SOLR Catalog Query API

imc Learning Suite

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Using the catalog search API in ILS 14.9

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Content

1 Available service

The catalog search in our application is based on Apache Solr. To use the catalog search your search service has to be reachable at

`https://yourhost:yourport/searchcontext/catalogindex/`

Example:

`https://sb-lap205w10:9491/solrsrv/catalogindex/`

Alternatively use the frontend-proxy

`https://yourhost:yourport/frontendcontext/solr/catalogindex/`

Example:

`https://sb-lap205w10:9491/ilp/solr/catalogindex/`

2   Authentication

In order to access the search service you need to send an `Authentication` header in your search request. This `Authentication` header will then be used to verify your user against the backend system (ILS) connected to the search service.

2.1   Supported authentication types

- Basic
- Bearer

2.2   Authentication against a public search service

2.2.1   Retrieving a Bearer token from the backend via curl

```
curl -X POST -H "Content-Type: application/x-www-form-urlencoded" \
-d "grant_type=password&username=SOME_USER_NAME&password=SOME_PASSWORD&cli-
ent_id=SOME_CLIENT_ID&client_secret=SOME_SECRET" \
https://yourhost:yourport/backendcontext/oauth/accesstoken
```

2.2.2   Using the bearer token to access the search service

```
curl -H "Authorization: Bearer SOME_BEARER_TOKEN" https://yourhost:your-
port/searchcontext/catalogindex/query?q=*:*
```

2.3   Authentication against a non-public search service

To authenticate against a non-public search service available via the ILP-proxy.

https://yourhost:yourport/frontendcontext/solr/

You would have to provide either a valid session cookie or valid ILAAUTH and ILOAUTH cookies to the frontend call.

3 General reference

As a general reference on how to use the solr query api you can check the solr reference documentation of the respective version

https://solr.apache.org/guide/8_6/query-syntax-and-parsing.html

4 Overview of result attributes

A single search document in the catalogindex has the following fields

aclClients

A list of ids of all clients having ACL grants on the catalogs this search document is assigned to.

aclGroups

A list of ids of all groups having ACL grants on the catalogs this search document is assigned to.

aclPersons

A list of ids of all persons having ACL grants on the catalogs this search document is assigned to.

allowRating

Allow rating on the document (1) or not (0).

bookedPersons

A list of booked persons encoded as `PERSONID_BOOKINGSTATE_ISRESERVED`, e.g. 643543_6_0.

```
"bookedPersons":[
        "2_9_0",25,
        "701262_8_0",22,
        "701261_8_0",21,
        "701263_8_0",21,
        "701264_8_0",21,
        "701265_8_0",21,
        ....
```

bookshelfPersons

A list of ids of all persons having the document on their bookshelf.

categoryId

Id of the first catalog the document is assigned to.

categoryPosition

Position in the catalog referred to via categoryId.

categoryPosition_x

Position in the catalog x.

certificationIds

Ids of the certifications assigned to this document.

classificationIds

List of the depth-and-id-based hierarchy paths of all classifications assigned to this document e.g. 1/431150/431163/

```
        "0/101377/"
        "0/431150/"
        "1/431150/431163/"
        "1/101377/104663/"
        "1/101377/101383/"
        "2/101377/101383/101405/"
        "3/101377/101383/101405/101409/"
```

`1/101377/104663/` means the document can be found in classification folder 104663 on the first level below classification 101377.

classificationLabels

Human readable labels of he classifications (i.e. names of the classifications).

```
        "Classifications Topics Themen"
        "How Engines Are made"
        "How Products Are Made Cluster"
        "Management"
        "Software and IT Software und IT"
        "MS Office"
```

compAclClients

List of ids of all clients having ACL grants on this document.

compAclGroups

List of ids of all groups having ACL grants on this document.

compAclPersons

List of ids of all persons having ACL grants on this document.

componentId

The component id of the document.

compTypeAclClients

List of ids of all clients having ACL grants on the type of this document.

compTypeAclGroups

List of ids of all groups having ACL grants on the type of this document.

compTypeAclPersons

List of ids of all persons having ACL grants on the type of this document.

contentLangIds

ids of the content languages of this document (e.g. 23 for German (DE)).

```
"contentLangIds":[
        "27"
        "23"
        "26"
        "35"
        "52"
```

coveredPersons

Coverage information for courses and templates.

description

Contains the values of the description metatag of the document in all configured languages of the item described by the document.

directAssignments

List of catalog ids the document is directly assigned to.

directlyAssigned

(1) if document is directly assigned to a catalog from `directAssignments`, (0) otherwise.

durationOfUse

Values of the metatag "duration of use".

```
""
"M"
"3M"
"12M"
"10M"
"200M"
"2M"
```

where e.g. `3M` stands for 3 months.

endDate

Long field containing a UTC time in millis e.g. 1971504000000 for 2032-06-22T08:00:00Z.

endDateStr

Date range field containing a ISO time stamp e.g. 2032-06-22T08:00:00Z.

externalPriceAmount

The external price of the item represented by the search document Type: double.

externalPriceCurrency

The name of the currency of the external price of the item described by the document.

```
"externalPriceCurrency":[
        ""
        "EUR"
        "AUD"
```

fixedTimeZone

1 if the item represented by this document has a fixed timezone, 0 otherwise.

freePlaces

Denotes the amount of free places on a course represented by this search document. * -100: unlimited places available.

freeWaitingPlaces

Denotes the amount of free waiting list places on a course represented by this search document. * -100: unlimited places available.

hierarchyPath

Describes the path from the root to an item represented by this search document. E.g. a catalog with id = 219820 on the first level below a root catalog with id = 219809 has a hierarchy path of `2/0/219809/219820/`.

iddPoints

Idd points of the item represented by this search document.

indirectAssignments

Ids of the catalogs to which this item is indirectly assigned, e.g. if this item is a course derived from a course template which is assigned to a catalog.

instanceCount

Number of instances available to this item. This e.g. holds the number of course instances if the item represents a course template.

isBookable

1 if the component is bookable, 0 if not.

isDisableEnrolForLearner

1 if enrollment should be disabled for learners, 0 if not.

isTemplate

1 if the item is a course template, 0 if not.

jsonResult

A JSON String representation of the complete search document.

lastUpdated

Describes when the item has been last updated Long field containing a UTC time in millis e.g. 1971504000000 for 2032-06-22T08:00:00Z.

lastUpdatedStr

Describes when the item has been last updated Date range field containing a ISO time stamp e.g. 2032-06-22T08:00:00Z.

learningFormId

Id of the learning form this item represents.

locationIds

List of the depth-and-id-based hierarchy paths of all location ids assigned to this document e.g. 2/101481/224896/224898/.

```
    "0/101481/",
    "1/101481/224896/",
    "2/101481/224896/224898/"
```

`2/101481/224896/224898/` means the document is assigned to location with id 224898 and can be found using on all locations on the path to location id 224898.

mainTypeId

The id of the maintype of this item e.g. 3 means this item represents a course. Please have a look at the section about content main type mapping.

newContent

1 if the content is new, 0 otherwise.

objectId

The object id of the item represented by this search document.

orderTypeId

Relevant mainly for courses.

Table 1:   Order type id mapping

Order type	semantics
0	No order type
1	Self registration
2	Self registration with notification
3	Self registration with confirmation
4	Self registration with confirmation by management
5	Third party registration
6	Third Party Registration With Confirmation
11	Self Registration request with approval and registration by supervisor

parentIdRoot

Depth-and-id-based hierarchy path to the parent catalog of this item. `0/101130/`.

parentIds

Colon-separate list of ids of all parents of the current item.

priceAmount

The external price of the item represented by the search document Type: double.

priceCurrency

The name of the currency of the internal price of the item described by the document.

```
""
"EUR"
"AUD"
```

providerName

The name of the course provider if this search item is a course.

rating

The rating value of a search item.

rating0Count

Number of value 0 ratings of a search item.

rating1Count

Number of value 1 ratings of a search item.

rating2Count

Number of value 2 ratings of a search item.

rating3Count

Number of value 3 ratings of a search item.

rating4Count

Number of value 4 ratings of a search item.

rating5Count

Number of value 5 ratings of a search item.

root

For hierarchy items the id of the root node in their hierarchy.

searchContent

1 for searchContent, 0 otherwise.

searchText

General full text search field which by default contains at least the values for

– name
– description
– keywords
– subtitle

of an item in all languages.

selfRegistrationEndDate

Date up to which self registration is possible on a search item representing a course Long field containing a UTC time in millis e.g. 1971504000000 for 2032-06-22T08:00:00Z.

selfRegistrationEndDateStr

Date up to which self registration is possible on a search item representing a course Date range field containing a ISO time stamp e.g. 2032-06-22T08:00:00Z.

selfRegistrationStartDate

Date starting from which self registration is possible on a search item representing a course Long field containing a UTC time in millis e.g. 1971504000000 for 2032-06-22T08:00:00Z.

selfRegistrationStartDateStr

Date starting from which self registration is possible on a search item representing a course Date range field containing a ISO time stamp e.g. 2032-06-22T08:00:00Z.

skillIds

List of the depth-and-id-based hierarchy paths of all skill ids assigned to this document e.g. 2/709083/709084/709046/.

```
    "0/709083/",
     "1/709083/709084/",
     "2/709083/709084/709032/",
     "0/709083/",
     "1/709083/709084/",
     "2/709083/709084/709046/",
     "0/709083/",
     "1/709083/709084/",
     "2/709083/709084/709047/"
```

`2/709083/709084/709046/` means the document is assigned to a skill with id 709046 and this skill can be found using all skills on it's path (e.g. 709084, 709083).

startDate

Date on which a course starts if the search item represents a course Long field containing a UTC time in millis e.g. 1971504000000 for 2032-06-22T08:00:00Z.

startDateStr

Date on which a course starts if the search item represents a course Date range field containing a ISO time stamp e.g. 2032-06-22T08:00:00Z.

subTreeIds

List of the depth-and-id-based hierarchy paths of all catalog ids assigned to this document e.g. 2/0/219809/219815/

```
":["7/0/490912/436023/498647/498650/498653/498656/498659/",
       "6/0/490912/436023/498647/498650/498653/498656/",
       "2/0/490912/436023/",
       "5/0/490912/436023/498647/498650/498653/",
       "1/0/490912/",
       "4/0/490912/436023/498647/498650/",
       "2/0/219809/219815/",
       "3/0/490912/436023/498647/",
       "0/0/",
       "1/0/219809/",
       "8/0/490912/436023/498647/498650/498653/498656/498659/498662/"],
```

This means this search item can e.g. be found be querying for the catalog with id 219815 or any catalog id in its path

templateId

Id of the template this item has been derived from if the item represents a course.

timeZoneIdentifier

Time zone identifiers like e.g.

```
"Asia/Muscat"
"Asia/Yakutsk"
    "CET"
    "Chile/EasterIsland"
    "Pacific/Kiritimati"
    "Pacific/Midway"
```

title

The title of a search item if available e.g. the title of a course. For this field there are also dynamic fields title_LANGCODE (e.g. title_de) holding only the translation for the respective language.

topContent

1 if an item is marked as top content, 0 otherwise.

typeObjectId

Id of the type object this search item is connected if available.

uniqueKey

The unique key of the search document throughout the whole search index. For items representing skills this value is created as

```
mainTypeId_folderId_componentId
```

For other items the value is created as

```
mainTypeId_componentId
```

userDefinedTimeZone

1 if the timezone is usedefined, 0 otherwise.

wbtTypeId

Id of the wbt type if the search item represent a WBT.

5 Queries

5.1 Query all values in all fields

```
query?q=*:*
```

5.2 Query all values in the title field

```
query?q=title:*
```

5.3 Return only title and uniqueKey fields in the response

```
query?q=title:*&fl=title,uniqueKey
```

5.4 Define the number of returned result

Using the `rows` parameter you can define how many results should be returned. If no `rows` parameter is present the query shows 10 results by default.

To show only 3 results of your query you can write

```
query?q=title:*&fl=title,uniqueKey&rows=3
```

5.5 Paging through results

To show the next `x` results you can use a combination of `start` and `rows` parameters to tell the API where the start index of the result should be (`start`) and how many results from that index on should be returned (`rows`)

To show only 3 results starting from result 9 of your query you can write

```
query?q=title:*&fl=title,uniqueKey&start=9&rows=3
```

5.6 Show number of available items (i.e. count group by mainTypeId)

```
query?q=*:*&facet=true&facet.field=mainTypeId&rows=0
```

Rows=0 suppresses the results such that only the distribution of values in the facet field mainTypeId will be listed

```
{
  "responseHeader":{
    "warnings":["Raising facet.mincount from 0 to 1, because field mainTypeId
is Points-based."],
    "status":0,
    "QTime":5},
  "response":{"numFound":750,"start":0,"numFoundExact":true,"docs":[]
  },
  "facet_counts":{
    "facet_queries":{},
    "facet_fields":{
      "mainTypeId":[
        "3",413,
        "504",44,
        "210",43,
        "500",36,
        "1",34,
        "640",33,
        "76",30,
        "43",22,
        "45",21,
        "68",20,
        "84",17,
        "8",14,
        "75",9,
        "48",7,
        "7",5,
        "6",1,
        "82",1]},
    "facet_ranges":{},
    "facet_intervals":{},
    "facet_heatmaps":{}}}
```

5.7 Mapping of available main types

5.7.1 EComponent main type mapping

Table 2: EComponent main type mapping

EComponent main type Id	semantics
1	Catalog
3	Course
5	Chat
6	Forum
7	Event
8	Blackboard
10	Document archive
38	FAQ
39	Glossary
40	Link list
43	File
45	WBT
46	WBT-AICC
48	Link
49	AU
66	Scorm WBT
69	Scorm item
68	QTI test
74	GoTo webinar
75	QTI feedback
76	Program
77	Wiki
80	Dictionary
81	Team learning
82	Activity
83	GoTo webinar

EComponent main type Id	semantics
84	Media file
90	on the job training (OJT)
91	Course set
92	GoTo Webinar
93	GoTo Meeting
94	External tool LTI
95	Mahara Portfolio
96	Vitero Meeting
97	External Medium
98	Linkedin Learning
100	External tool LTI
99	xAPI Tincan WBT
650	Open Meeting

5.7.2   Content main type mapping

Table 3:   Content main type mapping

Content main type Id	semantics
500	Skill scale
504	Skills
640	Classifications
210	Locations

5.8 Using the facet query (fq) to restrict the search result

5.8.1 Show only courses

```
query?q=*:*&fq=mainTypeId:3
```

Shows only courses, i.e. items with mainTypeId=3.

5.8.2 Show only courses I am booked on

Assuming that you are the user with person id = 88991 you can get all courses you are booked on by asking

```
query?q=*:*&fq=mainTypeId:3&fq=bookedPersons:88991_*
```

This will filter for all courses (items with mainTypeId=3) on which the person with id 88991 has a booking relation on

5.8.3 Show only courses I am not booked on

Assuming that you are the user with person id = 88991 you can get all courses you are not booked on simply by using the negation operator (!)

```
query?q=*:*&fq=mainTypeId:3&fq=!bookedPersons:88991_*
```

This will filter for all courses (items with mainTypeId=3) on which the person with id 88991 for which there is no entry in `bookedPersons` attribute

5.8.4 Show only courses with end date smaller than 2032-06

You can use the `endDateStr` field and ask for an ISO date string range, e.g. courses with an enddate smaller than June 2023 (2023-06) would yield

```
query?q=*:*&fq=mainTypeId:3&fq=endDateStr:[* TO 2023-06]
```

which depending on your query client you have to url-encode due to the square brackets and spaces

```
query?q=*:*&fq=mainTypeId:3&fq=endDateStr:%5B*%20TO%202023-06%5D
```