

LBS4 Order Administration

Electronic Invoices

XML Format Specification



OCLC™

The world's libraries.
Connected.

Table of Contents

References	3
Introduction	3
Description of the XML format	3
Main structure of the XML file	3
Description of the (required) fields	4
Character set	7
Appendix: Example XML file	8
Support	9

References

Graham, Ian S. and Liam Quin. *XML Specification Guide*. New York: Wiley, 1999.

Introduction

Several libraries would like to be able to enter invoices, delivered electronically by one or more of their suppliers, directly into LBS4. As there can be different suppliers of electronic invoices, possibly using different standards, a generic solution is called for. This document describes the standard XML format for those invoices. If they are supplied in this format, OCLC will guarantee that the invoices can be imported directly into the LBS4 database, using an offline program. This program will be developed in LBS4 version 2.8.1.

Description of the XML format

This section describes in detail the specifications that a file with invoices should comply to. The XML format has many possibilities; however for the LBS4 invoices we will use only a very limited set. Not surprisingly, the structure described below is very similar to the database structure of the invoices in LBS4. Note that this database structure has changed in the past years, because of the collective invoices: an invoice is now divided into a **HEADER** and one or more **LINES**. We will follow this convention.

Main structure of the XML file

Many XML files start with a so-called prolog, the XML declaration; see the first chapter of the *XML Specification Guide*. This is a line starting with `<?xml version="1.0"`, optionally followed by more information, and ending with `?>`. We will support files that include this line, but in this document we will ignore most of it as we are only concerned with the data in the XML invoice file. However, there is one exception: the character set in which the XML file is encoded, should be specified in the first line of the file, e.g. `encoding="UTF-8"`. For more details, see the *Character set* chapter below.

The first XML tag that is relevant for LBS4 should be: `<invoices>`. The structure from then on should be as follows (line breaks and indentation are added here for readability, they do not have to be included):

XML FILE STRUCTURE	
XML TAG	EXPLANATION
<code><invoices></code>	<code><invoices></code>
<code> <number_of_invoices></number_of_invoices></code>	<code> <number_of_invoices></code>
<code> <invoice></code>	START INVOICE #1
<code><header></code>	Start HEADER
<code><sequence_nr></sequence_nr></code>	HEADER field sequence_nr
<code><supplier_code></supplier_code></code>	HEADER field supplier_code
<code><invoice_number></invoice_number></code>	HEADER field invoice_number
<code><invoice_date></invoice_date></code>	HEADER field invoice_date
<code><currency_code></currency_code></code>	HEADER field currency_code
<code>...</code>	...
<code></header></code>	End HEADER

XML FILE STRUCTURE

XML TAG	EXPLANATION
<code><number_of_lines></number_of_lines></code>	<code><number_of_lines></code>
<code><line></code>	Start LINE #1
<code><order_id_nr></order_id_nr></code>	line #1 field order_id_nr
<code><amount></amount></code>	line #1 field amount
<code>...</code>	...
<code></line></code>	End LINE #1
<code><line></code>	Start LINE #2
<code>...</code>	...
<code></line></code>	End LINE #2
<code></invoice></code>	END INVOICE #1
<code><invoice></code>	START INVOICE #2
<code><header></code>	Start HEADER
<code>...</code>	...
<code></header></code>	End HEADER
<code><number_of_lines></number_of_lines></code>	<code><number_of_lines></code>
<code><line></code>	Start LINE #1
<code>...</code>	...
<code></line></code>	End LINE #1
<code>...</code>	...
<code></invoice></code>	END INVOICE #2
<code>...</code>	
<code></invoices></code>	<code></invoices></code>

So, the XML file may contain one or more invoices, each invoice consists of exactly one **HEADER** and one or more **LINES**. The fields that should be part of the invoice **HEADER** and the invoice **LINES** are described in the "Description of the (required) fields" section below. Note that the first invoice in the file is preceded by an XML tag `<number_of_invoices>`, which should contain the number of invoices that are included. If this value does not match the actual number of invoices in the file, neither of the invoices will be processed! Similarly, the first line of each invoice is preceded by `<number_of_lines>`, this number should be the same as the actual number of lines of the invoice, or otherwise the invoice will not be processed!

Description of the (required) fields

In LBS4, a large amount of information about an invoice can be stored in the database. Many fields are required and therefore either have to be present, and filled with data, in the XML file or should be provided with a default value by the software that processes the file. The latter category is not relevant for the supplier and describing these fields is beyond the scope of this document. In this section, the complete list of invoice data that should be included in the XML file is given, each with a short description or explanation what kind of information it should contain.

In the **HEADER** of the invoice, the following fields are supported by LBS4 and required unless specified otherwise:

INVOICE HEADER		
FIELD	R O*	DESCRIPTION
sequence_nr	R	A sequence number to indicate the sequence of the invoice in the input file, the first invoice has sequence number 1, the second 2, etc. In case of errors, this number can be used for reference by the software that processes the file.
supplier_code	R	Seven characters or less, defining uniquely the supplier in LBS4. This corresponds to a code of a supplier already existing in the database. If this <code>supplier_code</code> is not known, the field can be left blank and the next field <code>ean_code</code> must be specified:
ean_code	[R]	The unique trade number of the supplier. This should correspond to a code already existing in the database. If the <code>ean_code</code> is not known, this field should be filled with the value 0.
invoice_number	R	The unique number of the invoice as registered and communicated by the supplier. If the <code>invoice_number</code> is not known, this field can be left blank. Either this field or the next <code>invoice_date</code> field needs to be filled with data:
invoice_date	[R]	The date of the invoice, specified in the format yyyy-mm-ddT12:00:00Z. If the <code>invoice_date</code> is not known, this field can be left blank.
currency_code	R	The ISO standard currency code that the invoice is registered in. All the amounts on the invoice are supposed to be specified in this currency.
pay_by_date	R	The date by which the invoice should be paid, specified in the format yyyy-mm-ddT12:00:00Z. Can be left blank if unknown.
reduction_percentage	R	The reduction percentage on the amount of the invoice. Should be filled with a value from 0.00 to 100.00. If the <code>reduction_percentage</code> is not known, this field should be filled with the value 0.00.
vat	R	A character that indicates whether VAT is included. Three possible values: <ul style="list-style-type: none"> ▪ i (invoice includes VAT) ▪ e (VAT excluded) ▪ n (no VAT applicable)
vat_percentage	R	The VAT percentage for the entire invoice. For each invoice line, an optional separate value can be entered, see the two fields below. This field should be filled with a value from 0.00 to 100.
tax_eu_percentage	O	An optional extra tax percentage for deliveries from within the European Union. Should be filled with a value from 0.00 to 100.00 (or left blank).
tax_non_eu_percentage	O	An optional extra tax percentage for deliveries from outside the European Union. Should be filled with a value from 0.00 to 100.00 (or left blank).

* R Required | O Optional

In a **LINE** of the invoice, corresponding to an actual invoice line, the following fields are supported, and required unless specified otherwise:

INVOICE LINE		
FIELD	R O*	DESCRIPTION
order_id_nr	R	The unique number of the order, as supplied by the library, that the invoice line belongs to. Invoices that are not attached to any order are not (yet) supported by the offline process.
delivery_id_nr	O	The unique number of the delivery, as supplied by the library, that the invoice line belongs to. If the <code>delivery_id_nr</code> is not provided, the system will determine the appropriate delivery of the order. If there is more than one candidate it will select the delivery that does not have the indication <i>invoices complete</i> checked. In case of more than one such delivery (or none), the invoice will be rejected.
invoiced_amount	R	The amount of the line, a number specified in the currency of the invoice (<code>currency_code</code> in the invoice header).
costs	O	Optional costs charged on this invoice line, a number specified in the currency of the invoice. If the <code>costs</code> are not applicable, this field should be filled with the value 0.00.
extra_costs	O	Optional extra costs charged on this invoice line, a number specified in the currency of the invoice. If the <code>extra_costs</code> are not applicable, this field should be filled with the value 0.00.
description	O	Optional description/explanation on this invoice line, maximum 255 characters.
reduction_percentage_line	O	Optional reduction percentage on this specific invoice line. Should be filled with a value from 0.00 to 100.00. If left blank, the reduction percentage for the entire invoice, as specified in the invoice header, applies.
vat_percentage_line	O	Optional VAT percentage for invoice line. Should be filled with a value from 0.00 to 100.00. If left blank, the VAT percentage for the entire invoice applies.
original_amount	O	The, optional, original price of the order. If the <code>original_amount</code> is not applicable, this field should be filled with the value 0.00.

* R Required | O Optional

Character set

Special attention should be given to character references in the data of the invoice. For example, characters that have special meaning in XML, such as <, > and &, have to be “escaped” and represented as their so-called character reference. This is a sequence of a prefix &# combined with a unique number for each character in Unicode. For more information, see the *XML Specification Guide*, section 3.1 and appendix B. Also for diacritics such as ã, ê, ö, etc. these character references are recommended. It is for this reason, that the character set in which the XML file is encoded, should be specified in the first line of the file.

Appendix: Example XML file

For better readability of this example XML file, the values are marked with a background colour.

```
<?xml version="1.0" encoding="UTF-8" ?>
<invoices>
  <number_of_invoices>1</number_of_invoices>
  <invoice>
    <header>
      <sequence_nr>1</sequence_nr>
      <supplier_code>test</supplier_code>
      <ean_code>1234</ean_code>
      <invoice_number>IV0903117</invoice_number>
      <invoice_date>2009-03-31T00:00:00Z</invoice_date>
      <currency_code>eur</currency_code>
      <pay_by_date>2009-05-31T00:00:00Z</pay_by_date>
      <reduction_percentage>12.5</reduction_percentage>
      <vat>i</vat>
      <vat_percentage>19.00</vat_percentage>
      <tax_eu_percentage>0.00</tax_eu_percentage>
      <tax_non_eu_percentage>0.00</tax_non_eu_percentage>
    </header>
    <number_of_lines>3</number_of_lines>
    <line>
      <order_id_nr>09000131</order_id_nr>
      <delivery_id_nr></delivery_id_nr>
      <invoiced_amount>12.00</invoiced_amount>
      <costs>0.00</costs>
      <extra_costs>0.00</extra_costs>
      <description></description>
      <reduction_percentage_line></reduction_percentage_line>
      <vat_percentage_line></vat_percentage_line>
      <original_amount>9.99</original_amount>
    </line>
    <line>
      <order_id_nr>09000167</order_id_nr>
      <delivery_id_nr>09000188</delivery_id_nr>
      <invoiced_amount>11.95</invoiced_amount>
      <costs>3.50</costs>
      <extra_costs>0.00</extra_costs>
      <description>this order comes with additional costs</description>
      <reduction_percentage_line></reduction_percentage_line>
      <vat_percentage_line></vat_percentage_line>
      <original_amount>9.99</original_amount>
    </line>
    <line>
      <order_id_nr>08001578</order_id_nr>
      <delivery_id_nr></delivery_id_nr>
      <invoiced_amount>55</invoiced_amount>
      <costs>0.00</costs>
      <extra_costs>0.00</extra_costs>
      <description>this title is available again</description>
      <reduction_percentage_line></reduction_percentage_line>
      <vat_percentage_line></vat_percentage_line>
      <original_amount>9.99</original_amount>
    </line>
  </invoice>
</invoices>
```


Support

For support enquiries in the Netherlands, Belgium and Luxembourg, please contact the Service desk:

E support-nl@oclc.org

T +31-(0)71-524 66 00

F +31-(0)71-522 31 19

P P.O. Box 876, 2300 AW, Leiden, Netherlands

Support is available from Monday through Friday, between 08:30 and 17:00 hrs.

**This document was created August, 2009 and updated in May, 2010.
Version 1.1**



The following OCLC product, service and business names are trademarks or service marks of OCLC, Inc.: OCLC and WorldCat. In addition, the OCLC symbol and "The World's Libraries. Connected." are service marks of OCLC. LBS is a trademark of OCLC B.V.
Third-party product and service names are trademarks or service marks of their respective owners.
OCLC grants permission to photocopy this publication as needed.

Product Code
LBS4_ACQ_Electronic
Invoices
0908/, OCLC B.V.