

WEB OF KNOWLEDGE WEB SERVICES LITE V. 3.0

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Web of Knowledge Web Services define an automated system for mining data from Web of Knowledge databases. They follow SOAP (Simple Object Access Protocol) for transferring request and response messages.

Web of Knowledge Web Services comply with the following standards:

- [JSR 224](#)¹: Java API for XML-based Web Services 2.0 (JAX-WS) specification
- WSDL 1.1 standard
- SOAP 1.1 standard

Web of Knowledge Web Services consist of two JAX-WS Web services:

- WOKMWSAuthenticate
- WokSearchLite

WOKMWSAuthenticate is an authentication and session management service. WokSearchLite is a data retrieval services.

Web of Knowledge Web Services are session-based: the services have state. The services retain your authentication information, service entitlements, and the queries that you have run during a single session.

Web Service Clients

A Web service client is required to send and receive SOAP messages. To set up a Web services client, you can:

- install and configure a commercial or open source Web service client that can send and receive SOAP messages. One such tool is [soapUI](#)².

or

- develop a custom Web service client for sending and receiving SOAP messages.

Service Endpoint Addresses

The public endpoint addresses for Web of Knowledge Web Services are:

- <http://search.webofknowledge.com/esti/wokmws/ws/WOKMWSAuthenticate>
- <http://search.webofknowledge.com/esti/wokmws/ws/WokSearchLite>

WSDL File Locations

The addresses of the WSDL documents append **?wsdl** to the endpoint addresses:

- <http://search.webofknowledge.com/esti/wokmws/ws/WOKMWSAuthenticate?wsdl>
- <http://search.webofknowledge.com/esti/wokmws/ws/WokSearchLite?wsdl>

These may be retrieved via an HTTP Get request.

Document Namespaces

The XML namespace in the response document identifies the source of the data and the document structure.

Namespace	Schema	Description
http://scientific.thomsonreuters.com/schema/wok5.X/public/FullRecord	Web of Knowledge 5.4 schema	This namespace identifies the document as a full record document from a Web of Knowledge version 5.X database, except DIIDW.
http://scientific.thomsonreuters.com/schema/wok5.X/public/Fields	N/A	This namespace identifies the document as a document consisting of selected field data from a Web of Knowledge version 5.X database, except DDIW.
http://scientific.thomsonreuters.com/schema/wok5.X/public/GB/DIIDW/Record/FullRecord	N/A	This namespace identifies the document as a full record document from DIIDW in Web of Knowledge version 5.X.
http://scientific.thomsonreuters.com/schema/wok5.X/public/GB/DIIDW/Record/Fields	N/A	This namespace identifies the document as a document consisting of selected field data from DIIDW in Web of Knowledge version 5.X.

Sequence of Requests

This is the basic sequence of service requests:

1. authenticate operation of the WOKMWSAuthenticate service
2. one or more requests to any operation of the WokSearchLite service
3. closeSession operation of the WOKMWSAuthenticate service

Support

If you have questions about using our products or about your access to them, please visit our support page at <http://ip-science.thomsonreuters.com/support>. This page has links to our support Knowledgebase, the local telephone numbers,

and hours of operation. When you click on the **Open eTicket** tab, your issue will be immediately routed to your local support team.

Please go to <http://ip-science.thomsonreuters.com/techsupport/datachange/> to request changes to the database.

Questions about network connections and/or the use of your Web browser should be directed to your network administrator.

Notes

1. <http://jcp.org/aboutJava/communityprocess/pfd/jsr224/index.html>
2. <http://www.soapui.org/>

Data Returned by the Service

The service returns record data from Web of Science that meet search criteria specified in a request for data.

XML element	Description	Sample Value
<uid>	Unique identifier for a document assigned by Thomson Reuters.	WOS:000260007300017
<title> <label>Title</label> </title>	Article title	<value>Persistent alterations in cognitive function and prefrontal dopamine D2 receptors following extended, but not limited, access to self-administered cocaine</value>
<title> <label>Issue</label> </title>	Journal issue	<value>12</value>
<source> <label>Pages</label> </source>	Article page span	<value>2969-2980</value>
<source> <label>Published.BiblioDate</label> </source>	Date of source publication	<value>NOV</value>
<source> <label>Published.BiblioYear</label> </source>	Year of source publication	<value>2008</value>
<source> <label>SourceTitle</label> </source>	Title of source publication	<value>NEUROPSYCHOPHARMA COLOGY</value>
<source> <label>Volume</label> </source>	Volume of source publication	<value>33</value>
<authors> <label>Authors</label> </authors>	Author names	<value>Briand, Lisa A.</value> <value>Flagel, Shelly B.</value> <value>Garcia-Fuster, M. Julia</value> <value>Watson, Stanley J.</value> <value>Akil, Huda</value> <value>Sarter, Martin</value> <value>Robinson, Terry E.</value>
<keywords> <label>Keywords</label> </keywords>	Author keywords	<value>self-administration</value> <value>attention</value> <value>addiction</value> <value>dopamine receptor</value> <value>medial prefrontal cortex</value> <value>orbital frontal cortex</value>
<other> <label>Contributor.ResearcherID. Names</label> <label>Contributor.ResearcherID. ResearcherIDs</label> </other>	Contributors and ResearcherID numbers. A contributor is a person or entity that has 1) added the item to their My Publications list in ResearcherID and	<other> <label>Contributor.ResearcherID. Names</label> <value>Johnson, Paul</value> </other> <other> <label>Contributor.ResearcherID. ResearcherIDs</label> <value>E-1234-2010</value> </other>

2) made their My Publications list public.

<other> <label>Identifer.Doi</label> </other>	Document DOI	<value>10.1038/npp.2008.18</value>
<other> <label>Identifer.Article_no</label> </other>	Article number	<value>ARTN 064319</value>
<other> <label>Identifer.Ids</label> </other>	ISI Document Solution identifier	<value>359SB</value>
<other> <label>Identifer.Issn</label> </other>	ISSN	<value>0893-133X</value>
<other> <label>Identifer.Ibsn</label> </other>	ISBN	<value>0-89603-417-8</value>

Sample Response

```
<?xml version="1.0" encoding="UTF-8"?>
<soap:Envelope>
  <soap:Body>
    <ns2:searchResponse>
      <return>
        <queryId>1</queryId>
        <recordsFound>8</recordsFound>
        <recordsSearched>52173730</recordsSearched>
        <records>
          <uid>WOS:000260007300017</uid>
          <title>
            <label>Title</label>
            <value>Persistent alterations in cognitive function and prefrontal dopamine D2 receptors following
extended,
but not limited, access to self-administered cocaine</value>
          </title>
          <source>
            <label>Issue</label>
            <value>12</value>
          </source>
          <source>
            <label>Pages</label>
            <value>2969-2980</value>
          </source>
          <source>
            <label>Published.BiblioDate</label>
            <value>NOV</value>
          </source>
          <source>
            <label>Published.BiblioYear</label>
            <value>2008</value>
          </source>
          <source>
            <label>SourceTitle</label>
            <value>NEUROPSYCHOPHARMACOLOGY</value>
          </source>
          <source>
            <label>Volume</label>
            <value>33</value>
          </source>
          <authors>
            <label>Authors</label>
            <value>Briand, Lisa A.</value>
            <value>Flagel, Shelly B.</value>
            <value>Garcia-Fuster, M. Julia</value>
            <value>Watson, Stanley J.</value>
            <value>Akil, Huda</value>
            <value>Sarter, Martin</value>
            <value>Robinson, Terry E.</value>
          </authors>
          <keywords>
            <label>Keywords</label>
            <value>self-administration</value>
            <value>attention</value>
            <value>addiction</value>
            <value>dopamine receptor</value>
            <value>medial prefrontal cortex</value>
            <value>orbital frontal cortex</value>
          </keywords>
          <other>
            <label>Identifier.Doi</label>
            <value>10.1038/npp.2008.18</value>
          </other>
          <other>
            <label>Identifier.Ids</label>

```

```
<value>359SB</value>
</other>
<other>
  <label>Identifier.Issn</label>
  <value>0893-133X</value>
</other>
<other>
  <label>Identifier.Xref_Doi</label>
  <value>10.1038/npp.2008.18</value>
</other>
</records>
</return>
</ns2:searchResponse>
</soap:Body>
</soap:Envelope>
```

Authentication

Web of Knowledge Web Services are authenticated Web services. They require successful validation of your authentication credentials prior to data retrieval.

Web of Knowledge Web Services offers both IP and Username/Password authentication. The appropriate authentication credentials for your site should already be set. If you need to verify that your client IP or username/password combination has been entered in our system, or if you want to change your credentials, contact Thomson Reuters Technical Support at <http://science.thomsonreuters.com/support/>.¹

The initial request sent to the WOKMWSAuthenticate service by your Web services client submits authentication credentials. If your authentication credentials are validated, a session identifier is returned in the service response. Otherwise, a SOAP fault is returned.

All subsequent requests to Web of Knowledge Web Services do not require authentication as long as the session ID has not expired and is included in each service request.

IP Authentication

IP authentication happens automatically as long as your IP address has been recorded in your customer account. Unlike username/password authentication, IP authentication does not require an Authorization header.

Username/Password Authentication

For Username/Password authentication, the HTTP post request that sends the authenticate SOAP message must contain the username/password in a Base64-encoded string in the HTTP header. The username and password should be formatted as <username>:<password> and then encoded.

```
Header name: Authorization
Header value: [Basic the-base64-encoded-username-password]
```

Sample HTTP Header

In this example, the user name is wsfuser1 and the password is password1. Where d3NmdXNlcjE6cGFzc3dvcnQx is wsfuser1:password1 encoded in Base64.

```
Encoding: UTF-8
HTTP Headers:
{
  content-length=[182],
  Authorization=[Basic d3NmdXNlcjE6cGFzc3dvcnQx],
  connection=[keep-alive],
  cache-control=[no-cache],
  host=[10.224.10.63:8081],
  user-agent=[Java/1.5.0_09],
  SOAPAction=[""],
  pragma=[no-cache],
  content-type=[text/xml;
  charset=UTF-8],
  Accept=[*]
}
```

Base64 Encoding References

- [Base64](#)² Content encoding scheme
- [RFC 2617](#)³ (HTTP Authentication: Basic and Digest Access Authentication)
- [Basic access authentication](#)⁴
- <http://www.motobit.com/util/base64-decoder-encoder.asp> Encode and decode using base64 encoding

The Session Identifier

The session identifier will be returned as a string from the authenticate operation. It will also be present in an HTTP cookie attached to the SOAP response. The cookie name is SID.

All subsequent requests do not require authentication as long as the session ID has not expired and is included in each service request.

By default, your Web services client will not send the session identifier with subsequent service requests. You must configure your Web services client to send the session identifier. The session ID must be sent in the transport header rather than in the SOAP message. Once authenticated, all service requests are routed to the authenticating server. This routing is done using the session identifier located in the HTTP request header:

```
Header name:  Cookie
Header value:  SID="I4LaCdfKGe8Dhm8Gkd@"
```

Note: The session identifier may contain special characters and therefore must be enclosed in quotation marks.

Sample Header

```
Encoding: UTF-8
Headers:
Cookie=SID="I4LaCdfKGe8Dhm8Gkd@"
content-type=text/xml; charset=UTF-8
```

Notes

1. <http://science.thomsonreuters.com/support/>
2. <http://en.wikipedia.org/wiki/Base64>
3. <http://www.ietf.org/rfc/rfc2617.txt>
4. http://en.wikipedia.org/wiki/Basic_access_authentication

Web Service Operations

Web Service	Operation	Description	Requires a valid session identifier
WOKMWSAuthenticate	authenticate	Send user authentication credentials. If validated, return session identifier.	No
	closeSession	Sends the session identifier and close the server session. Return empty message.	Yes
WokSearchLite	search	Submits a user query and returns results.	Yes
	retrieveById	Returns records specified by unique identifiers (UIDs).	Yes
	retrieve	Returns additional records that satisfy a previous search or retrieveById operation. The number of records retrieved is limited to 100 per retrieve operation.	Yes

All WokSearchLite operations return a maximum of 100 records. The retrieve operation uses the queryId from a previous search operation to return records beyond the 100-record limit.

WOKMWSAuthenticate

authenticate

The authenticate operation creates a session and obtains a session ID. Subsequent operations must incorporate this session ID.

WSDL Declarations

The input message is defined by the WOKMWSAuthenticate:authenticate type.

The output message is defined by the WOKMWSAuthenticate:authenticateResponse type.

Request Message

For username/password authentication, authentication credentials are sent as HTTP headers. For IP authentication, no special HTTP headers are required. The SOAP message body does not contain any information.

This example shows the request sent by the CXF (client) runtime from an authentication request from a high level Web services client (Java) program generated from the WSDL using WSDL2Java.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:auth="http://auth.cxf.wokmws.thomsonreuters.com">
  <soapenv:Header/>
  <soapenv:Body>
    <auth:authenticate/>
  </soapenv:Body>
```

```
</soapenv:Envelope>
```

Response Message

The HTTP response to the authentication request contains a session identifier cookie in the HTTP headers as well as in the SOAP message body.

This is a sample HTTP response returned from the CXF server runtime. There are three HTTP headers in the response. Header 1 specifies the encoding. Header 2 specifies a cookie with cookie name, SID.

```
Headers:  
Content-Type=text/xml;charset=UTF-8  
Set-Cookie=SID=I24P@FG73NeKHan91Ic  
Date=Fri, 01 May 2009 19:15:17 GMT
```

The SID cookie looks like the following.

```
Encoding: UTF-8  
Cookie: SID=I24P@FG73NeKHan91Ic domain=null; path=null
```

The HTTP response also contains the following SOAP message.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">  
  <soap:Body>  
    <ns2:authenticateResponse xmlns:ns2="http://auth.cxf.wokmws.thomsonreuters.com">  
      <return>I24P@FG73NeKHan91Ic</return>  
    </ns2:authenticateResponse>  
  </soap:Body>  
</soap:Envelope>
```

In this example, I24P@FG73NeKHan91Ic is the session ID. It must be used by all subsequent service requests sent to Web of Knowledge Web Services.

closeSession

The closeSession operation loads the session if it is valid and then closes it and releases the session seat. All the session data are deleted and become invalid after the request is processed. The session ID can no longer be used in subsequent requests.

WSDL Declarations

The input message is defined by the WOKMWSAuthenticate:closeSession type.

The output message is defined by the WOKMWSAuthenticate:closeSessionResponse type.

Prerequisites

The session to close must exist and be active.

Request Message

The SOAP message body does not contain any information.

This is a sample closeSession request. The session identifier is sent as an HTTP header.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">  
  <soap:Body>  
    <!-- the session ID is sent in the HTTP header and is not part of the soap body -->
```

```
<WOKMWSAuthenticate:closeSession
xmlns:WOKMWSAuthenticate="http://auth.cxf.wokmws.thomsonreuters.com"/>
</soap:Body>
</soap:Envelope>
```

Response Message

The response message is an empty message, unless there is an error.

If the session was active when the request was received, this is the response:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <WOKMWSAuthenticate:closeSessionResponse
xmlns:WOKMWSAuthenticate="http://auth.cxf.wokmws.thomsonreuters.com" />
  </soap:Body>
</soap:Envelope>
```

If the session was already closed at the time the request was received, this is the response:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <soap:Fault>
      <faultcode>soap:Server</faultcode>
      <faultstring>Session not found: SID=I2b45baEdoaOLpOE4J8 NodeID=I2</faultstring>
      <detail>
        <WOKMWSAuthenticate:SessionException
xmlns:WOKMWSAuthenticate="http://auth.cxf.wokmws.thomsonreuters.com" />
      </detail>
    </soap:Fault>
  </soap:Body>
</soap:Envelope>
```

WokSearchLite

retrieve

The retrieve operation submits query returned by a previous search or retrieveById operation. However, different retrieval parameters may be used to modify the output. For example, if a search operation returns five records sorted by times cited, a subsequent retrieve operation could run the same search against the same database and edition but return 10 records sorted by relevance.

This operation is also useful for overcoming the retrieval limit of 100 records per query. For example, a search operation may find 220 records, as revealed by the content of the recordsFound element, but it returns only records 1-100. A subsequent retrieve operation could return records 101-200 and a third retrieve operation the remaining 20.

WSDL Declarations

The input message is defined by the woksearchlite:retrieve type.

The output message is defined by the woksearchlite:retrieveResponse type.

Prerequisites

A valid queryID from a previous operation. In addition, a valid session, identified by sessionID, must be active before the operation can be performed.

Query Parameters

For this operation, there is a single query parameter. Retrieve parameters define the scope of the output and the content of each record.

queryId (Type: string)

The query ID from a previous search. Cannot be null.

Example

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns2:retrieve xmlns:ns2="http://woksearchlite.v3.wokmws.thomsonreuters.com">

      <queryId>1</queryId>

      <retrieveParameters>
        <firstRecord>101</firstRecord>
        <count>100</count>
      </retrieveParameters>

    </ns2:retrieve>
  </soap:Body>
</soap:Envelope>
```

retrieveById

The retrieveById operation returns records identified by unique identifiers. The identifiers are specific to each database.

WSDL Declarations

The input message is defined by the woksearchlite:retrieveById type.

The output message is defined by the woksearchlite:retrieveByIdResponse type.

Prerequisites

The client must be entitled to each database, collection/edition, and time span to be searched. A valid session, identified by sessionID, must be active before the operation can be performed.

Query Parameters

Query parameters specify the target database and define retrieval criteria.

Name	Type	Description
databaseId	string	Database to search. Must be a valid database ID.
uid	string	A unique item identifier. It cannot be null or contain an empty string.
queryLanguage	string	This element can take only one value: en for English.

uid

The uid is a unique item identifier. It is enclosed by the UID element in database records. You can obtain a list of unique identifiers for the records returned by a search operation by using the database option RecordIDs. See the sample request for the search operation.

Database	uid source	Description	Example from Database Record
WOS	UID element	Thomson Reuters unique record identifier	WOS:000072501400019

Results Metadata

Name	Type	Description
queryId	string	The identifier of the query object. The query object is stored in the session. The session ID and queryId can be used to retrieve additional records.
recordsFound	int	The number of records found that satisfy this query.
recordsSearched	long	The number of records searched.
parent	string	
optionValue	array of labelValuesPair	Metadata about the records returned. These metadata must be specified in the request using the retrieve parameter option.
records	complex	List of records returned by the operation.

Example

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:woksearch="http://woksearchlite.v3.wokmws.thomsonreuters.com">
  <soapenv:Header/>
  <soapenv:Body>
    <woksearch:retrieveById>
      <databaseId>WOS</databaseId>

      <uid>WOS:000270372400005</uid>
      <uid>WOS:000075022300003</uid>

      <queryLanguage>en</queryLanguage>

      <retrieveParameters>
        <firstRecord>1</firstRecord>
        <count>2</count>
        <sortField>
          <name>AU</name>
          <sort>A</sort>
        </sortField>
      </retrieveParameters>
    </woksearch:retrieveById>
  </soapenv:Body>
</soapenv:Envelope>
```

search

The search operation searches the specified database edition and retrieves data. This operation returns a query ID that can be used in subsequent operations to retrieve more records.

WSDL Declarations

The input message is defined by the woksearchlite:search type.

The output message is defined by the woksearchlite:searchResponse type.

Prerequisites

The client must be entitled to each database, collection/edition, and time span to be searched. A valid session, identified by sessionID, must be active before the operation can be performed.

Query Parameters

Query parameters specify the target database and define retrieval criteria.

Name	Type	Description
queryParameters	complex	
databaseId	string	Database to search. Must be a valid database ID.
userQuery	string	User query for requesting data. The query parser will return errors for invalid queries
editions	complex	List of editions to be searched. If null, user permissions will be substituted.
symbolicTimeSpan	string	This element defines a range of load dates. The load date is the date when a record was added to a database. If symbolicTimeSpan is specified, the timeSpan parameter must be omitted. If timeSpan and symbolicTimeSpan are both omitted, then the maximum publication date time span will be inferred from the editions data.
timeSpan	complex	This element defines specifies a range of publication dates. If timeSpan is used, the symbolicTimeSpan parameter must be omitted. If timeSpan and symbolicTimeSpan are both omitted, then the maximum time span will be inferred from the editions data.
queryLanguage	string	This element can take only one value: en for English.

editions

Name	Type	Description
collection	string	Name of the collection
edition	string	Name of the edition

symbolicTimeSpan

Valid Values	Description
1week	Specifies to use the end date as today and the begin date as 1 week prior to today.
2week	Specifies to use the end date as today and the begin date as 2 weeks prior to today.
4week	Specifies to use the end date as today and the begin date as 4 weeks prior to today.

timeSpan

Name	Type	Description
begin	string	Beginning date for this search. Format is: YYYY-MM-DD
end	string	Ending date for this search. Format is: YYYY-MM-DD

Results Metadata

Name	Type	Description
queryId	string	The identifier of the query object. The query object is stored in the session. The session ID and queryId can be used to retrieve additional records.
recordsFound	int	The number of records found that satisfy this query.
recordsSearched	long	The number of records searched.
parent	string	
optionValue	array of labelValuesPair	Metadata about the records returned. These metadata must be specified in the request using the retrieve parameter option.
records	complex	List of records returned by the operation.

Sample Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:woksearchlite="http://woksearchlite.v3.wokmws.thomsonreuters.com">
  <soapenv:Header/>
  <soapenv:Body>
    <woksearchlite:search>
      <queryParameters>
        <databaseId>WOS</databaseId>
        <userQuery>TS=(cadmium OR lead)</userQuery>
        <editions>
          <collection>WOS</collection>
          <edition>SCI</edition>
        </editions>
        <timeSpan>
          <begin>2000-01-01</begin>
          <end>2011-12-31</end>
        </timeSpan>
      </queryParameters>
    </woksearchlite:search>
  </soapenv:Body>
</soapenv:Envelope>
```

```
<queryLanguage>en</queryLanguage>
</queryParameters>
<retrieveParameters>
  <firstRecord>1</firstRecord>
  <count>5</count>
</retrieveParameters>
</woksearchlite:search>
</soapenv:Body>
</soapenv:Envelope>
```

User Query

The search operation requires a user query. It consists of one or more field tags and a search string. For example, the query AU=Chen Q* searches the database for records in which Chen Q (or Chen QD, Chen QQ, Chen QY, etc) is found in the Author field.

Searching Multiple Fields

You may combine searches of different fields in the same query. A Boolean search of a single field should be enclosed in parentheses.

- TS=particle swarm AND PY=(2007 OR 2008)
- AU=(Poole M* OR Wise J*) AND AD=Univ* Illinois
- SO=Synthetic Metals AND TI=nanotub*

Search Operators

Search operators AND, OR, NOT, NEAR, and SAME may be used to combine terms in order to broaden or narrow retrieval.

Case does not matter when using search operators. For example, OR, Or, and or returns the same results.

Boolean Operators

AND

Use AND to find records containing *all* terms separated by the operator.

OR

Use OR to find records containing any of the terms separated by the operator.

NOT

Use NOT to exclude records containing certain words from your search.

SAME

In Address searches, use SAME to find records where the terms separated by the operator appear in the same address. Use parentheses to group your address terms. For example:

AD=(Portland SAME Oregon) finds records in which the address terms Portland, Oregon, or OR appear in the Address field of a record.

Be aware that SAME works exactly like AND when used in other fields (such as Topic and Title fields) and when the terms appear in the same record. For example:

TS=(cat SAME mouse) retrieves the same results as **TS=(cat AND mouse)**.

Proximity Operators

NEAR/x

Use NEAR/x to find records where the terms joined by the operator are within a specified number of words of each other. This is true even when the words are across different fields.

Replace the **x** with a number to specify the maximum number of words that separate the terms.

If you use NEAR without /x, the system will find records where the terms joined by NEAR are within 15 words of each other. For example, these searches are equivalent:

- salmon NEAR virus
- salmon NEAR/15 virus

Be aware that ...

You cannot use the AND operator in Topic and Title queries as a component of the NEAR operator. For example, the following query is valid.

TS=(Brown NEAR "spider bite")

However, **TS=(Brown NEAR spider bite)** is not valid because AND is used as an implied operator between the terms *spider* and *bite*.

On the other hand, **OG=(Brown NEAR Rhode Island)** is valid because this field tag calls for an implied NEAR operator between the terms *Rhode* and *Island*.

Use of Parentheses

Use parentheses to override operator precedence. The expression inside the parentheses is executed first.

(cadmium AND gill*) NOT Pisces finds records containing both cadmium and gill (or gills), but excludes records containing the word Pisces.

(salmon OR pike) NEAR/10 virus find records containing salmon or pike within 10 words of virus.

Wildcards

Wildcards can be used in all search fields that allow words and phrases. They can be used in a search query to represent unknown characters.

- The asterisk (*) represents any group of characters, including no character.
- The question mark (?) represents any single character.
- The dollar sign (\$) represents zero or one character.

General Rules about Wildcards

- Use wildcards for both right- and left-hand truncation.
- Wildcards may be used inside a word. For example, **odo\$r** finds odor and odour.
- You cannot use wildcards after special characters (/ @ #) and punctuation (., : ; !).
- You cannot use wildcards in a publication year search. For example, **2007** is OK but **200*** is not.

- You cannot search on a wildcard if it appears in a word or name.
- Do not use the dollar sign (\$) within quotation marks. For example, the search query "**fish farm\$**" will not retrieve records that contain either fish farm or fish farms.

Useful Tips

- The asterisk is useful when you use right-hand and left-hand truncation when searching for publication titles. For example, ***Cell*** finds *Aging Cell*, *Biocell*, *Cell Research* and other titles that follow or precede the text string ***Cell***.
- The asterisk is useful when you use left-hand truncation when searching for substances. For example, ***phosphate** finds diphosphate, monophosphate, triphosphate and other terms that precede the text string ***phosphate**.
- The dollar sign is useful for finding both the British and American spellings of the same word. For example, **flavo\$r** finds flavor and flavour.
- The question mark is useful for searching last names of authors where the last character is uncertain. For example, **Barthold?** finds Bartholdi and Bartholdy. It will not find Barthod.

Field Tags

Web of Science

Field Tags

- AD=Address
- AU=Author
- CF=Conference
- CI=City
- CU=Country
- DO=DOI
- ED=Editor
- FG=Grant Number
- FO=Funding Agency
- FT=Funding Text
- GP=Group Author
- IS=ISSN/ISBN
- OG=Organization - Enhanced

- OO=Organization
- PS=Province/State
- PY=Year Published
- RID=ResearcherID
- SA=Street Address
- SG=Suborganization
- SO=Publication Name
- SU=Research Area
- TI=Title
- TS=Topic
- UT=Accession Number
- WC=Web of Science Category
- ZP=Zip/Postal Code

Retrieve Parameters

Retrieve parameters define the scope of the output and the content of each record. They specify which records are returned, the sort order of the records, the data included in each record and the metadata about each record returned. Retrieve parameters are grouped in a structure called retrieveParameters.

Name	Type	Description
firstRecord	int	Required. First record in results to return. Must be greater than zero.
count	int	Required. Number of records to display in the result. Cannot be less than 0 and cannot be greater than 100. If count is 0 then only the summary information will be returned: No records will be returned.
sortField	complex	Optional. Sort criteria. IMPORTANT: if a sortField was provided in the original request (via a search, citingArticles, relatedRecords, or retrieveById operation, then the same sortField must be specified here.
option	complex	Optional. Requests that additional metadata be returned along with the records. These parameters are specific to each database. See Database Options (page 25).

sortField

Name	Type	Description
name	string	Name of the field to order by. Use a two-character abbreviation to specify the field.
sort	string	Must be A (ascending) or D (descending). The sort parameter can only be D for Relevance and TimesCited.

Sort Fields

Abbreviation	Field
AU	Author
CF	Conference Title
CG	Page
CW	Source
CV	Volume
CY	Publication Year
LC	Local Times Cited
LD	Load Date
PG	Page
PY	Publication Year
RS	Relevance
SO	Source
TC	Times Cited
VL	Volume

Database Editions

Each database has a database ID (the databaseld), which is the same as its collection ID. A database also has at least one edition. The edition parameter is optional. You can request data from multiple databases in a single request by using the WOK (All Databases) databaseld.

Web of Science

databaseld

WOS

editions

The query parameter <editions> has two child elements: collection and edition.

Collection	Edition	Edition Full Name
WOS	SCI	Science Citation Index Expanded
WOS	SSCI	Social Sciences Citation Index
WOS	AHCI	Arts & Humanities Citation Index
WOS	ISTP	Conference Proceedings Citation Index - Science
WOS	ISSHP	Conference Proceedings Citation Index - Social Sciences
WOS	IC	Index Chemicus
WOS	CCR	Current Chemical Reactions
WOS	BSCI	Book Citation Index - Science
WOS	BHCI	Book Citation Index - Social Sciences and Humanities

Database Options

Database options are retrieve parameters defined in key-value pairs. The RecordIDs option enables you to obtain a list of record IDs, which you can then use in the retrieveById operation.

Key	Value	Description
RecordIDs	On	Return a list of unique record identifiers.
RecordIDs	Off	

Bandwidth Throttling

Web of Knowledge Web Services use throttling to manage the number of requests processed per second and the amount of data sent per request. Throttling ensures consistent and reliable performance for all users of the services.

All throttling messages begin with the text **Request denied by Throttle server**. Each message indicates the reason for the denial.

Reason	Explanation	Your Action
Throttle Server is not available.	The service is temporarily unavailable.	Wait a few minutes and then resubmit your request.
Internal Error	Web services could not process your request.	Contact Thomson Reuters Technical Support ¹ . There may not be a problem with your request. However there is a problem with our Web service. Please have the details within this message available for Thomson Reuters Technical Support.
limit of <number> requests per period has been exceeded for throttle AUTH-ReqPerPeriod	The number of requests for a new session is limited to 5 per five-minute period.	Resubmit the request. It may be necessary to adjust your Web client to limit the number of requests submitted per second.
limit of <number> requests per period has been exceeded for throttle REQ-ReqPerSec	The number of data requests (user queries) is limited to 2 per second.	Resubmit the request. It may be necessary to adjust your Web client to limit the number of requests submitted per second.
amount requested exceeds limit of 100 per request for throttle REC-AmtPerReq	Each search operation limits the number of records retrieved to 100 per request.	Submit a request for additional data. The operation retrieve enables you to overcome the 100 records per query limit.
amount requested exceeds limit of 100 per request for throttle REF-AmtPerReq	The citedReferences operation limits the number of references retrieved to 100 per request.	Submit a request for additional data. The operation citedReferencesRetrieve enables you to overcome the 100 references per query limit.
amount requested exceeds limit of <number> per period	The number of records retrieved per period is specified by your license agreement.	You cannot request more data. However, if you believe that you are entitled to more data, contact Thomson Reuters Technical Support.

Notes

1. <http://science.thomsonreuters.com/support/>

Error Messages

Error messages may be classified into three categories:

- Session Errors
- SOAP Request Errors
- Web Service Exception Errors

Errors that fall into the first two categories can generally be remedied by correcting the request or simply by resubmitting it. Web Service Exception Errors indicate a problem with the Web Service itself. This type of message includes the following instruction: **Remedy: Call customer support. This is not a problem within your SOAP client.** Before calling customer support, wait a short period of time and then resubmit your request. Often problems with the Web service are temporary.

Session Errors

Error Message	Meaning/Action
Session identifier cookie value cannot be null or an empty string. It is required that the high level Web service client program participate in the session initialized by the server.	Your request for data does not have a session ID. Please establish a new session. Be sure that the session ID is automatically added to your request for data.
There is a problem with your session identifier (SID). Reason: Session identifier [{0}] is invalid: it has no entity id. Remedy: This is an entitlement issue. Contact customer support.	The session ID cannot be linked to a valid customer account.
There is a problem with your session identifier (SID). Reason: Error received from a server supporting the Web service. Cause: Supporting server error message = [{1}]. Supporting server error code = [{0}]. Remedy: If the session identifier is expired or invalid, get a new session identifier and submit your request again. If the session identifier is missing correct your SOAP client. Otherwise call customer support.	This message appears most often when a session has expired. Execute the authenticate operation again in order to obtain a new session ID.

SOAP Request Errors

All SOAP request error messages start with **The SOAP request message is invalid.**

Reason	Meaning/Action
The queryParameters element cannot be nil.	Each WokSearch operation requires certain query parameters. Consult the appropriate section of this guide for a list of valid query parameters for a WokSearch operation.
Cannot specify timeSpan and symbolicTimeSpan together: one or both must be nil.	The number of records retrieved by a search operation may be limited by load date (symbolicTimeSpan) or publication date (timeSpan). You may define one or the other but not both in the same request.

The timeSpan element cannot be nil.	The search operation requires the timeSpan query parameter if symbolicTimeSpan is not used.
The databaseld element cannot be nil.	Every request for data must specify a target database using the databaseld element.
The databaseld element cannot be an empty string: it cannot be a string of length 0.	The databaseld element must contain a valid database ID.
The databaseld [{0}] is invalid.	Double-check the spelling of the database ID of the target database.
The editions element cannot be nil.	The editions element must contain the abbreviation of the database edition you wish to search.
The queryLanguage element cannot be nil.	The queryLanguage must be specified in all operations except retrieve. It has only one value: en for English.
The queryLanguage element cannot be an empty string: it cannot be a string of length 0.	The queryLanguage must be specified in all operations except retrieve. It has only one value: en for English.
The queryld element cannot be nil.	The retrieve operation uses a query returned by a previous operation to obtain additional records or a data set defined by different retrieve parameters. This operation require a valid queryld.
The queryld element cannot be an empty string: it cannot be a string of length 0.	The retrieve operation uses a query returned by a previous operation to obtain additional records or a data set defined by different retrieve parameters.
The uid element cannot be nil.	The retrieveById operation requires that the uid of a record be specified. The uid is a unique item identifier assigned by Thomson Reuters.
The uid element cannot be an empty string: it cannot be a string of length 0.	The uid specified in a retrieveById operation must be valid.
The list of uid elements cannot be nil.	You may specify multiple uids in the retrieveById operation. Make sure that each <uid> element contains a valid uid.
There must be at least one uid element in the SOAP request message.	You must specify a uid in the retrieveById operation.
The [{0}]th uid element cannot be nil.	Make sure that each uid element contains valid content.
The [{0}]th uid element cannot be an empty string: it cannot be a string of length 0.	Make sure that each uid element contains valid content.
The retrieveParameters element cannot be nil.	Retrieve parameters define the scope of the output and the content of each record. The parameters firstRecord and count are required.
The count element cannot be negative.	
The firstRecord element cannot be less than one.	
Error received from a server supporting the Web service. Supporting server error message = [{2}]. Supporting server error code = [{1}]. Supporting server API call = [{0}].	
Error received from a server supporting the Web service. Cause: The following input is invalid [{0}].	
The userQuery element is invalid. Cause: {0}.	Check the syntax of the user query. There may be a missing equal sign or parenthesis.

Web of Science fieldName Values

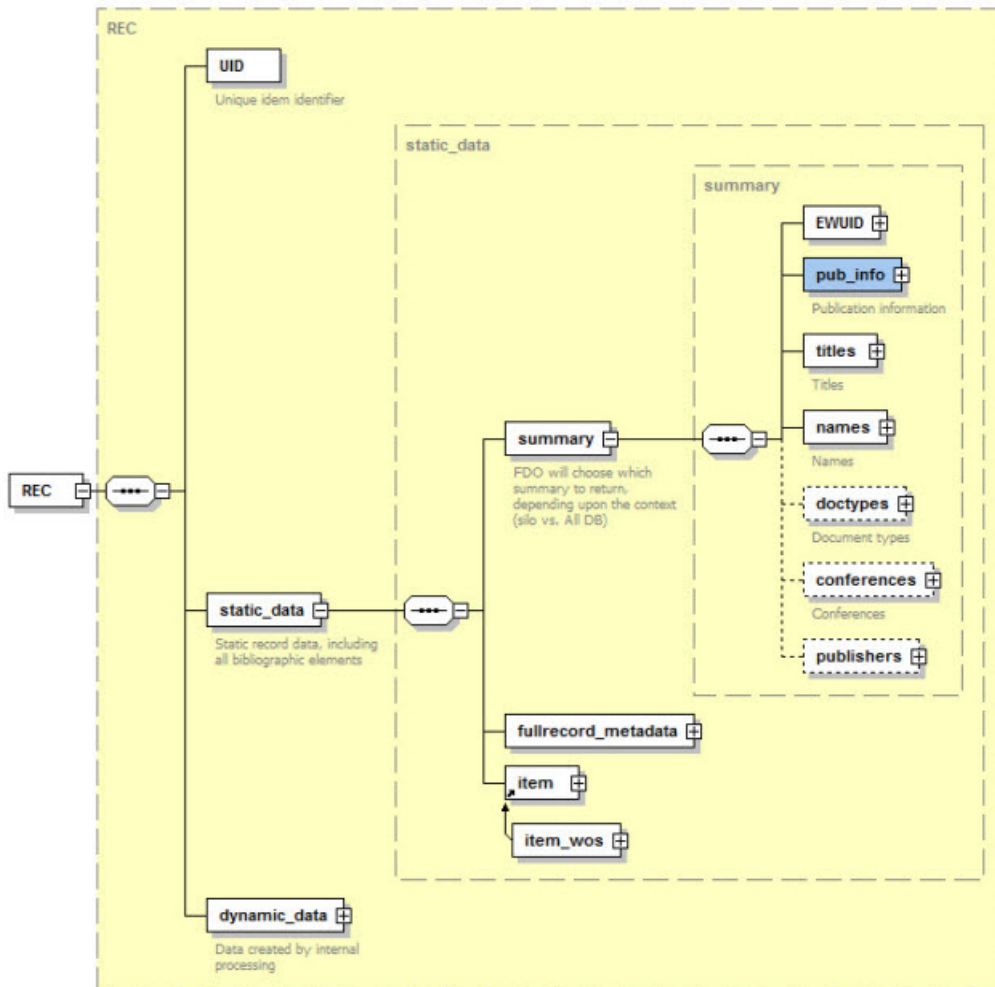
The table on page 30 maps Web of Science field names to schema elements. The element name should be used in the fieldName [retrieve parameter](#) (page) to limit records to selected fields. For example, the following retrieve parameters will return records that contain 1) author addresses, 2) funding text, and 3) funding agency and grant number.

```
<retrieveParameters>

  <viewField>
    <collectionName>WOS</collectionName>
    <fieldName>addresses</fieldName>
    <fieldName>fund_text</fieldName>
    <fieldName>grant</fieldName>
  </viewField>

</retrieveParameters>
```

Only the name of the element (in boldface in the table) can be used as a fieldName parameter. You cannot use a full or partial XPath as a fieldName parameter. The XPath is provided to assist you in finding the element in the schema as well as in the full Web of Science record. The full XPath begins with **/records/records/REC**. For example, the full XPath for the pub_info element is /records/records/REC/static_data/summary/pub_info. Here is the schema view of the XPath for pub_info in the base schema scientific.thomsonreuters.com.schemawok5.X.public:



Because many fields are uniquely identified by a combination of element and attribute, you may not be able to limit record content to a precise degree. For example, the fieldName parameter **titles** will always return document titles, publication names (both full and abbreviated), and book titles. You cannot limit retrieval to only document (item) titles or only publication (source) titles because *item* and *source* are attribute values, not elements. You cannot include attributes in fieldName parameters.

Web of Science fieldName Table

Web of Science Field Name	Schema Element (XPath)
Publication Type possible values: <ul style="list-style-type: none"> • Book • Book in series • Books • Books in series • Journal 	.../static_data/summary/pub_info

Authors	.../static_data/summary/ names
Author Full Name	.../static_data/summary/names/name/ full_name
Book Authors	.../static_data/summary/ names
Group Authors	.../static_data/summary/ names
Book Group Authors	.../static_data/summary/ names
Document Title	.../static_data/summary/ titles
ResearcherID Number	.../static_data/summary/ names
Editors	.../static_data/summary/ names
Publication Name	.../static_data/summary/ titles
Book Series Title	.../static_data/summary/ titles
Book Series Subtitle	.../static_data/summary/ titles
Language	.../static_data/fullrecord_metadata/languages/ language
Document Type	.../static_data/summary/ doctypes
Conference Title	.../static_data/summary/conferences/conference/conf_titles/ conf_title
Conference Date	.../static_data/summary/conferences/conference/conf_dates/ conf_date
Conference Host	.../static_data/summary/conferences/conference/ conf_host
Conference Location	.../static_data/summary/conferences/conference/ conf_locations
Conference Sponsors	.../static_data/summary/conferences/conference/ sponsors
Author Keywords	.../static_data/fullrecord_metadata/ keywords
Keywords Plus [®]	.../static_data/item/ keywords_plus
Abstract	.../static_data/fullrecord_metadata/abstracts/ abstract
Author Address	.../static_data/fullrecord_metadata/ addresses
Reprint Address	.../static_data/item/ reprint_contact
E-mail Address	.../static_data/summary/names/name/ email_addr
Funding Agency and Grant Number	.../static_data/fullrecord_metadata/fund_ack/grants/ grant
Funding Text	.../static_data/fullrecord_metadata/fund_ack/ fund_text
Cited References	[Use the citedReferences and citedReferencesRetrieve operations to retrieve an item's cited references.]
Total Times Cited Count (WoS, BCI, and CSCD)	[Cannot be specified in a fieldName retrieve parameter.]
Cited Reference Count	.../static_data/fullrecord_metadata/ refs
Times Cited	[Cannot be specified in a fieldName retrieve parameter.]
Publisher	.../static_data/summary/publishers/publisher/ names
Publisher City	.../static_data/summary/publishers/publisher/ address_spec
Publisher Address	.../static_data/summary/publishers/publisher/ address_spec
Web of Science Category	.../static_data/fullrecord_metadata/ category_info
Subject Category	.../static_data/fullrecord_metadata/ category_info
International Standard Serial Number (ISSN)	.../dynamic_data/cluster_related/ identifiers
International Standard Book Number (ISBN)	.../dynamic_data/cluster_related/ identifiers
Book Digital Object Identifier (DOI)	.../dynamic_data/cluster_related/ identifiers

29-Character Source Abbreviation	.../static_data/summary/ titles
ISO Source Abbreviation	.../static_data/summary/ titles
Publication Date	.../static_data/summary/ pub_info
Year Published	.../static_data/summary/ pub_info
Volume	.../static_data/summary/ pub_info
Issue	.../static_data/summary/ pub_info
Part Number	.../static_data/summary/ pub_info
Supplement	.../static_data/summary/ pub_info
Special Issue	.../static_data/summary/ pub_info
Beginning Page	.../static_data/summary/pub_info/ page
Ending Page	.../static_data/summary/pub_info/ page
Article Number	.../dynamic_data/cluster_related/ identifiers
Page Count	.../static_data/summary/pub_info/ page
Chapter Count in a Book	.../static_data/item/ book_chapters
Digital Object Identifier (DOI)	.../dynamic_data/cluster_related/ identifiers
Document Delivery Number	.../static_data/item/ ids
Accession Number	.../ UID