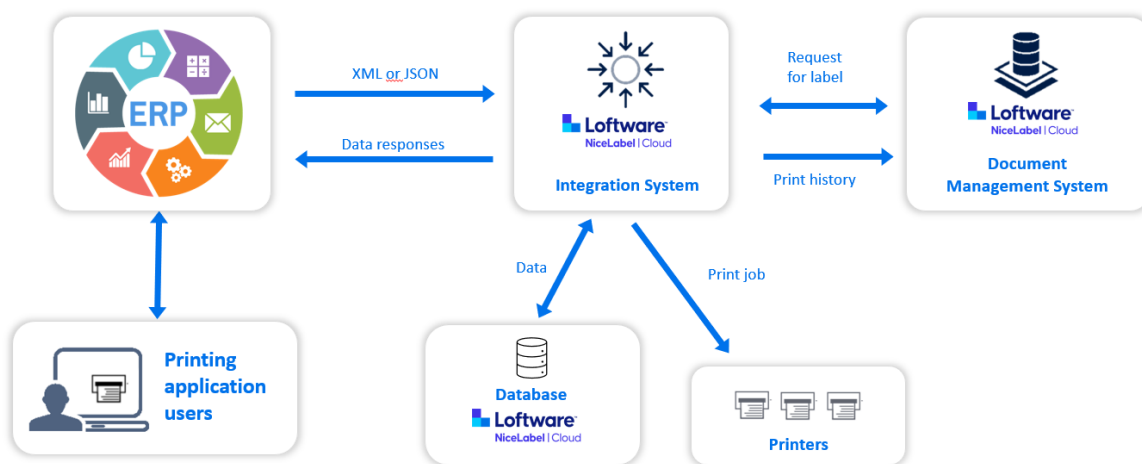
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# Purpose

In September 2022 IKEA introduced IKEA Print Application in Cloud. That enables IKEA suppliers to print dynamic labels with GS1 Datamatrix barcode. All data for labels and printing application are held in Cloud.

With this hybrid (S) model, printing will be done on local computer of supplier, triggered from supplier's ERP/WMS system, with data for labels still fetched from Cloud database.

# Topology



Topology: Main components of Hybrid S model and their relations

# Installation

## Requirements

To use IKEA Hybrid model S solution, an Internet connection is required to download the installation program and the setup file.

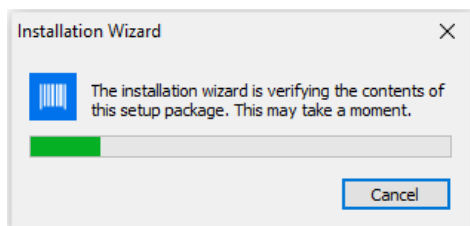
To install the solution Windows computer is required with following [system requirements](#) (see section NiceLabel10).

## NiceLabel Automation Installation

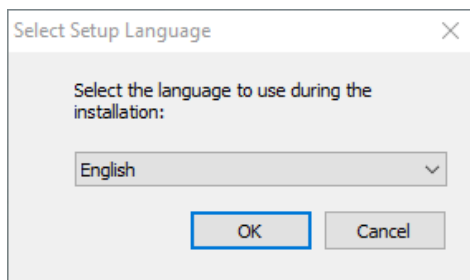
Note: Installation package contains setup for 3 NiceLabel products. During installation choose only NiceLabel Automation module (at step 6).

To install NiceLabel Automation module go to <https://ftp.nicelabel.com/software/demo/v10/NiceLabel10.exe> to download installation package.

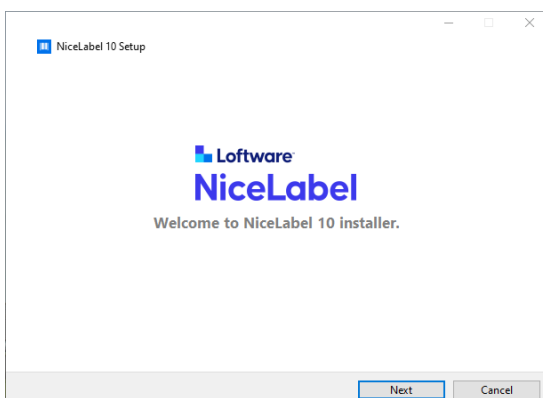
1. After download, run the installation file. Installer verifies the installation package content.



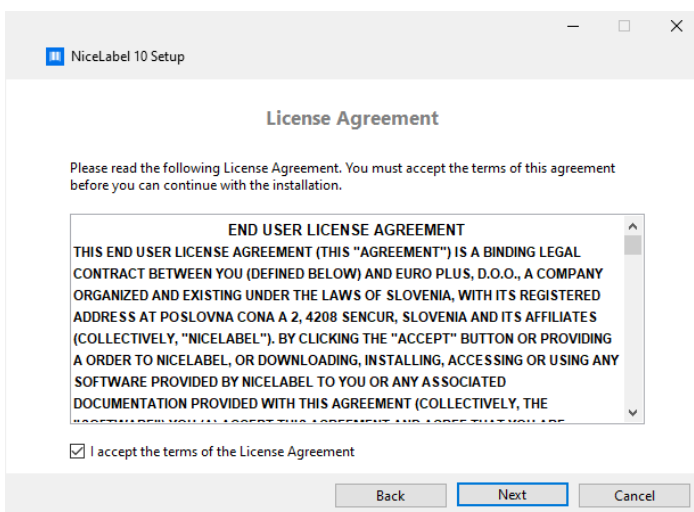
2. Select installation language from the drop-down list and click OK



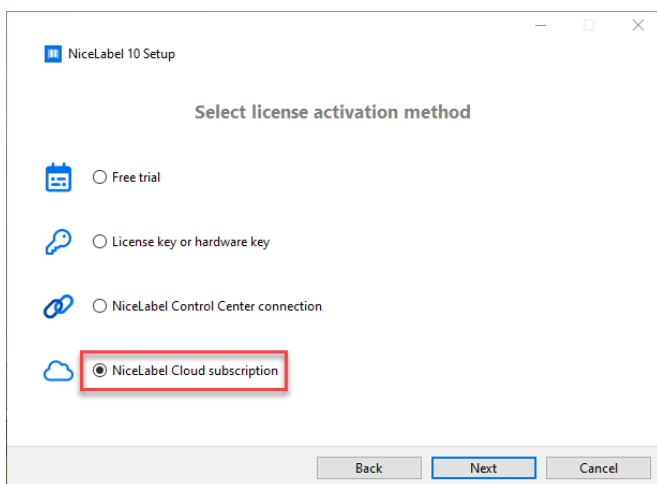
3. NiceLabel Setup dialog window opens automatically. Click Next.



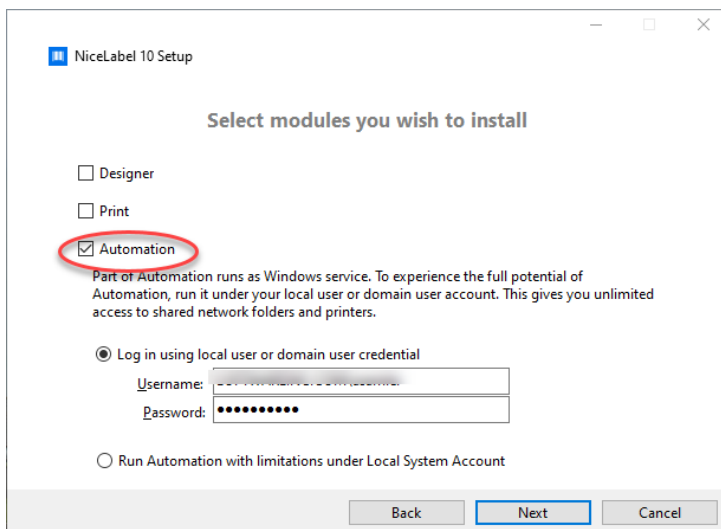
- After accepting the license agreement, click *Next* to continue.



- For the license activation method select *NiceLabel Cloud subscription*.



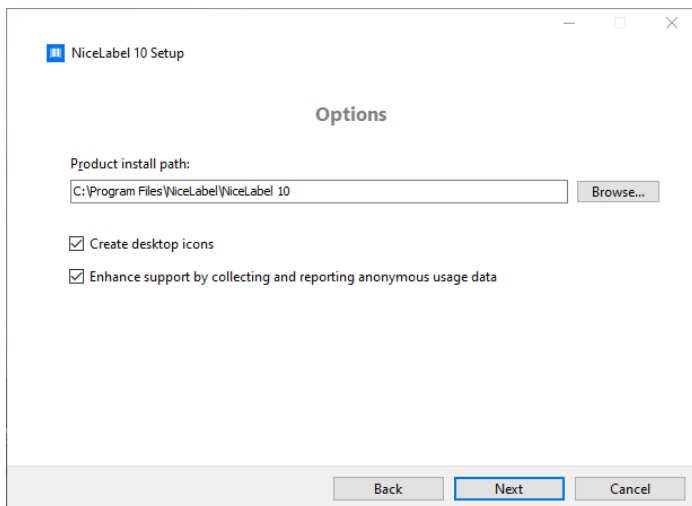
- When selecting modules, only select Automation (unselect Print and Designer).



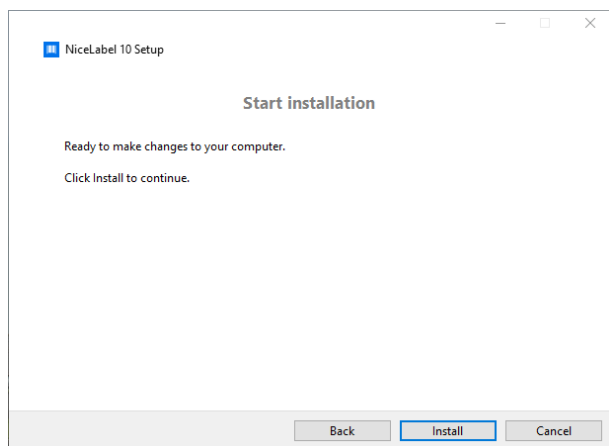
Select how you are going to run Automation service. Type in the account under which the Windows services are going to run. Make sure you use an account with access to local printer drivers.

*NOTE: We recommend using standard or administrative user accounts. The Local System Account has limited access to network shared files and printers. It requires additional work when setting up printers to make them work correctly.*

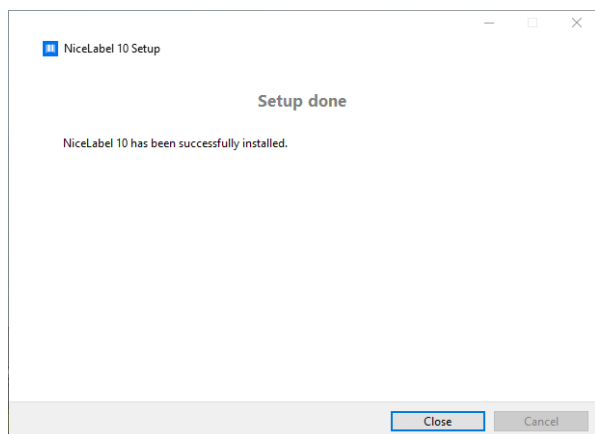
7. Define the installation path and decide if you want to share your usage data with NiceLabel or not. Anonymous usage data helps NiceLabel improve the applications and therefore increase your productivity.



8. The package is now ready to install, click *Install* to continue.



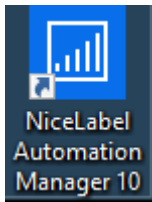
9. Once the set up is complete, click *Close*.



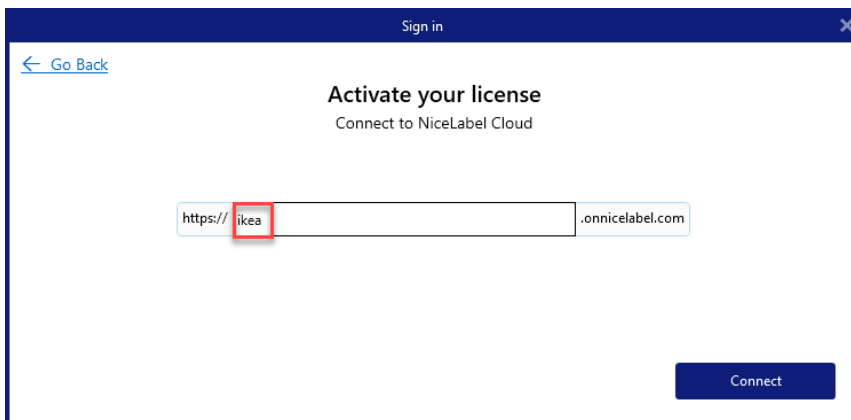
# Activation

The first time NiceLabel Automation is run, license activation is required.

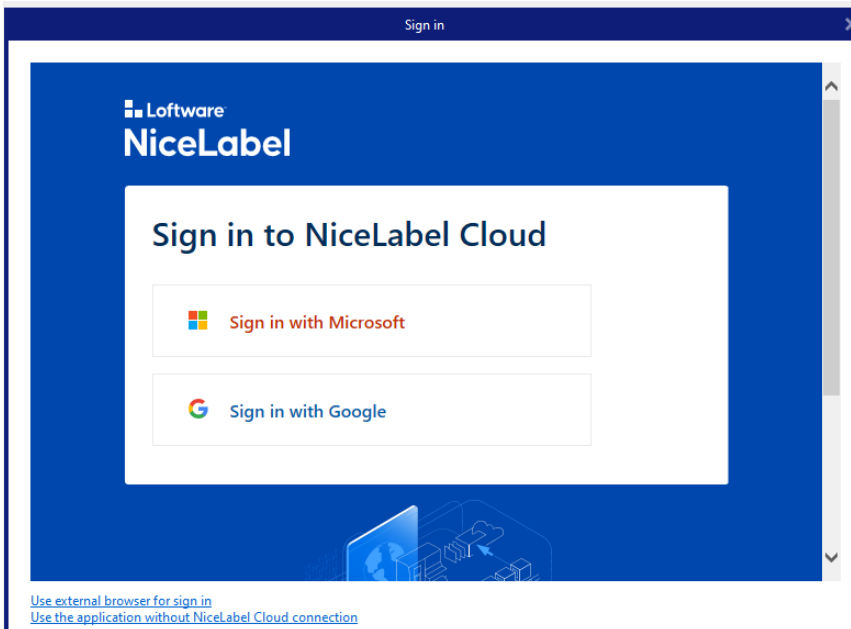
1. Run NiceLabel Automation Manager (ideally from desktop icon).



2. A sign in window will appear. Type (**ikea**) for NiceLabel Cloud location and click *Connect*.



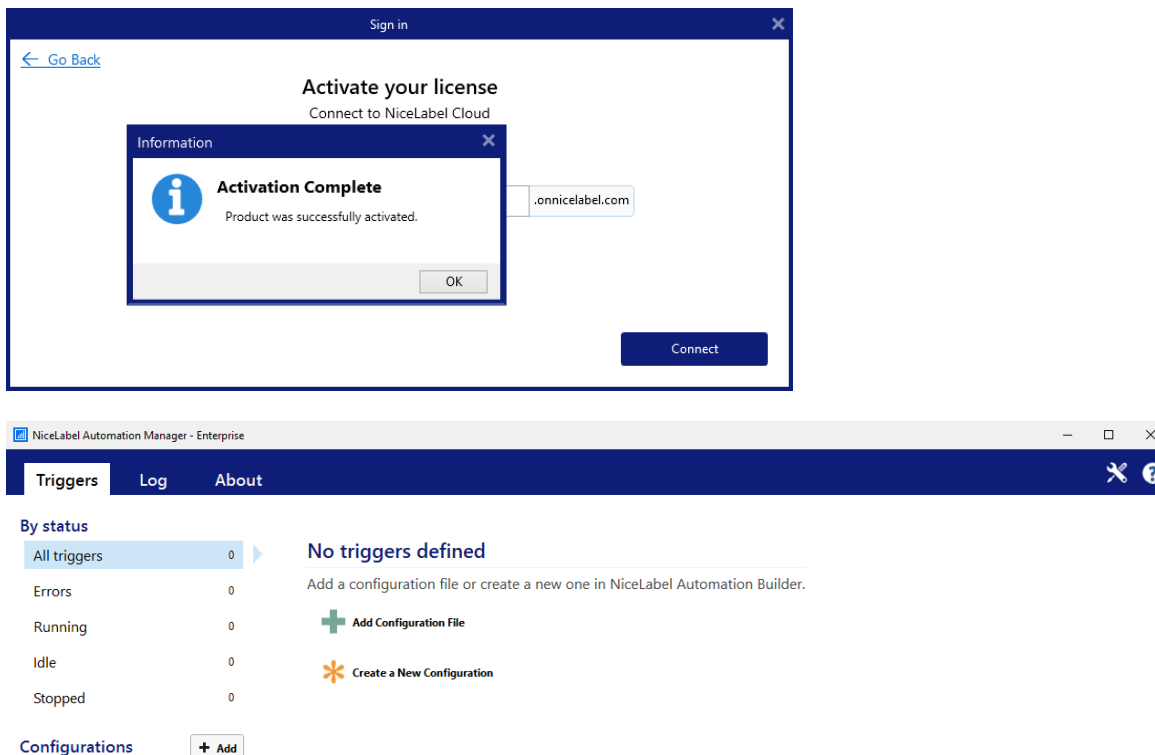
3. Sign into your label cloud using the Google account provided by IKEA.



Note: If this is the first time you have used this account you may be required to change your password.

Note: in case that you will experience issues during Sign in you could choose Use external browser for sign in, which will open the Internet browser where you will provide the account credentials.

- After a few seconds the software will activate, click *OK* and the Automation Manager will open.

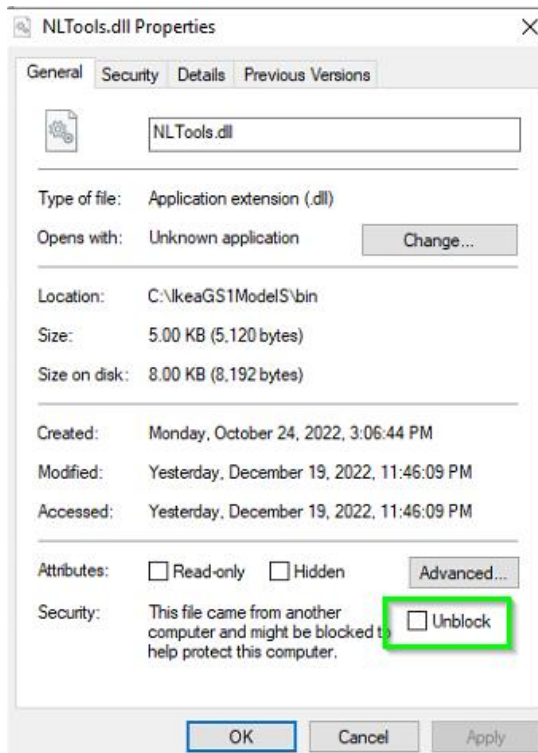


- Leave the Automation Manager open and move on to the next stage (file download).

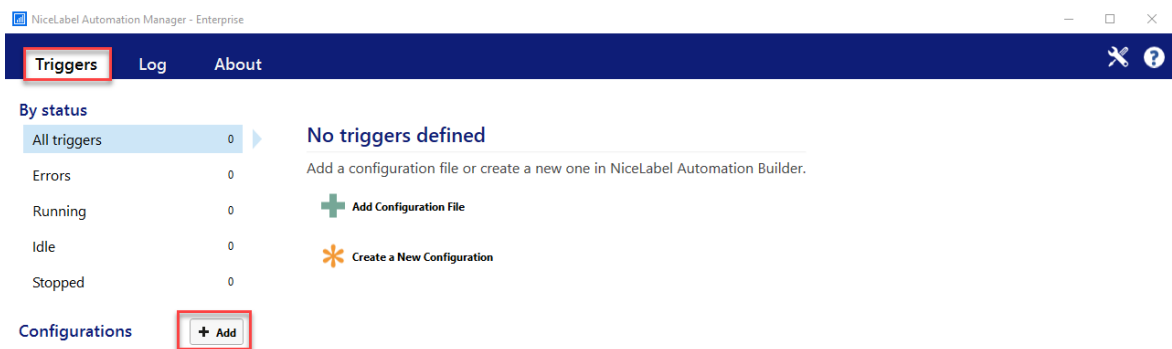
## Automation configuration file download

For installation of triggers which are processing the print requests a configuration file is required, which is downloaded from NiceLabel.

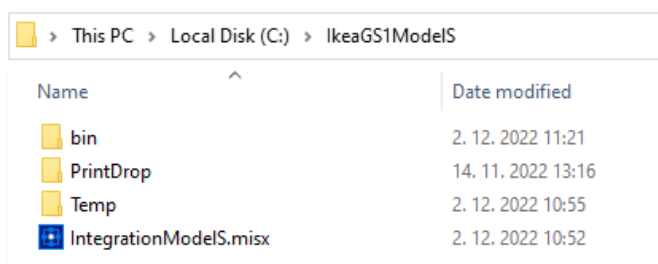
- Download the IkeaGS1ModelS.zip setup file from <https://ikea.onnicelabel.com:8080/Downloads/IkeaGS1ModelS.zip>
- Unzip file to a suitable folder (suggested location is root of C drive "C:").
- Open bin open properties of both dll files and make sure they are not locked.  
If there is a security message like in the picture below, check Unlock box and Apply.



- From Automation Manager click **+Add** to add a configuration file (make sure you are on *Triggers* tab).

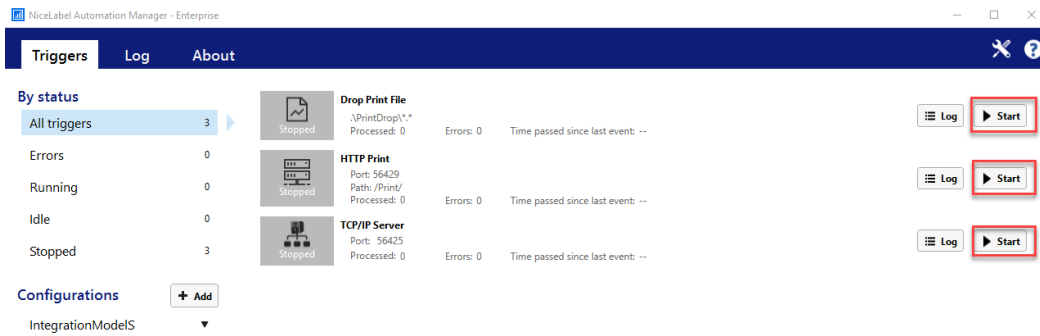


- A file browser window will open. Browse to the "C:\IkeaGS1ModelS" folder (or your chosen unzip folder). From here run select the "IntegrationModelS.misx" file.

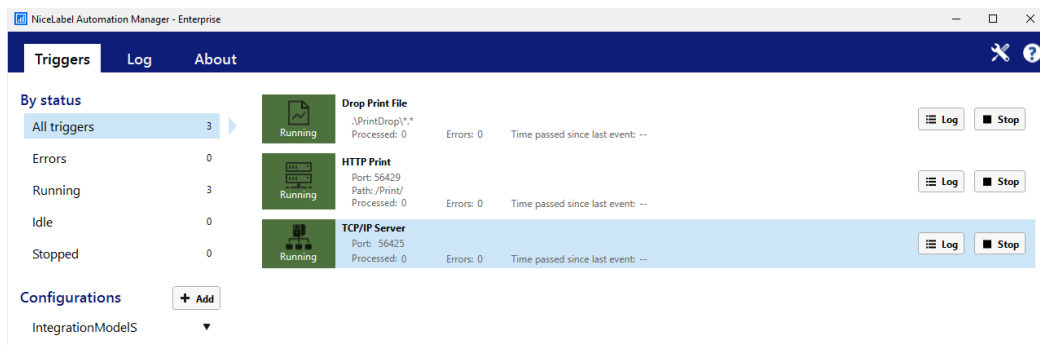


- 3 triggers will now be in Automation Manager. The triggers are not running. Click each *Start* button in turn and the triggers will start.





7. All triggers are now running and you may close Automation Manager.



## Printer drivers

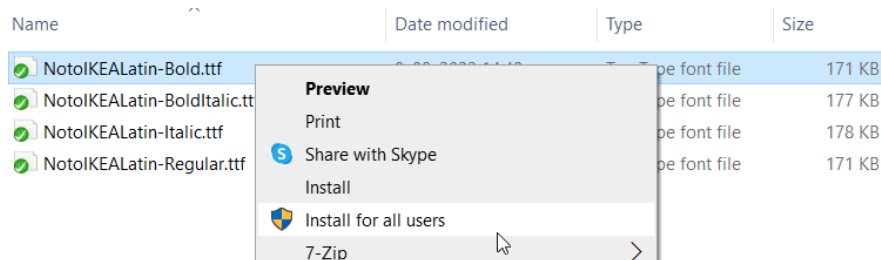
For optimal printing results we are suggesting use of native NiceLabel printer drivers which are available on Loftware webpage <https://www.nicelabel.com/downloads/printer-drivers>.

Instructions for printer driver installations are available here <https://help.nicelabel.com/hc/en-001/articles/4405114809745-Installing-NiceLabel-Printer-Drivers>.

## Installation of Fonts

For correct printing of labels font family Noto IKEA have to be installed on computer where Automation manager is running. Noto IKEA fonts (4 files) are included in Hybrid S download package <https://ikea.onnicelabel.com:8080/Downloads/IkeaGS1ModelS.zip>.

Navigate to folder where you unzip the IkeaGS1ModelS.zip file (suggested location was root of C drive "C:"). Open folder Fonts, select the font file, do right click and select *Install for all users*. Repeat for all 4 files.



# Solution flow description

Supplier will, from their ERP/WMS or any other system used for label printing, provide print request in any of below-mentioned formats. Print request can be sent in different ways (as file drop in certain folder, HTTP request (REST), TCP/IP call). Print request will be sent to Loftware Integration System (NiceLabel Automation application) which will process the request.

Loftware Integration System will according to values in XML or JSON fetch correct data for label from Loftware NiceLabel Cloud database, combine this with label template (taken from Loftware Document Management System in Cloud) and print label to printer defined in in XML/JSON.

Sent request can also have some other settings defined which will help control printing.

## Print request Data Format

There are two predefined data formats possible. XML and JSON.

Both should follow predefined structure with some nodes as mandatory and some optional.

### HEADER:

- PRINT: True or False (Default: True)
- **PRINTER\_NAME\***: Name of the printer you will use to print IKEA labels. It must be installed on the server where Automation trigger is running
- **QUANTITY\***: numeric value between 1 and 9999
- PRINT\_JOB\_NAME: String value describing current print job (Default: "Label name")
- ROTATED: True or False (Default: False)
- VERTICAL\_COUNT: numeric value between 1 and 999 (Default: 1)
- GAP: number between 0 and 99 (Gap not applied to the print if it is not defined)
- MARGINS (TOP, BOTTOM, LEFT and RIGHT): number between 0 and 99
- ORIENTATION: Landscape or Portrait (Default: Landscape)
- PREVIEW: True or False (Default: False)
- PREVIEW\_FORMAT: Options JPEG, PNG or BMP (Default: JPEG)

### DATA:

- **SUPPLIER\_CODE\***: Supplier code
- **DOCNO\***: Document number
- **DOCVERSIONNO\***: Document number
- CPN: Consumer package number in case of CP label type or empty value in case of MP, PI label type
- **DATESTAMP\***: Date stamp in format yyyyMMdd
- **PREFIX\***: string value max 5 chars
- **SUFFIX\***: string value max 5 chars
- SECTION: Options "Complete label", "Datamatrix alone", "Date stamp (YYWW)" and "Label Static content only" (Default: Complete label)
- **USER\***: Name of the user that triggered the job
- DATAMATRIXSIZE: Square or Rectangle in case of 1R20-COA,IDA,NUA or 1R35-COA,IDA,NUA label template and empty for all others. (Default: empty)

\* Mandatory fields are marked **BOLD**

# Sample XML/JSON requests

Sample XML Print action - with all tags	Sample JSON Print action - with all tags
<pre>&lt;?xml version="1.0"?&gt; &lt;LABEL&gt;   &lt;HEADER&gt;     &lt;PRINT&gt;True&lt;/PRINT&gt;     &lt;PRINTER_NAME&gt;ZEBRA ZT410-300dpi ZPL&lt;/PRINTER_NAME&gt;     &lt;QUANTITY&gt;1&lt;/QUANTITY&gt;     &lt;PRINT_JOB_NAME&gt;PrintJob1&lt;/PRINT_JOB_NAME&gt;     &lt;ROTATED&gt;False&lt;/ROTATED&gt;     &lt;VERTICAL_COUNT&gt;1&lt;/VERTICAL_COUNT&gt;     &lt;GAP&gt;5&lt;/GAP&gt;     &lt;MARGINS&gt;       &lt;TOP&gt;0&lt;/TOP&gt;       &lt;BOTTOM&gt;0&lt;/BOTTOM&gt;       &lt;LEFT&gt;0&lt;/LEFT&gt;       &lt;RIGHT&gt;0&lt;/RIGHT&gt;     &lt;/MARGINS&gt;     &lt;ORIENTATION&gt;Landscape&lt;/ORIENTATION&gt;     &lt;PREVIEW&gt;False&lt;/PREVIEW&gt;     &lt;PREVIEW_FORMAT&gt;PNG&lt;/PREVIEW_FORMAT&gt;   &lt;/HEADER&gt;   &lt;DATA&gt;     &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;     &lt;DOCNO&gt;00001&lt;/DOCNO&gt;     &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;     &lt;CPN&gt;1&lt;/CPN&gt;     &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;     &lt;PREFIX&gt;ABC&lt;/PREFIX&gt;     &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;     &lt;SECTION&gt;Complete label&lt;/SECTION&gt;     &lt;USER&gt;User1&lt;/USER&gt;     &lt;DATAMATRIXSIZE&gt;&lt;/DATAMATRIXSIZE&gt;   &lt;/DATA&gt; &lt;/LABEL&gt;</pre>	<pre>{   "LABEL": {     "HEADER": {       "PRINT": "True",       "PRINTER_NAME": "ZEBRA ZT410-300dpi ZPL",       "QUANTITY": "1",       "PRINT_JOB_NAME": "PrintJob1",       "ROTATED": "False",       "VERTICAL_COUNT": "1",       "GAP": 5,       "MARGINS": {         "TOP": 0,         "BOTTOM": 0,         "LEFT": 0,         "RIGHT": 0       }     },     "ORIENTATION": "Landscape",     "PREVIEW": "False",     "PREVIEW_FORMAT": "PNG"   },   "DATA": {     "SUPPLIER_CODE": "00000",     "DOCNO": "00001",     "DOCVERSIONNO": 1,     "CPN": "1",     "DATESTAMP": "20221020",     "PREFIX": "ABC",     "SUFFIX": "123",     "SECTION": "Complete label",     "USER": "User1",     "DATAMATRIXSIZE": ""   } }</pre>

Sample XML Print action - required tags only (label type: MP and PI)	Sample JSON Print action - required tags only (label type: MP and PI)
<pre>&lt;?xml version="1.0"?&gt; &lt;LABEL&gt;   &lt;HEADER&gt;     &lt;PRINTER_NAME&gt;ZEBRA ZT410-300dpi ZPL&lt;/PRINTER_NAME&gt;     &lt;QUANTITY&gt;1&lt;/QUANTITY&gt;   &lt;/HEADER&gt;   &lt;DATA&gt;     &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;     &lt;DOCNO&gt;00001&lt;/DOCNO&gt;     &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;     &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;     &lt;PREFIX&gt;ABC&lt;/PREFIX&gt;     &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;     &lt;USER&gt;User1&lt;/USER&gt;   &lt;/DATA&gt; &lt;/LABEL&gt;</pre>	<pre>{   "LABEL": {     "HEADER": {       "PRINTER_NAME": "ZEBRA ZT410-300dpi ZPL",       "QUANTITY": "1"     },     "DATA": {       "SUPPLIER_CODE": "00000",       "DOCNO": "00001",       "DOCVERSIONNO": 1,       "DATESTAMP": "20221020",       "PREFIX": "ABC",       "SUFFIX": "123",       "USER": "User1"     }   } }</pre>

Sample XML Print action - required tags only (label type: CP)	Sample JSON Print action - required tags only (label type: CP)
<pre>&lt;?xml version="1.0"?&gt; &lt;LABEL&gt;   &lt;HEADER&gt;     &lt;PRINTER_NAME&gt;ZEBRA ZT410-300dpi ZPL&lt;/PRINTER_NAME&gt;     &lt;QUANTITY&gt;1&lt;/QUANTITY&gt;   &lt;/HEADER&gt;   &lt;DATA&gt;     &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;     &lt;DOCNO&gt;00001&lt;/DOCNO&gt;     &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;     &lt;CPN&gt;00001&lt;/CPN&gt;     &lt;DATAMATRIXSIZE&gt;Square&lt;/DATAMATRIXSIZE&gt; *if label 1R35-     COA,IDA,NUA or 1R20-COA,IDA,NUA     &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;     &lt;PREFIX&gt;ABC&lt;/PREFIX&gt;     &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;     &lt;USER&gt;User1&lt;/USER&gt;   &lt;/DATA&gt; &lt;/LABEL&gt;</pre>	<pre>{   "LABEL": {     "HEADER": {       "PRINTER_NAME": "ZEBRA ZT410-300dpi ZPL",       "QUANTITY": "1"     },     "DATA": {       "SUPPLIER_CODE": "00000",       "DOCNO": "00001",       "DOCVERSIONNO": 1,       "CPN": "1",       "DATAMATRIXSIZE": "Square",       "DATESTAMP": "20221020",       "PREFIX": "ABC",       "SUFFIX": "123",       "USER": "User1"     }   } }</pre>

Sample XML Print action - mixed tags	Sample JSON Print action - mixed tags
<pre>&lt;?xml version="1.0"?&gt; &lt;LABEL&gt;   &lt;HEADER&gt;     &lt;PRINT&gt;True&lt;/PRINT&gt;     &lt;PRINTER_NAME&gt;ZEBRA ZT410-300dpi ZPL&lt;/PRINTER_NAME&gt;     &lt;QUANTITY&gt;1&lt;/QUANTITY&gt;   &lt;/HEADER&gt;   &lt;DATA&gt;     &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;     &lt;DOCNO&gt;00001&lt;/DOCNO&gt;     &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;     &lt;CPN&gt;00001&lt;/CPN&gt;     &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;     &lt;PREFIX&gt;ABC&lt;/PREFIX&gt;     &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;     &lt;USER&gt;User1&lt;/USER&gt;   &lt;/DATA&gt; &lt;/LABEL&gt;</pre>	<pre>{   "LABEL": {     "HEADER": {       "PRINT": "True",       "PRINTER_NAME": "ZEBRA ZT410-300dpi ZPL",       "QUANTITY": "1",     },     "DATA": {       "SUPPLIER_CODE": "00000",       "DOCNO": "00001",       "DOCVERSIONNO": 1,       "CPN": "1",       "DATESTAMP": "20221020",       "PREFIX": "ABC",       "SUFFIX": "123",       "USER": "User1"     }   } }</pre>



<pre> &lt;PRINT_JOB_NAME&gt;MyLabelPrint&lt;/PRINT_JOB_NAME&gt; &lt;VERTICAL_COUNT&gt;4&lt;/VERTICAL_COUNT&gt; &lt;GAP&gt;5&lt;/GAP&gt; &lt;ORIENTATION&gt;Portrait&lt;/ORIENTATION&gt; &lt;/HEADER&gt; &lt;DATA&gt;   &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;   &lt;DOCNO&gt;00001&lt;/DOCNO&gt;   &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;   &lt;CPN&gt;2&lt;/CPN&gt;   &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;   &lt;PREFIX&gt;&lt;/PREFIX&gt;   &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;   &lt;SECTION&gt;Datamatrix alone&lt;/SECTION&gt;   &lt;USER&gt;User1&lt;/USER&gt; &lt;/DATA&gt; &lt;/LABEL&gt; </pre>	<pre> "PRINT_JOB_NAME": "MyLabelPrint", "VERTICAL_COUNT": "4", "GAP": 5, "ORIENTATION": "Portrait" }, "DATA":{   "SUPPLIER_CODE": "00000",   "DOCNO": "00001",   "DOCVERSIONNO": 1,   "CPN": "2",   "DATESTAMP": "20221020",   "PREFIX": "",   "SUFFIX": "123",   "SECTION": "Datamatrix alone",   "USER": "User1" } } </pre>
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Sample XML Preview action	Sample JSON Preview action
<pre> &lt;?xml version="1.0"?&gt; &lt;LABEL&gt;   &lt;HEADER&gt;     &lt;PRINT&gt;False&lt;/PRINT&gt;     &lt;QUANTITY&gt;1&lt;/QUANTITY&gt;     &lt;PREVIEW&gt;True&lt;/PREVIEW&gt;     &lt;PREVIEW_FORMAT&gt;PNG&lt;/PREVIEW_FORMAT&gt;   &lt;/HEADER&gt;   &lt;DATA&gt;     &lt;SUPPLIER_CODE&gt;00000&lt;/SUPPLIER_CODE&gt;     &lt;DOCNO&gt;00001&lt;/DOCNO&gt;     &lt;DOCVERSIONNO&gt;1&lt;/DOCVERSIONNO&gt;     &lt;CPN&gt;1&lt;/CPN&gt;     &lt;DATESTAMP&gt;20221020&lt;/DATESTAMP&gt;     &lt;PREFIX&gt;ABC&lt;/PREFIX&gt;     &lt;SUFFIX&gt;123&lt;/SUFFIX&gt;     &lt;USER&gt;User1&lt;/USER&gt;   &lt;/DATA&gt; &lt;/LABEL&gt; </pre>	<pre> {   "LABEL": {     "HEADER": {       "PRINT": "False",       "QUANTITY": "1",       "PREVIEW": "True",       "PREVIEW_FORMAT": "PNG"     },     "DATA": {       "SUPPLIER_CODE": "00000",       "DOCNO": "00001",       "DOCVERSIONNO": 1,       "CPN": "1",       "DATESTAMP": "20221020",       "PREFIX": "ABC",       "SUFFIX": "123",       "USER": "User1"     }   } } </pre>

## Submitting the print request

1. Supplier has three options to trigger a print request **"HTTP"**, **"File drop"** or **"TCP/IP"**  
 All printing logic is contained within "HTTP Print" trigger. If print is triggered using "File Drop" or "TCP/IP" request is simply internally forwarded to HTTP print trigger. Since all logic is contained in HTTP Print trigger it should always be active.
  - To trigger a print using HTTP make a request to [http://\[YourServerAddress\]:56429/Print](http://[YourServerAddress]:56429/Print)
  - To trigger a print using TCP/IP make a request to `[YourServerAddress]:56425`
  - To trigger a print using File drop, drop a file in folder *"PrintDrop"* next to automation configuration file
  
2. If a Print job is triggered with XML format than also the response is returned in XML format, if it is triggered with Json formatted text response is also in Json.
  - Status can be OK or ERROR.
  - Message contains error description in case of Status "ERROR"
  - Preview tag contains Base64 encoded preview if it was requested and in preview format that was specified in the request.

XML response:

```

<Response>
  <Status>OK</Status>
  <Message></Message>
  <Preview></Preview>
</Response>

```

JSON response:

```
{
```

```
"Response": {  
  "Status": "OK",  
  "Message": "",  
  "Preview": ""  
}
```

3. If a request doesn't contain a request body in XML or JSON an error is returned in plain text with no formatting.
4. Preview functionality is only supported when using HTTP.



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