edeposit.amqp.aleph

Vydání 1.9.5

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Obsah

This module is used to read and export metadata about epublications to/from Aleph.

Module is developed as part of the e-deposit project.

Module API

1.1 aleph package

1.1.1 Query workflow

AQMP is handled by edeposit.amqp module, this package provides just datastructures and *reactToAMQPMessage()* function, which is used in daemon to translate highlevel requests to lowlevel queries to Aleph's webapi.

AMQP query

To query Aleph thru AMQP, run `edeposit_amqp_alephdaemon` (from `edeposit.amqp` package) and create one of the Queries - *ISBNQuery* for example and put it into *SearchRequest* wrapper and send the message to the Aleph's exchange:

```
request = SearchRequest(
    ISBNQuery("80-251-0225-4")
)

amqp.send(  # you can use pika library to send data to AMQP queue
    message    = serialize(request),
    properties = "..",
    exchange   = "ALEPH'S_EXCHANGE"
)
```

and you will get back AMQP message with *SearchResult*.

Poznámka: You don't have to import all structures from *datastructures*, they should be automatically imported and made global in `__init__.py`.

Count requests

If you want to just get count of how many items is there in Aleph, just wrap the *ISBNQuery* with *CountRequest* class:

```
isbnq = ISBNQuery("80-251-0225-4")
request = CountRequest(isbnq)

# rest is same..
```

and you will get back *CountResult*.

Poznámka: You should always use *CountRequest* instead of just calling `len()` to *SearchResult.records* - it doesn't put that much load to Aleph. Also Aleph is restricted to 150 requests per second.

Direct queries

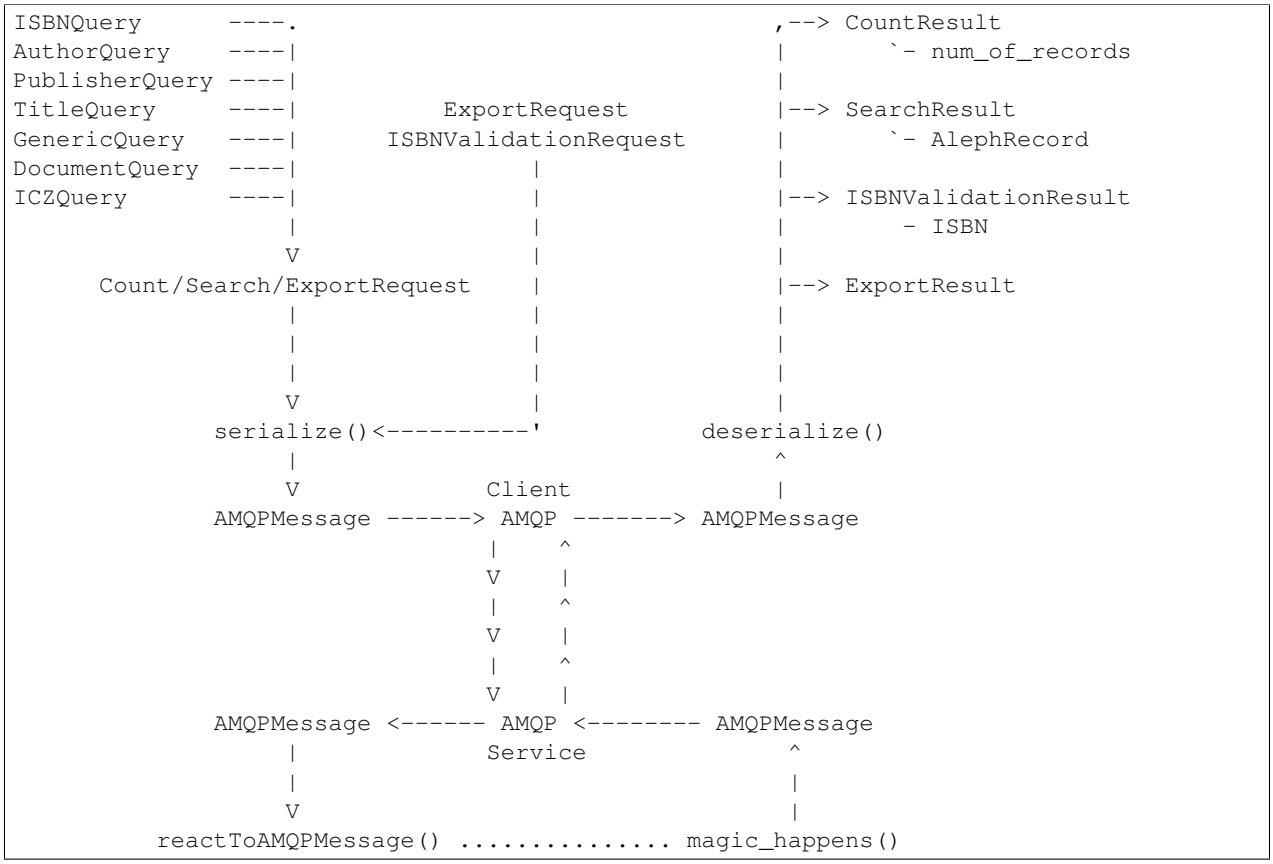
As I said, this module provides only direct access to Aleph, AMQP communication is handled in `edeposit.amqp`.

If you want to access module directly, you can use *reactToAMQPMessage()* wrapper, or query *aleph* submodule directly.

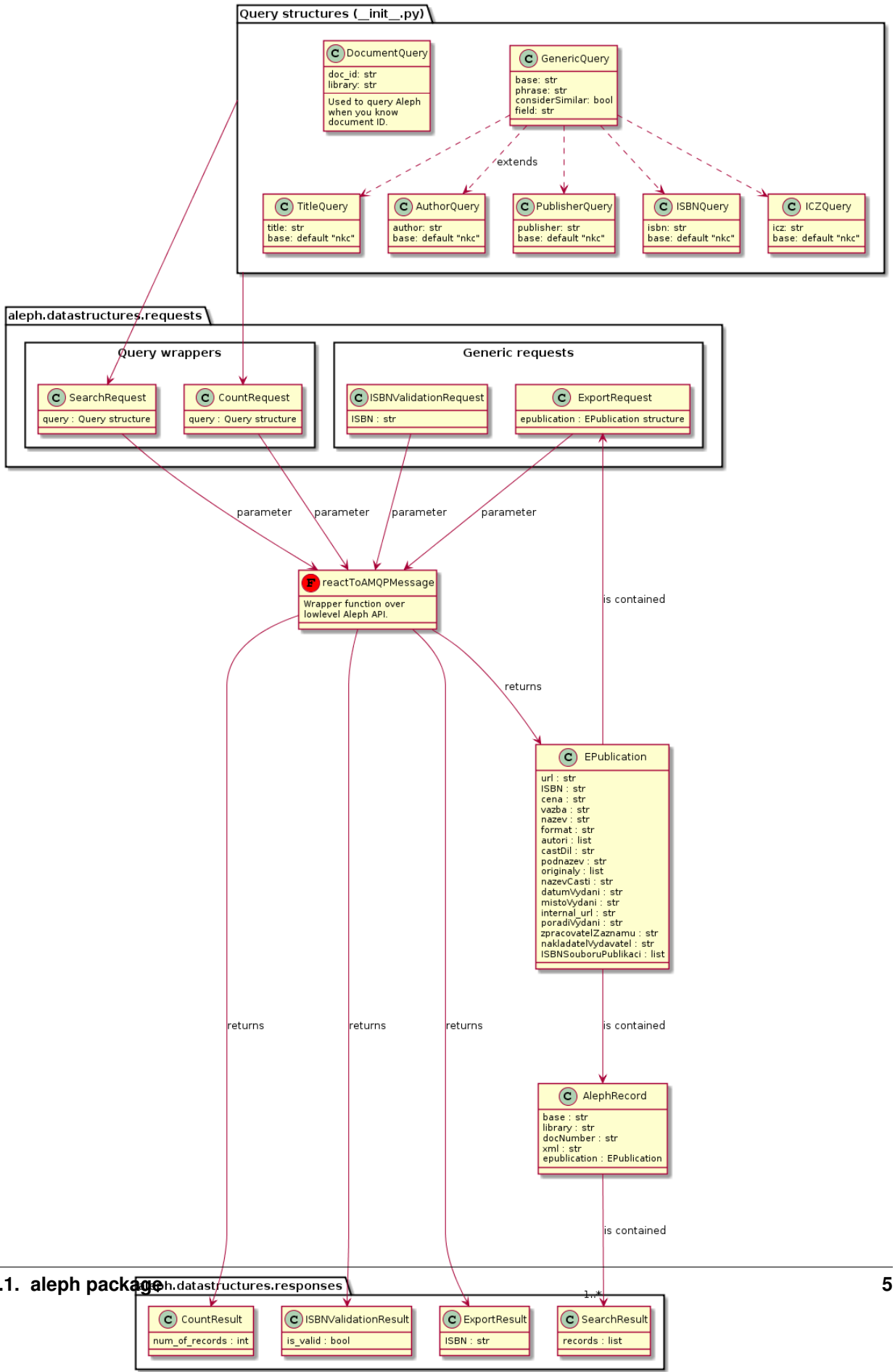
reactToAMQPMessage() is preferred, because in that case, you don't have to deal with Aleph lowlevel API, which can be little bit annoying.

Diagrams

Here is ASCII flow diagram for you:



and here is (pseudo) UML:


Query structures (__init__.py)
DocumentQuery
doc_id: str
library: str
Used to query Aleph when you know document ID.
GenericQuery
base: str
phrase: str
considerSimilar: bool
field: str
extends
TitleQuery
title: str
base: default "nkc"
AuthorQuery
author: str
base: default "nkc"
PublisherQuery
publisher: str
base: default "nkc"
ISBNQuery
isbn: str
base: default "nkc"
ICZQuery
icz: str
base: default "nkc"
aleph.datastructures.requests
Query wrappers
SearchRequest
query : Query structure
CountRequest
query : Query structure
Generic requests
ISBNValidationRequest
ISBN : str
ExportRequest
epublication : EPublication structure
parameter
parameter
parameter
parameter
reactToAMQPMessage
Wrapper function over lowlevel Aleph API.
is contained
returns
EPublication
url : str
ISBN : str
cena : str
vazba : str
nazev : str
format : str
autori : list
castDil : str
podnazev : str
originaly : list
nazevCasti : str
datumVydani : str
mistoVydani : str
internal_url : str
poradiVydani : str
zpracovatelZaznamu : str
nakladatelVydavatel : str
ISBNSouboruPublikaci : list
returns
returns
returns
is contained
AlephRecord
base : str
library : str
docNumber : str
xml : str
epublication : EPublication
is contained
aleph.datastructures.responses
1..*
CountResult
num_of_records : int
ISBNValidationResult
is_valid : bool
ExportResult
ISBN : str
SearchResult
records : list

Neat, isn't it?

API

class aleph.**GenericQuery**
Nadtřídy: *aleph.GenericQuery*, aleph._QueryTemplate

Used for generic queries to Aleph.

Parametry

- **base** (*str*) – Which base in Aleph will be queried. This depends on settings of your server. See *aleph.getListOfBases()* for details.
- **phrase** (*str*) – What are you looking for.
- **considerSimilar** (*bool*) – Don't use this, it usually doesn't work.
- **field** (*str*) – Which field you want to use for search. See *aleph.VALID_ALEPH_FIELDS* for list of valid bases.

For details of base/phrase/.. parameters, see *aleph.searchInAleph()*. All parameters also serves as properties.

This is used mainly if you want to search by your own parameters and don't want to use prepared wrappers (*AuthorQuery*/*ISBNQuery*/..).

class aleph.**DocumentQuery**
Nadtřídy: *aleph.DocumentQuery*

Query Aleph when you know the Document ID.

Parametry

- **doc_id** (*str*) – ID number as string.
- **library** (*str, default settings.DEFAULT_LIBRARY*) – Library.

getSearchResult()

Vrací SearchResult document with given *doc_id*.

Typ návratové hodnoty object

Raises *aleph.DocumentNotFoundException* – When document is not found.

getCountResult()

Vrací 0/1 whether the document is found or not.

Typ návratové hodnoty int

class aleph.**ISBNQuery**
Nadtřídy: *aleph.ISBNQuery*, aleph._QueryTemplate

Used to query Aleph to get books by ISBN.

Parametry

- **ISBN** (*str*) – ISBN 10/13.
- **base** (*str, optional*) – If not set, *settings.ALEPH_DEFAULT_BASE* is used.

Poznámka: ISBN is not unique, so you can get back lot of books with same ISBN. Some books also have two or more ISBNs.

---

class aleph.**AuthorQuery**
Nadtřídy: *aleph.AuthorQuery*, aleph._QueryTemplate

Used to query Aleph to get books by Author.

Parametry

- **author** (*str*) – Author's name/lastname in UTF-8.
- **base** (*str, optional*) – If not set, *settings.ALEPH_DEFAULT_BASE* is used.

class aleph.**PublisherQuery**
Nadtřídy: *aleph.PublisherQuery*, aleph._QueryTemplate

Used to query Aleph to get books by Publisher.

Parametry

- **publisher** (*str*) – Publisher's name in UTF-8.
- **base** (*str, optional*) – If not set, *settings.ALEPH_DEFAULT_BASE* is used.

class aleph.**TitleQuery**
Nadtřídy: aleph._QueryTemplate, *aleph.TitleQuery*

Used to query Aleph to get books by book's title/name.

Parametry

- **title** (*str*) – Book's title in UTF-8.
- **base** (*str, optional*) – If not set, *settings.ALEPH_DEFAULT_BASE* is used.

class aleph.**ICZQuery**
Nadtřídy: aleph._QueryTemplate, *aleph.ICZQuery*

Used to query Aleph to get books by record's identification number *icz*.

Parametry

- **icz** (*str*) – Identification number (nkc20150003029 for example).
- **base** (*str, optional*) – If not set, *settings.ALEPH_DEFAULT_BASE* is used.

aleph.**reactToAMQPMessage**(*req*, *send_back*)
React to given (AMQP) message.

This function is used by edeposit.amqp.alephdaemon. It works as highlevel wrapper for whole module.

Example

```
>>> import aleph
```

```
>>> request = aleph.SearchRequest(
...     aleph.ISBNQuery("80-251-0225-4")
... )
>>> request
SearchRequest(query=ISBNQuery(ISBN='80-251-0225-4', base='nkc'))
```

```
>>> response = aleph.reactToAMQPMessage(request, None)
```

```
>>> response  # formated by hand for purposes of example
SearchResult(
    records=[
        AlephRecord(
            base='nkc',
            library='NKC01',
            docNumber=1492461,
            xml='HERE IS WHOLE MARC OAI RECORD',
            epublication=EPublication(
                ISBN=['80-251-0225-4'],
                nazev='Umění programování v UNIXu /',
                podnazev='',
                vazba='(brož.) :',
                cena='Kč 590,00',
                castDil='',
                nazevCasti='',
                nakladatelVydavatel='Computer Press,',
                datumVydani='2004',
                poradiVydani='1. vyd.',
                zpracovatelZaznamu='BOA001',
                format='23 cm',
                url='',
                mistoVydani='Brno :',
                ISBNSouboruPublikaci=[],
                autori=[
                    Author(
                        firstName='Eric S.',
                        lastName='Raymond',
                        title=''
                    )
                ],
                originaly=[
                    'Art of UNIX programming'
                ],
                internal_url=''
            )
        )
    ]
)
```

Parametry

- **req** (*Request class*) – Any of the Request class from *aleph.datastructures.requests*.
- **send_back** (*fn reference*) – Reference to function for responding. This is useful for progress monitoring for example. Function takes one parameter, which may be response structure/namedtuple, or string or whatever would be normally returned.

Vrací Result of search in Aleph. See *aleph.datastructures.results* submodule.

Typ návratové hodnoty Result class

Raises `ValueError` – If bad type of *req* structure is given.

1.1.2 Submodules

Aleph lowlevel API

Aleph X-Service wrapper.

This module allows you to query Aleph's X-Services module (Aleph server is defined by *aleph.settings.ALEPH_URL* in *settings.py*).

There are two levels of abstraction.

Lowlevel

You can use this functions to access Aleph:

```
searchInAleph(base, phrase, considerSimilar, field)
downloadRecords(search_result, [from_doc])
getDocumentIDs(aleph_search_result, [number_of_docs])
downloadMARCXML(doc_id, library)
downloadMARCOAI(doc_id, base)
```

Workflow Aleph works in strange way, that he won't allow you to access desired information directly.

You have to create search request by calling *searchInAleph()* first, which will return dictionary with few important informations about session.

This dictionary can be later used as parameter to *getDocumentIDs()* function, which will give you list of *DocumentID* named tuples.

Poznámka: `namedtuple()` is used, because to access your document, you don't need just *document ID* number, but also *library ID* string.

Depending on your system, there may be just only one accessible library, or multiple ones, and then you will be glad, that you get both of this informations together.

DocumentID can be used as parameter to *downloadMARCXML()*.

Lets look at some code:

```
ids = getDocumentIDs(searchInAleph("nkc", "test", False, "wrd"))
for id_num, library in ids:
    XML = downloadMARCXML(id_num, library)

    # processDocument(XML)
```

High-level

XML wrappers This wrappers returns full XML records from Aleph:

- *getISBNsXML()*
- *getAuthorsBooksXML()*
- *getPublishersBooksXML()*
- *getBooksTitleXML()*
- *getICZBooksXML()*

ID wrappers There are wrappers, which returns ID's of matching document in Aleph:

- *getISBNsIDs()*
- *getAuthorsBooksIDs()*
- *getPublishersBooksIDs()*
- *getBooksTitleIDs()*
- *getICZBooksIDs()*

You can theh download them using *downloadMARCXML()* or *downloadMARCOAI()*.

Count wrappers Count wrappers returns just the number of records with given parameters are there in aleph.

- *getISBNCount()*
- *getAuthorsBooksCount()*
- *getPublishersBooksCount()*
- *getBooksTitleCount()*
- *getICZBooksCount()*

Poznámka: Counting functions are by one request faster than just counting results from standard getters. It is preferred to use them to reduce load to Aleph.

Other noteworthy properties

List of valid bases can be obtained by calling *getListOfBases()*, which returns list of strings.

There is also defined exception tree - see *AlephException* doc-string for details.

aleph.aleph.**VALID_ALEPH_FIELDS = ['wrd', 'wtl', 'wau', 'wkw', 'txt', 'wpb', 'wpp', 'wyr', 'ssn', 'sbn', 'isn', 'ob', 'wpf'**

- `wrd` - Všechny údaje [*All fields*]
- `wtl` - Název [*Title/name of the book*]
- `wau` - Autor (osoba, korporace) [*Author (person, corporation)*]
- `wkw` - Předmět (klíčová slova) [*Subject (keywords)*]
- `txt` - Slova z obsahu (table of cont.) [*Words from table of content*]
- `wpb` - Nakladatel [*Publisher*]
- `wpp` - Místo vydání [*Place of publication*]
- `wyr` - Rok vydání [*Year of publication*]
- `ssn` - ISSN
- `sbn` - ISBN / ISMN
- `isn` - ISBN / ISMN / ISSN
- `ob` - Obsazení (hudební díla) [*Cast (musical works)*]
- `wpf` - Periodicita [*Periodicity*]
- `wpv` - Kód země vydání [*Country code*]
- `wln` - Kód jazyka dokumentu [*Language code*]

- `wlo` - Kód jazyka originálu [*Lanugage code of original*]
- `wtp` - Druh dokumentu [*Type of document*]
- `sg` - Signatura [*Signature*]
- `bar` - Čárový kód [*Barcode*]
- `cnb` - Číslo národní bibl. [*Number of national bibl.*]
- `icz` - Identifikační číslo [*Identification number*]
- `sys` - Systémové číslo [*System number*]
- `wpk`

exception `aleph.aleph.`**`AlephException`**(*message*)

Exception tree:

```
- AlephException
  |- InvalidAlephBaseException
  |- InvalidAlephFieldException
  |- LibraryNotFoundException
  `- DocumentNotFoundException
```

exception `aleph.aleph.`**`InvalidAlephBaseException`**(*message*)

exception `aleph.aleph.`**`InvalidAlephFieldException`**(*message*)

exception `aleph.aleph.`**`LibraryNotFoundException`**(*message*)

exception `aleph.aleph.`**`DocumentNotFoundException`**(*message*)

class `aleph.aleph.`**`DocumentID`**

This structure is used to store *"pointer"* to document in aleph.

`id`

int – ID of document.

`library`

str – This can be different for each document, depend on your system.

`base`

str – Default "`nkc`", but really depends on what bases you have defined in your Aleph server.

`aleph.aleph.`**`getListOfBases`**()

This function is here mainly for purposes of unittest

Vrací Valid bases as they are used as URL parameters in links at Aleph main page.

Typ návratové hodnoty list of str

`aleph.aleph.`**`searchInAleph`**(*base*, *phrase*, *considerSimilar*, *field*)

Send request to the aleph search engine.

Request itself is pretty useless, but it can be later used as parameter for *`getDocumentIDs()`*, which can fetch records from Aleph.

Parametry

- **`base`** (*str*) – which database you want to use
- **`phrase`** (*str*) – what do you want to search
- **`considerSimilar`** (*bool*) – fuzzy search, which is not working at all, so don't use it
- **`field`** (*str*) – where you want to look (see: *`VALID_ALEPH_FIELDS`*)

Vrací

consisting from following fields:

error (optional): present if there was some form of error
no_entries (int): number of entries that can be fetch from aleph
no_records (int): no idea what is this, but it is always >= than *no_entries*
set_number (int): important - something like ID of your request
session-id (str): used to count users for licensing purposes

Typ návratové hodnoty dictionary

Example

Returned dict:

```
{
 'session-id': 'YLI54HBQJESUTS678YYUNKEU4BNAUJDKA914GMF39J6K89VSCB',
 'set_number': 36520,
 'no_records': 1,
 'no_entries': 1
}
```

Raises

- *AlephException* – if Aleph doesn't return any information
- *InvalidAlephFieldException* – if specified field is not valid

aleph.aleph.**downloadRecords**(*search_result*, *from_doc=1*)

Download *MAX_RECORDS* documents from *search_result* starting from *from_doc*.

Attr: search_result (dict): returned from *searchInAleph()*. from_doc (int, default 1): Start from document number *from_doc*.

Vrací List of XML strings with documents in MARC OAI.

Typ návratové hodnoty list

aleph.aleph.**getDocumentIDs**(*aleph_search_result*, *number_of_docs=-1*)

Get IDs, which can be used as parameters for other functions.

Parametry

- **aleph_search_result** (*dict*) – returned from *searchInAleph()*
- **number_of_docs** (*int, optional*) – how many *DocumentID* from set given by *aleph_search_result* should be returned. Default -1 for all of them.

Vrací *DocumentID* named tuples to given *aleph_search_result*.

Typ návratové hodnoty list

Raises *AlephException* – If Aleph returns unknown format of data.

Poznámka: Returned *DocumentID* can be used as parameters to *downloadMARCXML()*.

---

aleph.aleph.**downloadMARCXML**(*doc_id*, *library*, *base='nkc'*)
Download MARC XML document with given *doc_id* from given *library*.

Parametry

- **doc_id** (DocumentID) – You will get this from *getDocumentIDs()*.
- **library** (*str*) – "NKC01" in our case, but don't worry, *getDocumentIDs()* adds library specification into *DocumentID* named tuple.

Vrací MARC XML unicode string.

Typ návratové hodnoty str

Raises

- *LibraryNotFoundException*
- *DocumentNotFoundException*

aleph.aleph.**downloadMARCOAI**(*doc_id*, *base*)
Download MARC OAI document with given *doc_id* from given (logical) *base*.

Funny part is, that some documents can be obtained only with this function in their full text.

Parametry

- **doc_id** (*str*) – You will get this from *getDocumentIDs()*.
- **base** (*str, optional*) – Base from which you want to download Aleph document. This seems to be duplicite with *searchInAleph()* parameters, but it's just something Aleph's X-Services wants, so ..

Vrací MARC XML Unicode string.

Typ návratové hodnoty str

Raises

- *InvalidAlephBaseException*
- *DocumentNotFoundException*

aleph.aleph.**getISBNsXML**(*isbn*, *base='nkc'*)
Download full XML record for given *isbn* in *base*.

Parametry

- **isbn** (*str*) – ISBN of the books you want to get.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getISSNsXML**(*issn*, *base='nkc'*)
Download full XML record for given *issn* in *base*.

Parametry

- **issn** (*str*) – ISSN of the books you want to get.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getAuthorsBooksXML**(*author*, *base='nkc'*)
Download full XML record for given *author* in *base*.

Parametry

- **author** (*str*) – Name of the *author* of the books you want to get.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getPublishersBooksXML**(*publisher*, *base='nkc'*)
Download full XML record for given *publisher* in *base*.

Parametry

- **publisher** (*str*) – Name of the *publisher* of the books you want to get.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getBooksTitleXML**(*title*, *base='nkc'*)
Download full XML record for given *title* in *base*.

Parametry

- **title** (*str*) – *title* of the books you want to get.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getICZBooksXML**(*icz*, *base='nkc'*)
Download full XML record for given *icz* (identification number) in *base*.

Parametry

- **icz** (*str*) – Identification number used to search Aleph.
- **base** (*str*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací List of strings with full **OAI** XML representation of the record.

Typ návratové hodnoty list

aleph.aleph.**getISBNsIDs**(*isbn*, *base='nkc'*)
Get list of *DocumentID* objects of documents with given *isbn*.

Parametry

- **isbn** (*str*) – ISBN string.
- **base** (*str, optional*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací of *DocumentID* objects

Typ návratové hodnoty list

aleph.aleph.**getAuthorsBooksIDs**(*author*, *base='nkc'*)
Get list of *DocumentID* objects of documents with given *author*.

Parametry

- **author** (*str*) – Authors name/lastname in UTF-8.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací of *DocumentID* objects

Typ návratové hodnoty list

aleph.aleph.**getPublishersBooksIDs**(*publisher*, *base='nkc'*)
Get list of *DocumentID* objects of documents with given *publisher*.

Parametry

- **publisher** (*str*) – Name of publisher which will be used to search Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací of *DocumentID* objects

Typ návratové hodnoty list

aleph.aleph.**getBooksTitleIDs**(*title*, *base='nkc'*)
Get list of *DocumentID* objects of documents with given *title*.

Parametry

- **title** (*str*) – Title (name) of the book which will be used to search in Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací of *DocumentID* objects

Typ návratové hodnoty list

aleph.aleph.**getICZBooksIDs**(*icz*, *base='nkc'*)
Get list of *DocumentID* objects of documents with given *icz* (identification number).

Parametry

- **icz** (*str*) – Identification number used to search Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací of *DocumentID* objects

Typ návratové hodnoty list

aleph.aleph.**getISBNCount**(*isbn*, *base='nkc'*)
Get number of records in Aleph which match given *isbn*.

Parametry

- **isbn** (*str*) – ISBN string.

- **base** (*str, optional*) – Base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací Number of matching documents in Aleph.

Typ návratové hodnoty int

aleph.aleph.**getAuthorsBooksCount**(*author*, *base='nkc'*)
Get number of records in Aleph which match given *author*.

Parametry

- **author** (*str*) – Authors name/lastname in UTF-8.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací Number of matching documents in Aleph.

Typ návratové hodnoty int

aleph.aleph.**getPublishersBooksCount**(*publisher*, *base='nkc'*)
Get number of records in Aleph which match given *publisher*.

Parametry

- **publisher** (*str*) – Name of publisher which will be used to search Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací Number of matching documents in Aleph.

Typ návratové hodnoty int

aleph.aleph.**getBooksTitleCount**(*title*, *base='nkc'*)
Get number of records in Aleph which match given *title*.

Parametry

- **title** (*str*) – Title (name) of book which will be used to search Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací Number of matching documents in Aleph.

Typ návratové hodnoty int

aleph.aleph.**getICZBooksCount**(*icz*, *base='nkc'*)
Get number of records in Aleph which match given *title*.

Parametry

- **icz** (*str*) – Identification number used to search Aleph.
- **base** (*str, optional*) – base on which will be search performed. Default *aleph.settings.ALEPH_DEFAULT_BASE*.

Vrací Number of matching documents in Aleph.

Typ návratové hodnoty int

Export module

This module is used to put data to Aleph. It is based on custom made webform, which is currently used to report new books by publishers.

Most important function from this module is *exportEPublication()*, which will do everything, that is needed to do, to export *EPublication* structure to the Aleph.

Varování: This whole module is highly dependent on processes, which are defined as import processes at the Czech National Library.

Varování: If you want to use export ability in your library, you should rewrite this and take care, that you are sending data somewhere, where someone will process them. Otherwise, you can fill your library's database with crap.

Poznámka: Source code of the webform is not available at this moment (it was created by third party), but it is possible, that it will be in future. This will highly depend on number of people, which will use this project.

---

exception aleph.export.**ExportException**(*message*)

exception aleph.export.**InvalidISBNException**(*message*)

exception aleph.export.**ExportRejectedException**(*message*)

class aleph.export.**PostData**(*epub*)

This class is used to transform data from *EPublication* to dictionary, which is sent as POST request to Aleph third-party webform.

Poznámka: Class is used instead of simple function, because there is 29 POST parameters with internal dependencies, which need to be processed and validated before they can be passed to webform.

Parametry **epub** (EPublication) – structure, which will be converted (see *EPublication* for details).

Attr: _POST (dict): dictionary with parsed data mapping (dict): dictionary with some of mapping, which are applied to

_POST dict in post processing

Varování: Don't manipulate _POST property directly, if you didn't really know the internal structure and how the mapping is applied.

get_POST_data()

Vrací POST data, which can be sent to webform using urllib or similar library

Typ návratové hodnoty dict

aleph.export.**exportEPublication**(*epub*)

Send *epub* *EPublication* object to Aleph, where it will be processed by librarians.

Parametry **epub** (EPublication) – structure for export

Varování: The export function is expecting some of the EPublication properties to be filled with non-blank data.
Specifically:

- *EPublication.ISBN*
- *EPublication.nazev*
- *EPublication.mistoVydani*
- *EPublication.datumVydani*
- *EPublication.poradiVydani*
- *EPublication.zpracovatelZaznamu*
- *EPublication.vazba*
- *EPublication.format*
- *EPublication.format*
- *EPublication.nakladatelVydavatel*

Settings and configuration

Module is containing all necessary global variables for package.

Module also has ability to read user-defined data from two paths: $HOME/_SETTINGS_PATH and /etc/_SETTINGS_PATH.

Poznámka: If the first path is found, other is ignored.

Example of the configuration file ($HOME/edeposit/aleph.json):

```
{
    "EDEPOSIT_EXPORT_SIGNATURE": "edeposit fancy signature",
    "EDEPOSIT_EXPORT_REFERER": "from edeposit ^-^"
}
```

Attributes

aleph.settings.**BASE_PATH = '/home/docs/checkouts/readthedocs.org/user_builds/edeposit-amqp-aleph/checkouts/stable/**
Module's path.

aleph.settings.**ALEPH_DEFAULT_BASE = 'nkc'**
Default base used to search in Aleph

aleph.settings.**DEFAULT_LIBRARY = 'CZE01'**
Default library in aleph.

aleph.settings.**ALEPH_URL = 'http://aleph.nkp.cz'**
URL used to read from Aleph. See Aleph's X-service module.

aleph.settings.**EDEPOSIT_EXPORT_SIGNATURE = 'edeposit'**
Signature used when the module is writing to the Aleph

aleph.settings.**EDEPOSIT_EXPORT_REFERER = 'edeposit'**
Referer, which is used when module is writing to the Aleph

aleph.settings.**ALEPH_EXPORT_URL = 'http://aleph.nkp.cz/aleph-cgi/e-deposit'**
URL, of form, which is used to write to the Aleph

aleph.settings.**get_all_constants**()
Get list of all uppercase, non-private globals (doesn't start with _).

Vrací Uppercase names defined in *globals()* (variables from this module).

Typ návratové hodnoty list

aleph.settings.**substitute_globals**(*config_dict*)
Set global variables to values defined in *config_dict*.

Parametry **config_dict** (*dict*) – dictionary with data, which are used to set *globals*.

Poznámka: *config_dict* have to be dictionary, or it is ignored. Also all variables, that are not already in globals, or are not types defined in _ALLOWED (str, int, float) or starts with _ are silently ignored.

1.2 Data structures

This module contains communication structures used in AMQP.

1.2.1 Structures

Author structure

class aleph.datastructures.author.**Author**
Informations about author (or person).

firstName
str

lastName
str

title
str

FormatEnum enum

class aleph.datastructures.format_enum.**FormatEnum**
Enum used as format in *EPublication*.

CD = 'CD-ROM'

DVD = 'DVD'

BROZ = 'bro\xc5\xbe.'

MAPA = 'mapa'

VAZANA = 'v\xc3\xa1z.'

ONLINE = 'online'

EPublication structure

class aleph.datastructures.epublication.**EPublication**
This structure is returned as result of users *SearchRequest*.

In case of *Search*/*Count* requests, this structure is filled with data from MARC XML record.

url
str – Url specified by publisher (THIS IS NOT INTERNAL URL!).

ISBN
list – List of ISBNs for the book.

cena
str – Price of the book.

vazba
str – Bidding of the book.

nazev
str – Name of the book.

format
str – Format of the book - see `FormatEnum`.

autori
list – List of `Author` objects.

castDil
str – Which part of the series of books is this.

anotace
str – Anotation. Max lenght: 500 chars..

podnazev
str – Subname of the book.

id_number
str – Identification number in aleph - starts.

originaly
list – List of (str) ISBN's of original books in case of translations.

nazevCasti
str – Name of part of the series.

datumVydani
str – Date of publication.

mistoVydani
str – City/country origin of the publication.

internal_url
str – Link to edeposit/kramerius system.

poradiVydani
str – Order of publication.

invalid_ISBN
list – List of INVALID ISBNs for this book.

zpracovatelZaznamu
str – Processor/manufacturer of record. with nkc - `nkc20150003133`.

nakladatelVydavatel
str – Publisher's name.

ISBNSouboruPublikaci
list – List of strings with ISBN of the book series.

static from_xml (*xml*)
Convert MARCXMLRecord object to *EPublication* namedtuple.

Parametry **xml** (*str/MARCXMLRecord*) – MARC XML which will be converted to EPublication. In case of str, <record> tag is required.

Vrací *EPublication* namedtuple with data about publication.

Typ návratové hodnoty structure

EPeriodical structure

class aleph.datastructures.eperiodical.**EPeriodical**
This structure is returned as result of users *SearchRequest*.

In case of *Search*/*Count* requests, this structure is filled with data from MARC XML record.

url
str – Url specified by publisher (THIS IS NOT INTERNAL URL!).

ISSN
list – List of ISSNs for the periodical.

invalid_ISSNs
list – List of INVALID ISSNs for this book.

nazev
str – Name of the periodical.

anotace
str – Anotation. Max lenght: 500 chars.

podnazev
str – Subname of the book.

id_number
str – Identification number in aleph.

mistoVydani
str – City/country origin of the publication.

datumVydani
str – Date of publication.

internal_url
str – Link to edeposit/kramerius system.

nakladatelVydavatel
str – Publisher's name.

ISSNSouboruPublikaci
list – ISSN links to other things.

static from_xml (*xml*)
Convert MARCXMLRecord object to *EPublication* namedtuple.

Parametry **xml** (*str/MARCXMLRecord*) – MARC XML which will be converted to EPublication. In case of str, <record> tag is required.

Vrací *EPublication* namedtuple with data about publication.

Typ návratové hodnoty structure

SemanticInfo structure

Definition of structures, which are used to hold informations about catalogization process.

class `aleph.datastructures.semanticinfo.`**SemanticInfo**

This structure is used to represent informations about export progress in Aleph.

It contains informations about state of the record, so it can be tracked from edeposit project.

See `toSemanticInfo()` for details of parsing of those attributes.

hasAcquisitionFields
bool – Was the record aproved by acquisition?

acquisitionFields
list – Acquisition fields if it the record was signed.

ISBNAgencyFields
list – Was the record approved by ISBN agency? Contains list of signs if it the record was signed.

descriptiveCatFields
list – Did the record get thru name description (jmenný popis). Contains list of signs if it the record was signed.

descriptiveCatReviewFields
list – Did the record get thru name revision (jmenná revize). Contains list of signs if it the record was signed.

subjectCatFields
list – Did the record get thru subject description (věcný popis). Contains list of signs if it the record was signed.

subjectCatReviewFields
list – Did the record get thru subject revision (věcná revize). Contains list of signs if the record was signed.

isClosed
bool – Was the record closed? This sometimes happen when bad ISBN is given by creator of the record, but different is in the book.

isSummaryRecord
bool – Is the content of FMT == "SE"?

contentOfFMT
str, default "" – Content of FMT subrecord.

parsedSummaryRecordSysNumber
str – Same as *summaryRecordSysNumber* but without natural language details.

summaryRecordSysNumber
str – Identificator of the new record if *.isClosed* is True. Format of the string is not specified and can be different for each record.

static from_xml(*xml*)

Pick informations from `MARCXMLRecord` object and use it to build *SemanticInfo* structure.

Parametry **xml** (*str/MARCXMLRecord*) – MarcXML which will be converted to SemanticInfo. In case of str, `<record>` tag is required.

Vrací *SemanticInfo*.

Typ návratové hodnoty structure

EPeriodicalSemanticInfo structure

Definition of structures, which are used to hold informations about catalogization process of periodical publications.

class aleph.datastructures.eperiodical_semantic_info.**EPeriodicalSemanticInfo**
This structure is used to represent informations about export progress in Aleph.

It contains informations about state of the record, so it can be tracked from edeposit project.

hasAcquisitionFields
bool – Was the record aproved by acquisition?

acquisitionFields
list – Acquisition fields if it the record was signed.

isClosed
bool – Was the record closed? This sometimes happen when bad ISBN is given by creator of the record, but different is in the book.

isSummaryRecord
bool – Is the content of FMT == "SE"?

contentOfFMT
str, default "" – Content of FMT subrecord.

parsedSummaryRecordSysNumber
str – Same as *summaryRecordSysNumber* but without natural language details.

summaryRecordSysNumber
str – Identificator of the new record if *.isClosed* is True. Format of the string is not specified and can be different for each record.

static from_xml (*xml*)
Pick informations from MARCXMLRecord object and use it to build *SemanticInfo* structure.

Parametry **xml** (*str/MARCXMLRecord*) – MarcXML which will be converted to SemanticInfo. In case of str, <record> tag is required.

Vrací *SemanticInfo*.

Typ návratové hodnoty structure

AlephRecord structure

Following structures are used to represent informations returned from Aleph.

API

class aleph.datastructures.alephrecord.**AlephRecord**
This structure is returned as response to *SearchRequest* inside *SearchResult*.

base
str – Identity of base where this record is stored.

library
str – Library string, used for downloading documents from Aleph when you know proper *docNumber*.

docNumber
str – Identificator in Aleph. It is not that much unique as it could be, but with *library* string, you can fetch documents from Aleph if you know this.

xml
str – MARC XML source returned from Aleph. Quite complicated stuff.

parsed
namedtuple, default None – Parsed *xml* to *EPublication* structure in case of monographic / multimono publications, or *EPeriodical* in case of series.

semantic_info
namedtuple, default None – Export progress informations from *xml* attribute represented as *SemanticInfo* structure in case of monographic / multimono publications, or *EPeriodicalSemanticInfo* in case of series.

Poznámka: *semantic_info* and *parsed* attributes are parsed automatically from *xml* if not provided by user.

Request structures

Request structures, on which *aleph.reactToAMQPMessage()* reacts.

All strucutures defined here are simple dataholders, based on *namedtuple*.

class aleph.datastructures.requests.**CountRequest**
Put one of the Queries to .query property and result will be just the number of records, instead of records itself.

This helps to save some of Aleph resources (yeah, it is restricted to give too much queries by license).

query
Query object – GenericQuery, ISBNQuery, .. (Any)Query structure defined in *aleph* module.

Viz také:

aleph.reactToAMQPMessage() returns *aleph.datastructures.results.CountResult* as response.

class aleph.datastructures.requests.**SearchRequest**
Perform search in Aleph with given *query*.

query
Query object – GenericQuery, ISBNQuery, .. (Any)Query structure defined in *aleph* module.

Viz také:

aleph.reactToAMQPMessage() returns *aleph.datastructures.results.SearchResult* as response.

class aleph.datastructures.requests.**ISBNValidationRequest**
Validate given ISBN.

ISBN
str – ISBN, which will be validated.

Viz také:

aleph.reactToAMQPMessage() returns *aleph.datastructures.results.ISBNValidationResult* as response.

class aleph.datastructures.requests.**ExportRequest**
Request to export data to Aleph.

epublication
aleph.datastructures.epublication.EPublication structure, which will be exported to Aleph

Varování: *ISBN*, *nazev*, *Místo vydání*, *Měsíc a rok vydání*, *Pořadí vydání*, *Zpracovatel záznamu*, *vazba/forma*, *Formát (poze pro epublikace)* and *Nakladatel* has to be present, or AssertionError will be thrown.
ISBN has to be valid, or request will be rejected with ExportException.

Viz také:

aleph.reactToAMQPMessage() returns *aleph.datastructures.results.ExportResult* as response.

Result classes

This module provides Result objects, that are sent back as answers to requests.

All classes defined here are just simple namedtuple data containers, without any other functionality.

class aleph.datastructures.results.**ISBNValidationResult**
Response to *ISBNValidationRequest*.

is_valid
bool – True, if ISBN is valid.

class aleph.datastructures.results.**SearchResult**
This is response structure, which is sent back when *SearchRequest* is received.

records
list – Array of AlephRecord structures.

class aleph.datastructures.results.**CountResult**
This is returned back to client when he send *CountRequest*.

num_of_records
int – Number of records.

class aleph.datastructures.results.**ExportResult**
Sent back as response to *ExportRequest*.

This class is blank at the moment, because there is no information, that can be sen't back.

ISBN
str – ISBN of accepted publication.

1.3 Aleph's lowlevel API

1.3.1 Propojeni do katalogu NK ČR

Kódy pro polí pro vyhledávání

- **wrd** - slova ze všech popisných údaju (název, autoři, rok vyd., nakladatel, edice, klíčová slova atd.)
- **wtl** - slova z názvových údajů (název, název části, edice, originál atd.)
- **wau** - slova z údajů o autorech
- **wpb** - slova z údajů o nakladateli
- **wpp** - slova z údajů o místě vydání

- **wyr** - rok vydání
- **wkw** - předmět (klíčová slova)
- **sbn** - ISBN/ISMN
- **ssn** - ISSN
- **icz** - identifikační číslo záznamu
- **cnb** - číslo ČNB
- **sg** - signatura

Jedná se o kódy formulářů, tak jak by je bylo možné vybrat na webových stránkách.

Vyhledání záznamů – podle ISBN

http://aleph.nkp.cz/X?op=find&request=sbn=978-80-7367-397-0&base=nkc

Vyhledání záznamů

Podle autora a názvu

http://aleph.nkp.cz/X?op=find&request=wau=(Milan+Hejny)+and+wtl=(Dite+matematika)&base=nkc

(problémy s diakritikou, interpunkci, některými spojkami atd.)

http://aleph.nkp.cz/X?op=find&request=wau=(Milan+Hejn%C3%BD)+and+wtl=(D%C3%ADt%C4%9B+a+matematika)&base=

Podle nakladatele

http://aleph.nkp.cz/X?op=find&request=wau=(Hejny)+and+wtl=(matematika)+and+wpb=Portal&base=nkc

Nakladatel Grada

http://aleph.nkp.cz/X?op=find&request=wpb=Grada&base=nkc

Případně pouze knihy

http://aleph.nkp.cz/X?op=find&request=wau=(Hejny)+and+wtl=(matematika)+and+wtp=bk&base=nkc

a další možné kombinace...

Odpověď

Server vrátí odpověď, kde je uveden počet nalezených záznamů a kód množiny výsledků. Následně je možné stáhnout jeden nebo více vyhledaných záznamů v XML (formát OAI-XML)

```
http://aleph.nkp.cz/X?op=present&set_number=<kód množiny výsledků>&set_entry=1
https://aleph.nkp.cz/X?op=present&set_number=39EUFDPANCBL5134N9UPNMPHFDEXPR2LR32GMP99R85TACTN5U
```

resp.:

```
http://aleph.nkp.cz/X?op=present&set_number=<kód množiny výsledků>&set_entry=5,6,11
```

resp.:

```
http://aleph.nkp.cz/X?op=present&set_number=<kód množiny výsledků>&set_entry=1-25
http://aleph.nkp.cz/X?op=present&set_number=077285&set_entry=1-25
```

Průběh celé session

Dotaz na knihy vydavatele:

> http://aleph.nkp.cz/X?op=find&request=wpb=Grada&base=nkc

Což vrátí:

```
<find>
<set_number>016513</set_number>
<no_records>000004998</no_records>
<no_entries>000002500</no_entries>
<session-id>9A5HGMD6SMHBBX6NFDGTS6JD1GNK9JUFGQENM28Y6EDTL4RABD</session-id>
</find>
```

Nyní získáme kódy dokumentů (přes url http://aleph.nkp.cz/X?op=present&set_number=016513&set_entry=1-100 anebo ve formatu marcxml http://aleph.nkp.cz/X?op=ill_get_set&set_number=016513&start_point=1&no_docs=500)

Použiji url http://aleph.nkp.cz/X?op=ill_get_set&set_number=016513&start_point=1&no_docs=2

```
<ill-get-set>
<doc-number>002475050</doc-number>
<doc-number>002468257</doc-number>
<no-docs>000000002</no-docs>
<set-library>NKC01</set-library>
<session-id>F3A9P757D16J84CULSGBTYSMDMYUXDDGDD8R6EEJIJIK9YDV4H</session-id>
</ill-get-set>
```

Povšimněte si položek `<doc-number>`. Čísla z nich je možné nyní využít pro stažení samotných záznamů.

Stažení záznamů (formát MARCXML)

Funkce `ill_get_set` a `ill_get_doc`. Stažení záznamů (po jednom) – např.:

- http://aleph.nkp.cz/X?op=ill_get_doc&doc_number=001810391&library=nkc01

Stažení záznamů (formát MAR OAI)

Stažení záznamu podle systém. čísla (funkce `find_doc`):

> http://aleph.nkp.cz/X?op=find_doc&doc_num=0018103916&base=nkc

nebo:

> http://aleph.nkp.cz/X?op=find_doc&doc_number=001810391&base=NAK

Funkce publish_avail

Zjištění aktuální dostupnosti jednotek k danému záznamu (může být zadáno až 10 systém. čísel oddělených čárkami)

> http://aleph.nkp.cz/X?op=publish_avail&doc_num=002107662&library=nkc01
>
> resp.

http://aleph.nkp.cz/X?op=publish_avail&doc_num=002107662,002124258,002105616&library=nkc01

odpověď v češtině

http://aleph.nkp.cz/X?op=publish_avail&doc_num=002107662,002124258,002105616&library=nkc01&con_lng=cze

Nastavení v tab_expand

```
X-AVAIL     expand_doc_bib_avail            AVA=DG,ZL,ND,RD
X-AVAIL     expand_doc_del_fields           100##,245##,250##,260##,300##,AVA##
```

Standardně, je-li vyplněn status zprac. Jednotky, je jednotka nedostupná. To je možné změnit přidáním parametru AVA=..., kde se uvedou všechny statusy, které dostupnost neblokují.

Indices and tables

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- modindex
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