

NewsEdge™

OPENS API SEARCH LANGUAGE GUIDE

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Contents

| | |
|--|-----------|
| Introduction | 3 |
| Overview | 3 |
| Constructing Query Terms | 4 |
| Keywords and Phrase Search Syntax..... | 4 |
| Boolean, Proximity, and Wildcard Operations | 5 |
| Metadata Expressions | 6 |
| ACME Industry and Subject | 6 |
| Geography..... | 7 |
| Organizations | 7 |
| People..... | 8 |
| Content Sources | 8 |
| Appendix A: Stop Words | 9 |
| Appendix B – Valid Content Types for NewsEdge Sources | 9 |
| Appendix C –NewsEdge Source Languages | 10 |

Introduction

Develop precise, powerful queries for searching news and business information using the NewsEdge Search Language and the OPENS API. This document describes the query string language for use with the OPENS API.

Overview

Valid search queries use common elements and have a basic structure. The common elements are:

- » Search terms – essentially words, phrases and metadata. With the OPENS API query, each word or word within a phrase is treated as a **stem**, or root-word, and a search will return all documents containing the stem and any of its **inflected**, or derivative, forms. Stemming is performed, by default, unless explicitly turned off (see Search for Exact Keyword or Phrase Syntax).
- » Operators for combining search terms – including Boolean (AND, OR, NOT).
- » Delimiters for nesting terms and operators and for specifying the scope of your search – use simple parentheses () for nesting, brackets {} for searching only text, braces [] for searching only metadata, and neither brackets nor braces to search both text and metadata.
- » Term Modifiers for targeting text or metadata searches – including text location for text searches, text frequency for text searches, and graded-facet-relevance or facet-use for metadata searches
- » Character substitution, or wildcard, operators for generalizing search terms – using ? for zero or single character and * for zero or multi-character substitution within any search term.

These five elements combine to form the core of what you are seeking – what we will call Query Terms, for simplicity. There are two other elements that modify, or focus, our search, viz.:

- » Search Modifiers – terms that set date range, stemming (root-word), and high-precision parameters for the search.
- » Returned Results Filters – terms that control the formatting and display of search results.

The basic form of a valid NewsEdge search:

(Query Terms)

Note that the entirety of a search's Query Terms is enclosed in parentheses. For example, the following is a valid search query:

```
(({{oil}.location=abstract AND {price}.location=abstract) WITHIN,3 ({{increase}.location=abstract) AND  
([COM:/acorn=2361158299] OR [COM:/XOM] OR [COM:"British Petroleum"]))
```

Redisplayed on multiple lines for clarity...

```
(  
    ({{oil}.location=abstract AND {price}.location=abstract)  
    WITHIN,3  
    ({{increase}.location=abstract)  
    AND  
    ([COM:/acorn=2361158299] OR [COM:/XOM].use>mention OR [COM:"British Petroleum"]))  
)
```

Translated into English (using the Syntax Tables provided in this document), I am searching for stories with the following characteristics

1. The root-word, or **stem**, 'oil', or its derivative, or **inflected**, words (e.g., oils, oily, etc.), should appear as text in the story headline or lead paragraph, **and**
2. The root-word 'price', or its derivative words (e.g., prices) should appear as text in the story headline or lead paragraph, **and**
3. These words should be within three or fewer words (either before or after) of the root-word 'increase' or its derivatives in the text of the headline or lead paragraph of the story, **and**
4. **Either** the company Royal Dutch Shell (as identified by its Acquire Media ACORN), ExxonMobil (as identified by the presence of its ticker symbol in metadata) is the primary focus of the story **or** the company, British Petroleum, mentioned by name, are in the story.

In short, find stories about spikes in the price of oil that mention Royal Dutch Shell, ExxonMobil or British Petroleum.

Constructing Query Terms

The core of every search is its query terms. Your query terms will be composed of keywords, exact phrases, and metadata expressions. These elements combine with operators – Boolean, proximity, and character/wildcard – to create valid query statements. In general, case does not matter when you type/enter these elements, including proper names. The following sections and tables enumerate the proper syntax for constructing your query terms.

Keywords and Phrase Search Syntax

Keywords use standard text characters, in the search languages supported by NewsEdge, to specify concepts you'd like to find. For example, you can use the term 'president' in English or the term in Hebrew, to submit an OPENS API query for this concept in English or Hebrew-based stories, respectively. Certain words and characters, termed stop words, are removed, or excluded, automatically prior to the execution of an OPENS API search. A list of stop words is provided in [Appendix A](#).

Enclosing a collection of words inside quotation marks searches for results matching the phrase. To search for an exact keyword or phrase, use the caret symbol before the search term. All words and characters (except punctuation characters, which are ignored), including stop words, following the caret will be treated as an exact match for searching purposes.

Keywords and exact phrases can be used to search specific contents or locations within a story, using delimiters. Brackets {} limit search to the text of a story, braces [] limit search to the metadata associated with the story, and a location-modifier can limit text search to the three principal locations in a story (the headline, the abstract/summary, and the body of the story).

| VALID SYNTAX | SEARCH EXECUTED |
|---------------------------------|--|
| searchTerm | Search text and metadata of all stories for stem (root-word(s) and derivative forms) of searchTerm e.g., run also finds run, runs, running in either the story text or the metadata. |
| "search term" | Search for the phrase "search Term". e.g., "home run" also finds "home runs", "homes run", "home running", "homes running" in either the story text or metadata. |
| ^searchTerm ^"search term" | Search for exact text or phrase. No stemming occurs. e.g., ^run finds exact match for word run in story text or metadata; e.g., ^"home run" finds exact match for this phrase in story text or metadata. |
| {searchTerm} {"search term"} | Search text of all stories for stem of searchTerm e.g., {bank} finds bank, banks, banking, banked in the story text only |
| [searchTerm] ["search term"] | Search metadata of all stories for the stem of searchTerm e.g., [bank] finds bank, banks, banking, banked in the story metadata fields. |

| VALID SYNTAX | SEARCH EXECUTED |
|---|--|
| <pre> {searchTerm}.location=headline {searchTerm}.location=abstract {"search Term"}.location=headline {"search Term"}.location=abstract {^searchTerm}.location=headline {^searchTerm}.location=abstract {^"search Term"}.location=headline {^"search Term"}.location=abstract </pre> | <p>Search for searchTerm in a specific location of the story text. Without the location suffix implies search across all text of story. Available location values are headline or abstract (abstract is the headline plus lead paragraph or summary).</p> <p>e.g., {bank}.location=headline finds banks, banking, banked in the headline text fields;</p> <p>e.g., {"banking risk"}.location=abstract finds the exact phrase banking risk in the headline or lead paragraph.</p> |
| <pre> {searchTerm }.occurrence># {"search Term"}.occurrence># {searchTerm }.location=headline,occurrence># {searchTerm }.location=abstract,occurrence># {searchTerm }.occurrence>=# {searchTerm }.location=headline,occurrence>=# {searchTerm }.location=abstract,occurrence>=# </pre> | <p>Search for searchTerm or "search term" in the text of the story found # times in a specific location.</p> <p>e.g., {"billing practice"}.occurrence>=2 finds stories with this phrase and its stemmed versions, at least twice in the story text.</p> |

Boolean, Proximity, and Wildcard Operations

Combining keywords, exact phrases, and metadata expressions with operators is the most common method of increasing, or reducing, the scope of results obtained from a search. The OPENS API supports a collection of Boolean, proximity, and wildcard operators for combining search terms into more precise queries. These operators combine any valid keyword or phrase expressions outlined above; Boolean operators also operate to modify or combine multiple metadata expressions (see the next section).

Boolean operators (AND, OR, NOT) evaluate according to conventional mathematical definitions. Proximity operators are either bi-directional (for NEAR and WITHIN, term order does not matter) or uni-directional (for FOLLOWEDBY, term order does matter).

Wildcard operators extend your search beyond the range of stemmed variants (derivative words built from a common root-word), helping find documents containing words with alternative spellings.

| VALID SYNTAX | SEARCH EXECUTED |
|--|---|
| searchTerm1 BOOL searchTerm2 | Combine search terms Term1 with Term2 using a Boolean operator. Conventional Boolean operators AND, OR, and NOT are available |
| (searchTerm1 BOOL searchTerm2) | Nesting (using simple parentheses) of search terms Term1 and Term2, using a Boolean operator |
| searchTerm1 NEAR,# searchTerm2 searchTerm1 WITHIN,# searchTerm2 | Search for Term1 occurring within # words of Term2. This proximity operator is bi-directional – Term1 appears either before or after Term2. This operator will not operate on metadata expressions. |
| searchTerm1 FOLLOWEDBY,# searchTerm2 | Search for Term1 appearing # words, or fewer, before Term2. This proximity operator is uni-directional – Term1 must appear before Term2. This operator will not operate on metadata expressions. |
| <pre> ({searchTerm1}.location=abstract WITHIN,# {searchTerm2}.location=abstract) ({searchTerm1}.location=abstract FOLLOWEDBY,# {searchTerm2}.location=abstract) </pre> | Search for Term1 appearing # words, or fewer, before or following Term2, where both Term1 and Term2 appear in the story headline or lead paragraph. When using the location modifier with a proximity operator, both Term1 and Term2 must appear in the same location. |
| search?erm* | <p>Search using character substitution, or wildcard searching. A question-mark character (?) substitutes for zero or a single character.</p> <p>e.g., banke? Finds stories with the term banked or banker.</p> <p>Note: NewsEdge maintains an English synonyms list which automatically finds stories written in the American and British spellings, e.g., organization and organisation or color and colour, making it unnecessary to use the ? character.</p> <p>A star character (*) replaces zero or more characters. A * wildcard may not be in either the first or second character of a search term e.g., color* retrieves color, colour, colors, colours, colored, coloured, coloring, colouring, colorblind, colourblind, etc.</p> |

Metadata Expressions

NewsEdge analyzes and appends metadata to every story prior to its availability for search. The metadata applied to each story is based upon 1) the **Acquire Media Metadata Enhancer (ACME)** taxonomy of industries, subjects, and geo-locations and 2) NewsEdge categorizers for identifying organizations, sources, and people. The facets of these six categories can serve as query terms and will return stories tagged with the specified metadata. The basic format for a metadata expression is [CATEGORY:expression], where **expression** determines which element(s) in the CATEGORY to include as query terms. Each **expression** must be either 1) a valid search term using keywords and phrases, or 2) a valid metadata code for that CATEGORY.

Each CATEGORY has a valid abbreviation. They are:

- » IND for ACME Industry; or use INDC if **expression** is a valid ACME-code
- » SUB for ACME Subject; or use SUBC if **expression** is a valid ACME-code
- » GEO for ACME Geo-location; or use GEOC if **expression** is a valid ACME-code
- » COM for Organizations
- » PEO for People; or use PEOC if **expression** is a valid ACME-code
- » SRC for Source; or use SRCC if **expression** is a valid ACME-code

Here, ACME-code is shorthand for a valid node-name in the ACME taxonomy.

ACME INDUSTRY AND SUBJECT

For metadata expressions involving ACME Industry and Subject, an additional modifier is available to adjust precision and recall. Each metadata element added to the story is 'graded', from "A" through "D", indicating the degree of relevance the story has with respect to the category. Stories with an "A" grade have an exceptional relevance with respect to a category; those with a "D" have just enough relevance to receive the categorization. Using the "grade" modifier for Industry and Subject metadata expressions is a useful way to reduce (require higher grades) or expand (accept lower grades) the number of stories retrieved with a specified metadata expression.

| VALID SYNTAX | SEARCH EXECUTED |
|--|--|
| [IND:searchTerm] | Search text and metadata of all stories for stem (root-word(s) and derivative forms) of searchTerm e.g., run also finds run, runs, running in either the story text or the metadata. |
| [SUB:searchTerm] | Use any ACME subject facet whose name or code contains the stem of searchTerm e.g., [SUB:merger] finds any story tagged with an ACME subject code with word merger in its name or code. |
| [INDC:ACME_code] [SUBC:ACME_code] | Use the Industry or Subject facets whose code matches the valid ACME code e.g., [INDC:ii/motor] finds stories tagged with the ACME Motor Vehicle and Parts industry code [SUBC:is/biz.manda] finds stories tagged with the ACME Mergers and Acquisitions subject code. |
| [INDC:ACME_code].grade<=A [SUBC:ACME_code].grade<=>B [INDC:ACME_code].grade<=>C [SUBC:ACME_code].grade>=D | Use the indicated facet(s) and then filter for nodes that have a grade that is >, >=, =, <=, < the indicated grade value e.g., [INDC:ii/motor].grade=A finds stories tagged with the ACME Motor Vehicle and Parts industry code with grade "A". |

GEOGRAPHY

Metadata expressions using valid ACME Geography codes support the modifier, use which can have two values, either primary or secondary. Primary indicates the location is more significant to the story, while secondary indicates the location is mentioned in the story.

| VALID SYNTAX | SEARCH EXECUTED |
|--|---|
| [GEO:searchTerm] | Use the Geography facet whose name or code contains the stem of searchTerm e.g., [GEO:"New York"] finds any story tagged with an ACME location code with the phrase New York in its name or code. |
| [GEOC:ACME_code] [GEOC:ACME_code].use>secondary [GEOC:ACME_code].use=primary | Use the Geography facet whose name or code matches the valid ACME geo-code e.g., [GEOC:lu/us.ny.nyc].use>secondary finds stories where ACME location code for New York City is applied with a primary focus. |

ORGANIZATIONS

Metadata expressions involving Organization categorization/identification support several alternatives for creating a valid expression. The first option is to use the acorn value (ACquire media ORganizational Number). Every organization included in the NewsEdge Company Authority database is assigned a unique acorn value. For publicly traded companies, the most useful, takes advantage of a company's ticker symbol(s) to select stories whose metadata includes the company. Alternatively, other financial identifiers (including orbisid, CUSIP, and ISIN numbers) also identify specific companies for metadata searching. Metadata expressions involving Organization identity also support a specific modifier, use. The use modifier has two values, primary and mention. Primary indicates that the Organization(s) identified is primary to the story's meaning, while mention indicates that the reference is a secondary mention in the story.

| VALID SYNTAX | SEARCH EXECUTED |
|---|--|
| [COM:searchTerm] [COM:"search term"] | Use an Organization facet whose name or codes contain the searchTerm or "search term" e.g., [COM:Apple] finds stories for any organization with the word Apple in its name; [COM:"TD Bank"] finds stories for organizations with TD Bank in its name. |
| [COM:/ticker_code] | Use an Organization facet whose ticker symbol on any exchange matches ticker_code e.g., [COM:/TD] finds stories for organizations with the ticker symbol TD. |
| [COM:/exchange.ticker_code] | Use an Organization facet whose ticker symbol matches ticker.code on the specified exchange e.g., [COM:/nyse.td] finds stories for the ticker TD on the NYSE exchange. |
| [COM:/numericTerm] | Use an Organization facet whose ACORN, CUSIP, or ISIN number matches numericTerm e.g. [COM:/2108696161] finds stories for the organization with this number as one of its organization codes, whether it is the ACORN, CUSIP, or ISIN number. |
| [COM:/acorn=numericTerm] [COM:/orbisid=numericTerm] [COM:/cusip=numericTerm] [COM:/isin=numericTerm] | Use an Organization facet whose specified identifier number matches numericTerm e.g., [COM:/acorn=2108696161] [COM:/cusip=891145674] are the different numeric values to search for news on TD Bank. |
| [COM:/acorn=2108696161].use>mention [COM:/exchange.ticker].use>mention | Form a COM metadata expression using either /acorn, /ticker.code or /exchange.ticker_code format and then filter the results based on whether the use of the organization in the story is as primary subject or is merely a mention e.g., [COM:/acorn=2108696161].use>mention [COM:/nyse.td].use>mention finds stories tagged for TD Bank which are considered more than just a mention. |

PEOPLE

Identification of people using APIN number (Acquire media Person Identifier Number) or proper names is supported using the word and phrase syntax described below. The 'use' modifier for this metadata element supports the selection of stories whose author (byline) contains the identity specified in the expression.

| VALID SYNTAX | SEARCH EXECUTED |
|--|--|
| [PEO:single_name] | Use the People facet for the name matching the unstemmed single_name, e.g., Gates. |
| [PEO:"Full Name"] | Use the People facet for the name matching "Full Name", e.g., [PEO:"Bill Gates"] |
| [PEOC:/apin=personnumericTerm] | Use the People facet for the person ID matching a valid NewsEdge personnumeric_term. e.g., [PEOC:/apin=3523862123] to find stories tagged with the APIN for Bill Gates. |
| [PEO:"Full Name"].use=author [PEO:single_name].use=author | Use the indicated facet and then filter for its use in a story's author (or byline) field. e.g., [PEO:Barlow].use=author |

CONTENT SOURCES

Content sources are categorized in NewsEdge, permitting both specific source selections, as well as filtered searching using/excluding whole categories of sources, e.g., all newspapers, or European magazines.

| VALID SYNTAX | SEARCH EXECUTED |
|--|--|
| [SRC:searchTerm] | Use any Source facet whose name or code contains the stem of searchTerm e.g., [SRC:gazette] finds stories from sources with Gazette in the source name or code. |
| [SRC:"search term"] | [SRC:"search term"] Use any Source facet whose name or code contains the phrase "search term" e.g., [SRC:"charleston gazette"] finds stories from sources with "Charleston Gazette" in the source name or code. |
| [SRCC:source_code] | Use any Source facets whose source ID matches a valid NewsEdge source_code e.g., [SRCC:charleston_gaz] finds stories from the Charleston Gazette source code. |
| [SRCRIGHTC:rights_code] | Filter Source to include only those sources whose rights clearance status is equal to rights_code. Permissible values are either CLEARED or LINKED. e.g., [SRCRIGHTC:cleared] finds stories with the source right as cleared. |
| [SRCCONTENTC:contenttype_code] | Filter Source to include only those sources whose content type is equal to sourcetype_code. Permissible values are listed in the Appendix B . e.g., [SRCCONTENTC:NEWSWIREGEN] finds stories from sources classified as General Newswire. |
| [SRCCLASSC:PI/ACME_code] [SRCCLASSC:PX/ACME_code] | Filter Source to include only those sources whose industry or subject classification equal to ACME_code. Permissible values are ACME taxonomy codes for subject and industry e.g., [SRCCLASSC:PI/AERODEF] finds stories from Aerospace and Defense industry sources. [SRCCLASSC:PX/APPSCI.AVIATION] finds stories from sources classified as about the Aerospace Technology subject. |
| [LAN:lang_code] | Filter Source to include only those sources whose language is equal to lang_code. Permissible values are listed in the Appendix C . e.g., [LAN:en] finds stories from sources classified as English language. |
| [SRCGEOORGC:RR/geo_code] | Filter Source to include only those sources whose geographic origin is equal to geo_code. Permissible values are ACME taxonomy codes for geo-location e.g., [SRCGEOORGC:RR/AM] finds stories from sources with geographic origin Americas. |
| [SRCGEOFOCC:GR/geo_code] | Filter Source to include only those sources whose geographic focus is equal to geo_code. Permissible values are ACME taxonomy codes for geo-location e.g., [SRCGEOFOCC:GR/AM] finds stories from sources focused on Americas. |

Appendix A: Stop Words

The following words are automatically excluded as search terms, unless they are enclosed in quotation marks " " as part of a phrase expression.

"a", "an", "and", "are", "as", "at", "be", "but", "by", "for", "if", "in", "into", "is", "it", "no", "not", "of", "on", "or", "such", "that", "the", "their", "then", "there", "these", "they", "this", "to", "was", "will", "with", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k", "l", "m", "n", "o", "p", "q", "r", "s", "t", "u", "v", "w", "x", "y", "z", "corp", "mr", "mrs", "ms", "mz", "about", "after", "all", "also", "any", "because", "been", "can", "co", "could", "from", "had", "has", "have", "he", "her", "his", "inc", "its", "last", "more", "most", "one", "only", "other", "out", "over", "says", "she", "so", "some", "than", "up", "we", "were", "when", "which", "who", "would"

Appendix B – Valid Content Types for NewsEdge Sources

| CONTENT TYPE | VALID CODE |
|--|--------------|
| Academic Abstract | ACAD_AB |
| Academic Journal | ACAD_JOURN |
| Blog | BLOG |
| Broadcast Transcript | TRANS_BROAD |
| Business & Financial Newswire | NEWSWIREBIZ |
| Column or Feature | COLUMN |
| General Newswire | NEWSWIREGEN |
| Government Document | GOVT_DOC |
| Magazine | MAGAZINE |
| News Abstract or Digest | NEWS_AB |
| Newsletter | NEWSLETTER |
| Newspaper | NEWSPAPER |
| Newspaper Abstract | NEWSPAPER_AB |
| Patent Abstract | PATENT_AB |
| Press Release | PR |
| Press Release Abstract | PR_AB |
| Professional, Business, or Trade Journal | TRADE_JOURN |
| Public Hearing & Regulatory Transcript | TRANS_GOVT |
| Regulatory Filing | REG_FILING |
| Report, Analysis, Commentary | REPORT |
| Trade Journal Abstract | TRADE_AB |
| Website | WEB |

Appendix C –NewsEdge Source Languages

NewsEdge sources content and supports searching in the following source languages.

| LANGUAGE | VALID TWO-LETTER CODE (ISO-639-1) |
|---------------|-----------------------------------|
| Albanian | sq |
| Arabic | ar |
| Armenian | hy |
| Azerbaijani | az |
| Bengali | bn |
| Bosnian | bs |
| Bulgarian | bg |
| Catalan | ca |
| Chamorro | ch |
| Chinese | zh |
| Croatian | hr |
| Czech | cs |
| Danish | da |
| Dutch | nl |
| English | en |
| Estonian | et |
| Finnish | fi |
| French | fr |
| Georgian | ka |
| German | de |
| Greek | el |
| Gujarati | gu |
| Hebrew | he |
| Hindi | hi |
| Hungarian | hu |
| Icelandic | is |
| Indonesian | id |
| Italian | it |
| Japanese | ja |
| Kannada | kn |
| Korean | ko |
| Latvian | lv |
| Lithuanian | lt |
| Malay | ms |
| Malayalam | ml |
| Marathi | mr |
| Nepali | ne |
| Northern Sami | se |

| LANGUAGE | VALID TWO-LETTER CODE (ISO-639-1) |
|-------------------|-----------------------------------|
| Norwegian | no |
| Norwegian Bokmål | nb |
| Norwegian Nynorsk | nn |
| Panjabi | pa |
| Pashto | ps |
| Persian | fa |
| Polish | pl |
| Portuguese | pt |
| Romanian | ro |
| Russian | ru |
| Serbian | sr |
| Sinhalese | si |
| Slovak | sk |
| Slovenian | sl |
| Spanish | es |
| Swedish | sv |
| Tajik | tg |
| Tamil | ta |
| Telugu | te |
| Thai | th |
| Turkish | tr |
| Ukrainian | uk |
| Urdu | ur |
| Vietnamese | vi |
| Zulu | zu |

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