

Textual Index

- Textual Index
- Operation

Textual Index

Introduction

A textual index is a data structure used in database systems to facilitate efficient search and retrieval of text-based information. It is designed to handle large volumes of textual data and provide quick access to relevant documents or records based on specified search criteria.

When a search query is performed on a database with a textual index, the index is queried to identify relevant documents or records that match the search terms. The index provides information about the location and relevance of the documents, which enables the database system to retrieve and present the results in a timely manner.

Textual indexes play a crucial role in enabling efficient search and retrieval of textual information in databases, making them an essential component in applications that handle large volumes of textual data, such as search engines, content management systems, and document repositories.

Soffid incorporates the textual index from version 3.5 using [the Apache Lucene library](#).

Index configuration

Soffid allows you to configure the objects you want to use in the textual index. To do this, you must select the proper object from the metadata page and enable the option "Use textual index". Once you enable this option, the textual index will be applied to the attributes of this object that have been included in the quick search.

Notice, from the user interface, it is not interpreted as a Lucene expression.

Example

1. Enable the "Use textual index" on the User object and save the changes.

soffid Search

Main Menu > Administration > Configuration > Global Settings > Metadata 9 / 12

Object type : com.soffid.iam.api.User

Description : Builtin user object

Use textual index : Yes **III**

| Code | Label | Data type | Built-in type |
|---|-------------------|-----------|---------------|
| Filter | Filter | Filter | Filter |
| <input type="checkbox"/> __COMMONATTRIBUTES__ | Common attributes | Separator | Yes |
| <input type="checkbox"/> userName | User name | String | Yes |
| <input type="checkbox"/> firstName | First name | String | Yes |
| <input type="checkbox"/> lastName | Last Name | String | Yes |
| <input type="checkbox"/> middleName | Middle name | String | Yes |

2. Check the attributes included in the quick search.

soffid Attribute metadata

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Object type : com.soffid.iam.api.User

Description : Builtin user object

Use textual index : Yes

Code : **userName**

Label : User name

Data type : String

Letter case : Keep as entered by the user

User hint : User hint

Description : Description

Required : Yes **II**

Include in quick search : Yes **II**

Prevent duplicated values : **II** No

Multiple values : **II** No

Maximum number of rows to display : Maximum number of rows to display

How does the user interface search work?

Once you have configured the textual index for a specific object, Soffid will apply it when you use Quick Search on this object.

Example 1

1. If you search for users using the text "*frankin*", then Soffid will display all the users whose userName, firstName, lastName, or middleName match, to some degree, with the typed text following the textual index rules.

soffid

Search

?

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[Main Menu](#) > [Administration](#) > [Resources](#) > [Users](#)

frankin

Quick [Basic](#) [Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ First name | ↕ Last Name | ↕ Primary group | ↕ Enabled | ↕ Manager |
|--------------------------|--------------|---------------|-------------|-----------------|-----------|-----------|
| <input type="checkbox"/> | aretha | Aretha | Franklin | world | Yes | |
| <input type="checkbox"/> | frank | Frank | Sinatra | Music | Yes | |
| <input type="checkbox"/> | frankrudolph | Frank Rudolph | Olson | scientist | Yes | |
| <input type="checkbox"/> | franks | Frank | Sherwood | scientist | Yes | |
| <input type="checkbox"/> | rfranklin | Rosalind | Franklin | scientist | Yes | |

Displayed rows: 5

2. If you include the attribute manager in the quick search:

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Attribute metadata

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⚙

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Object type :

Description :

Use textual index :

☐

Code

Filter

☐

rid

☐

fullName

☐

birthDate

☐

picture

☐

__ORGANIZATION

☐

userType

Code :

manager

Label :

Manager

Data type :

User

User hint :

User hint

Description :

Description

Required :

☐

Yes

☐

No

Include in quick search :

☒

Yes

☐

No

Prevent duplicated values :

☐

Yes

☐

No

Multiple values :

☐

Yes

☐

No

Maximum number of rows to display :

3. And search for "frankin", then Soffid will display all the users whose userName, firstName, lastName, middleName, or manager match with the typed text following the textual index rules.

soffid

Search

?

⚙

[Main Menu](#) > [Administration](#) > [Resources](#) > [Users](#)

frankin

Quick [Basic](#) [Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ First name | ↕ Last Name | ↕ Primary group | ↕ Enabled | ↕ Manager |
|--------------------------|--------------|---------------|-------------|-----------------|-----------|-----------|
| <input type="checkbox"/> | aretha | Aretha | Franklin | world | Yes | |
| <input type="checkbox"/> | frank | Frank | Sinatra | Music | Yes | |
| <input type="checkbox"/> | frankrudolph | Frank Rudolph | Olson | scientist | Yes | |
| <input type="checkbox"/> | franks | Frank | Sherwood | scientist | Yes | |
| <input type="checkbox"/> | hlamarr | Hedy | Lamarr | scientist | Yes | franks |
| <input type="checkbox"/> | inewton | Isaac | Newton | scientist | Yes | frank |
| <input type="checkbox"/> | janis | Janis | Joplin | Music | Yes | frank |
| <input type="checkbox"/> | rfranklin | Rosalind | Franklin | scientist | Yes | |

Displayed rows: 8

Example 2

1. If you search for users using the text "manager:frank" Soffid will display all users whose manager matches the text "frank".

soffid

Search

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[Quick](#)
[Basic](#)
[Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|-------------|--------------|-----------------|-----------|--------------|-------------|--------------|
| <input type="checkbox"/> | hlamarr | Hedy Lamarr | scientist | Yes | Hedy | Lamarr | franks |
| <input type="checkbox"/> | inewton | Isaac Newton | scientist | Yes | Isaac | Newton | frank |
| <input type="checkbox"/> | janis | Janis Joplin | Music | Yes | Janis | Joplin | frank |
| <input type="checkbox"/> | ntesla | Nikola Tesla | Support IT | Yes | Nikola | Tesla | frankrudolph |

Displayed rows: 4

Notice the difference by searching "manager:frank?":

soffid

Search

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[Quick](#)
[Basic](#)
[Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|-------------|--------------|-----------------|-----------|--------------|-------------|--------------|
| <input type="checkbox"/> | hlamarr | Hedy Lamarr | scientist | Yes | Hedy | Lamarr | franks |
| <input type="checkbox"/> | ntesla | Nikola Tesla | Support IT | Yes | Nikola | Tesla | frankrudolph |

Displayed rows: 2

And by searching "manager:frank*":

soffid

Search

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[Quick](#)
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[Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|-------------|--------------|-----------------|-----------|--------------|-------------|--------------|
| <input type="checkbox"/> | hlamarr | Hedy Lamarr | scientist | Yes | Hedy | Lamarr | franks |
| <input type="checkbox"/> | inewton | Isaac Newton | scientist | Yes | Isaac | Newton | frank |
| <input type="checkbox"/> | janis | Janis Joplin | Music | Yes | Janis | Joplin | frank |
| <input type="checkbox"/> | ntesla | Nikola Tesla | Support IT | Yes | Nikola | Tesla | frankrudolph |

Displayed rows: 4

And also by searching "manager:fr*"

soffid

Search

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[Quick](#)
[Basic](#)
[Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|-------------|------------------|-----------------|-----------|--------------|-------------|--------------|
| <input type="checkbox"/> | etaylor | Elizabeth Taylor | Movie Stars | Yes | Elizabeth | Taylor | freddie |
| <input type="checkbox"/> | hlamarr | Hedy Lamarr | scientist | Yes | Hedy | Lamarr | franks |
| <input type="checkbox"/> | inewton | Isaac Newton | scientist | Yes | Isaac | Newton | frank |
| <input type="checkbox"/> | janis | Janis Joplin | Music | Yes | Janis | Joplin | frank |
| <input type="checkbox"/> | ntesla | Nikola Tesla | Support IT | Yes | Nikola | Tesla | frankrudolph |

Displayed rows: 5

Example 3

1. If you search for users using the text "userName:frank*" Soffid will display all users whose user name matches the text "frank" followed by any other text.

soffid

Search

?

Main Menu > Administration > Resources > Users

userName:frank*

[Quick](#) [Basic](#) [Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|--------------|---------------------|-----------------|-----------|---------------|-------------|-----------|
| <input type="checkbox"/> | frank | Frank Sinatra | Music | Yes | Frank | Sinatra | |
| <input type="checkbox"/> | frankrudolph | Frank Rudolph Olson | scientist | Yes | Frank Rudolph | Olson | |
| <input type="checkbox"/> | franks | Frank Sherwood | scientist | Yes | Frank | Sherwood | |

Displayed rows: 3

Notice the difference by searching the text "userName:frank?":

soffid

Search

?

Main Menu > Administration > Resources > Users

userName:frank?

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| <input type="checkbox"/> | ▼ User name | ↕ Full name | ↕ Primary group | ↕ Enabled | ↕ First name | ↕ Last Name | ↕ Manager |
|--------------------------|--------------|---------------------|-----------------|-----------|---------------|-------------|-----------|
| <input type="checkbox"/> | frankrudolph | Frank Rudolph Olson | scientist | Yes | Frank Rudolph | Olson | |
| <input type="checkbox"/> | franks | Frank Sherwood | scientist | Yes | Frank | Sherwood | |

Displayed rows: 2

Example 4

1. If you search for users using the text "frank" plus the wildcard "?", Soffid will display all users whose userName, firstName, lastName, middleName, or manager match the typed text as long as it has variation in the characters where the wildcard has been used.

soffid

Search

?

Main Menu > Administration > Resources > Users

frank?

[Quick](#) [Basic](#) [Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ First name | ↕ Last Name | ↕ Primary group | ↕ Enabled | ↕ Manager |
|--------------------------|--------------|---------------|-------------|-----------------|-----------|--------------|
| <input type="checkbox"/> | aretha | Aretha | Franklin | world | Yes | |
| <input type="checkbox"/> | frankrudolph | Frank Rudolph | Olson | scientist | Yes | |
| <input type="checkbox"/> | franks | Frank | Sherwood | scientist | Yes | |
| <input type="checkbox"/> | hlamarr | Hedy | Lamarr | scientist | Yes | franks |
| <input type="checkbox"/> | ntesla | Nikola | Tesla | Support IT | Yes | frankrudolph |
| <input type="checkbox"/> | rfranklin | Rosalind | Franklin | scientist | Yes | |

Displayed rows: 6

Notice the difference by searching "fran?"

soffid

Search

?

Main Menu > Administration > Resources > Users

fran?

[Quick](#) [Basic](#) [Advanced](#)

| <input type="checkbox"/> | ▼ User name | ↕ First name | ↕ Last Name | ↕ Primary group | ↕ Enabled | ↕ Manager |
|--------------------------|--------------|---------------|-------------|-----------------|-----------|--------------|
| <input type="checkbox"/> | aretha | Aretha | Franklin | world | Yes | |
| <input type="checkbox"/> | frank | Frank | Sinatra | Music | Yes | |
| <input type="checkbox"/> | frankrudolph | Frank Rudolph | Olson | scientist | Yes | |
| <input type="checkbox"/> | franks | Frank | Sherwood | scientist | Yes | |
| <input type="checkbox"/> | hlamarr | Hedy | Lamarr | scientist | Yes | franks |
| <input type="checkbox"/> | inewton | Isaac | Newton | scientist | Yes | frank |
| <input type="checkbox"/> | janis | Janis | Joplin | Music | Yes | frank |
| <input type="checkbox"/> | ntesla | Nikola | Tesla | Support IT | Yes | frankrudolph |
| <input type="checkbox"/> | rfranklin | Rosalind | Franklin | scientist | Yes | |

Displayed rows: 9

How does the SCIM interface search work?

1. First of all, you must install the SCIM addon in Soffid.

For more information, you can visit [the How to install SCIM in Soffid? page](#).

2. Then, you can use any REST client to test and consume our SCIM REST web service.

For more information, you can visit [the Testing tool page](#).

3. Finally, you can start to use the SCIM interface search by using Lucene syntaxis

Lucene syntaxis

Please browse the standard specifications in this link:

<https://bookstack.soffid.com/books/soffid-3-reference-guide/page/lucene-query-parser-syntax>

Term Modifiers

Lucene supports modifying query terms to provide a wide range of search options. Here are the most common ones:

| | |
|------------------------------------|--|
| Wildcard Searches | To perform a single character wildcard search use the "?" symbol. To perform a multiple character wildcard search use the "*" symbol. |
| Regular Expression Searches | Lucene supports regular expression searches matching a pattern between forward slashes "/" |

| | |
|------------------------|---|
| Fuzzy Searches | <p>To do a fuzzy search use the tilde, "~", symbol at the end of a Single word Term</p> <p><u>Soffid Console <= 3.4 version</u></p> <p>~0.8: stricter search</p> <p>~0.1: more lax search</p> <p><u>Soffid Console > 3.4 version</u></p> <p>An additional (optional) parameter can specify the maximum number of edits allowed. The value is between 0 and 2.</p> |
| Range Searches | <p>Range Queries allow one to match documents whose field(s) values are between the lower and upper bound specified by the Range Query</p> |
| Boosting a Term | <p>To boost a term use the caret, "^", symbol with a boost factor (a number) at the end of the term you are searching. The higher the boost factor, the more relevant the term will be.</p> |

Boolean Operators

| | |
|------------|--|
| OR | The OR operator links two terms and finds a matching document if either of the terms exist in a document. This is equivalent to a union using sets |
| AND | The AND operator matches documents where both terms exist anywhere in the text of a single document. This is equivalent to an intersection using sets. |
| + | The "+" or required operator requires that the term after the "+" symbol exist somewhere in a the field of a single document. |
| NOT | The NOT operator excludes documents that contain the term after NOT. This is equivalent to a difference using sets. |
| - | The "-" or prohibit operator excludes documents that contain the term after the "-" symbol. |

Escaping Special Characters

Lucene supports escaping special characters that are part of the query syntax.

The current list of special characters are + - & || ! () { } [] ^ " ~ * ? : \ /

Examples

Example 1

1. Use the wildcard search

1.1.*

Request

```
GET http://<domain>/webservice/scim2/v1/User?textFilter=fran*
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 4,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Franklin",
      "createdByUser": "ActiveDirectory",
      "fullName": "Rosalind Franklin",
      "active": true,
      "userName": "rfranklin",
      "mailAlias": "",
      "firstName": "Rosalind",
      "createdDate": "2023-08-08 14:26:14",
      "multiSession": true,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862",
        "links": {
          "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'rfranklin'+and+enabled+eq+true",
          "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'rfranklin'+and+disabled+eq+false",
          "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'rfranklin'",
          "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'rfranklin'",
          "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862/effectiveGrants"
```

```
    },
    "resourceType": "User"
  },
  "modifiedByUser": "ActiveDirectory",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-08-08 14:26:14",
  "attributes": {},
  "id": 2862,
  "userType": "I",
  "primaryGroupDescription": "scientist",
  "primaryGroup": "scientist"
},
{
  "lastName": "Franklin",
  "createdByUser": "ActiveDirectory",
  "fullName": "Aretha Franklin",
  "active": true,
  "userName": "aretha",
  "mailAlias": "",
  "firstName": "Aretha",
  "createdDate": "2023-09-06 13:12:54",
  "multiSession": true,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'aretha'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'aretha'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'aretha'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'aretha'",
      "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397/effectiveGrants"
```

```
    },
    "resourceType": "User"
  },
  "modifiedByUser": "ActiveDirectory",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-09-06 13:12:54",
  "attributes": {},
  "id": 276397,
  "userType": "I",
  "primaryGroupDescription": "World",
  "primaryGroup": "world"
},
{
  "lastName": "Sinatra",
  "createdByUser": "ActiveDirectory",
  "fullName": "Frank Sinatra",
  "active": true,
  "userName": "frank",
  "mailAlias": "",
  "firstName": "Frank",
  "createdDate": "2023-09-06 13:12:54",
  "multiSession": true,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'",
      "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
```

```
    },
    "resourceType": "User"
  },
  "modifiedByUser": "ActiveDirectory",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-09-06 13:12:55",
  "attributes": {},
  "id": 276435,
  "userType": "I",
  "primaryGroupDescription": "Music",
  "primaryGroup": "Music"
},
{
  "lastName": "Sherwood",
  "createdByUser": "pgarcia",
  "fullName": "Frank Sherwood",
  "active": true,
  "userName": "franks",
  "mailAlias": "",
  "firstName": "Frank",
  "createdDate": "2023-10-05 15:32:40",
  "multiSession": false,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'franks'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'franks'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'franks'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'franks'",
      "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644/effectiveGrants"
```

```
    },
    "resourceType": "User"
  },
  "modifiedByUser": "pgarcia",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-10-05 15:32:40",
  "attributes": {},
  "id": 432644,
  "userType": "I",
  "primaryGroupDescription": "scientist",
  "primaryGroup": "scientist"
}
]
}
```

1.2. ?

Request

```
http://<domain>/webservice/scim2/v1/User?textFilter=fran?
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 2,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Sinatra",
      "createdByUser": "ActiveDirectory",
      "fullName": "Frank Sinatra",
      "active": true,
      "userName": "frank",
      "mailAlias": "",
      "firstName": "Frank",

```

```
"createdDate": "2023-09-06 13:12:54",
"multiSession": true,
"meta": {
  "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
  "links": {
    "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
    "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
    "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
    "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'",
    "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
  },
  "resourceType": "User"
},
"modifiedByUser": "ActiveDirectory",
"schemas": [
  "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-09-06 13:12:55",
"attributes": {},
"id": 276435,
"userType": "I",
"primaryGroupDescription": "Music",
"primaryGroup": "Music"
},
{
  "lastName": "Sherwood",
  "createdByUser": "pgarcia",
  "fullName": "Frank Sherwood",
  "active": true,
  "userName": "franks",
  "mailAlias": "",
  "firstName": "Frank",
```

```

    "createdDate": "2023-10-05 15:32:40",
    "multiSession": false,
    "meta": {
      "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644",
      "links": {
        "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'franks'+and+enabled+eq+true",
        "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'franks'+and+disabled+eq+false",
        "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'franks'",
        "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'franks'",
        "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644/effectiveGrants"
      },
      "resourceType": "User"
    },
    "modifiedByUser": "pgarcia",
    "schemas": [
      "urn:soffid:com.soffid.iam.api.User"
    ],
    "modifiedDate": "2023-10-05 15:32:40",
    "attributes": {},
    "id": 432644,
    "userType": "I",
    "primaryGroupDescription": "scientist",
    "primaryGroup": "scientist"
  }
]
}

```

Example 2

1. Use the wildcard search in a specific attribute

Request

GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=userName:frank

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 1,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Sinatra",
      "profileServer": "Void host",
      "createdByUser": "admin",
      "fullName": "Frankaaa Sinatra",
      "active": true,
      "userName": "frank",
      "mailAlias": "",
      "mailServer": "Void host",
      "firstName": "Frankaaa",
      "emailAddress": "pgarcia@soffid.com",
      "mailDomain": "soffid.com",
      "createdDate": "2023-06-02 07:41:47",
      "multiSession": false,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/3910",
        "links": {
          "roleAccounts":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
          "groupUsers":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
          "accounts":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
          "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/3910/effectiveGrants"
        }
      },
      "resourceType": "User"
    }
  ]
}
```


[illegible]

1Kp0Oul7jkbk/vwlli6oegjjgSvkDp8Cl/pbs/qcXWp7lc51+6/at4A3HllmFX6t6ZG7tr8j+UAILCO40F4zEbH7S52sx0vb2
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C0y6nvWzD4iX7rxEwfTqkilSzMqVDCqpsrOpv6nTTja8Cg2p0g69FppfddzyEi7FT64abpV0WBHYBuxsANSeQ75othbjc
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Gcfz64asfU03mk6V0Q532zjqSeRftU2Pg6IP6zM2WLHNuNTK/eDUU0qg7stVEPnAFg665ErFRmpDqcQm7rKT9gP4i+
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pNe6X9oITqUvrY6i54Wmqczp0ATiAnToH//2Q=="

```
    },  
    "id": 3910,  
    "userType": "I",  
    "homeServer": "Void host",  
    "shortName": "pgarcia",  
    "primaryGroupDescription": "Music",  
    "primaryGroup": "Music"
```

```
  }
```

```
]
```

```
}
```

Example 3

1. Use the Fuzzy Searches

Request

```
GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=fran~
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 2,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Sinatra",
      "createdByUser": "ActiveDirectory",
      "fullName": "Frank Sinatra",
      "active": true,
      "userName": "frank",
      "mailAlias": "",
      "firstName": "Frank",
      "createdDate": "2023-09-06 13:12:54",
      "multiSession": true,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
        "links": {
          "roleAccounts":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
          "groupUsers":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
          "accounts":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
          "issues":
            "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'",
```

```
    "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
    },
    "resourceType": "User"
  },
  "modifiedByUser": "ActiveDirectory",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-09-06 13:12:55",
  "attributes": {},
  "id": 276435,
  "userType": "I",
  "primaryGroupDescription": "Music",
  "primaryGroup": "Music"
},
{
  "lastName": "Sherwood",
  "createdByUser": "pgarcia",
  "fullName": "Frank Sherwood",
  "active": true,
  "userName": "franks",
  "mailAlias": "",
  "firstName": "Frank",
  "createdDate": "2023-10-05 15:32:40",
  "multiSession": false,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'franks'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'franks'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'franks'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'franks'",
```

```
        "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644/effectiveGrants"
    },
    "resourceType": "User"
},
"modifiedByUser": "pgarcia",
"schemas": [
    "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-10-05 15:32:40",
"attributes": {},
"id": 432644,
"userType": "I",
"primaryGroupDescription": "scientist",
"primaryGroup": "scientist"
}
]
}
```

2. Use the Fuzzy Searches: specify the maximum number of edits allowed

Request

```
GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=frankl~2
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 4,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Franklin",
      "createdByUser": "ActiveDirectory",
      "fullName": "Rosalind Franklin",
      "active": true,
      "userName": "rfranklin",
```

```
"mailAlias": "",
"firstName": "Rosalind",
"createdDate": "2023-08-08 14:26:14",
"multiSession": true,
"meta": {
  "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862",
  "links": {
    "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'rfranklin'+and+enabled+eq+true",
    "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'rfranklin'+and+disabled+eq+false",
    "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'rfranklin'",
    "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'rfranklin'",
    "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862/effectiveGrants"
  },
  "resourceType": "User"
},
"modifiedByUser": "ActiveDirectory",
"schemas": [
  "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-08-08 14:26:14",
"attributes": {},
"id": 2862,
"userType": "I",
"primaryGroupDescription": "scientist",
"primaryGroup": "scientist"
},
{
  "lastName": "Franklin",
  "createdByUser": "ActiveDirectory",
  "fullName": "Aretha Franklin",
  "active": true,
  "userName": "aretha",
  "mailAlias": "",
```

```
"firstName": "Aretha",
"createdAt": "2023-09-06 13:12:54",
"multiSession": true,
"meta": {
  "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397",
  "links": {
    "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'aretha'+and+enabled
+eq+true",
    "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'aretha'+and+disabled+eq+f
alse",
    "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+e
q+'aretha'",
    "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'aretha'",
    "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397/effectiveGrants"
  },
  "resourceType": "User"
},
"modifiedByUser": "ActiveDirectory",
"schemas": [
  "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-09-06 13:12:54",
"attributes": {},
"id": 276397,
"userType": "I",
"primaryGroupDescription": "World",
"primaryGroup": "world"
},
{
  "lastName": "Sinatra",
  "createdByUser": "ActiveDirectory",
  "fullName": "Frank Sinatra",
  "active": true,
  "userName": "frank",
  "mailAlias": ""
```



```
"firstName": "Frank",
"createdDate": "2023-09-06 13:12:54",
"multiSession": true,
"meta": {
  "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
  "links": {
    "roleAccounts":
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    "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
    "accounts":
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    "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'",
    "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
  },
  "resourceType": "User"
},
"modifiedByUser": "ActiveDirectory",
"schemas": [
  "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-09-06 13:12:55",
"attributes": {},
"id": 276435,
"userType": "I",
"primaryGroupDescription": "Music",
"primaryGroup": "Music"
},
{
  "lastName": "Sherwood",
  "createdByUser": "pgarcia",
  "fullName": "Frank Sherwood",
  "active": true,
  "userName": "franks",
  "mailAlias": ""
```

```

    "firstName": "Frank",
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    "multiSession": false,
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        "groupUsers":
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        "accounts":
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        "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'franks'",
        "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644/effectiveGrants"
      },
      "resourceType": "User"
    },
    "modifiedByUser": "pgarcia",
    "schemas": [
      "urn:soffid:com.soffid.iam.api.User"
    ],
    "modifiedDate": "2023-10-05 15:32:40",
    "attributes": {},
    "id": 432644,
    "userType": "I",
    "primaryGroupDescription": "scientist",
    "primaryGroup": "scientist"
  }
]
}

```

Example 4

1. Use the boolean operator AND

Request

```
GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=fran~ AND Sinatra
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 1,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Sinatra",
      "profileServer": "Void host",
      "createdByUser": "admin",
      "fullName": "Frankaaa Sinatra",
      "active": true,
      "userName": "frank",
      "mailAlias": "",
      "mailServer": "Void host",
      "firstName": "Frankaaa",
      "emailAddress": "pgarcia@soffid.com",
      "mailDomain": "soffid.com",
      "createdDate": "2023-06-02 07:41:47",
      "multiSession": false,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/3910",
        "links": {
          "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
          "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
          "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
          "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/3910/effectiveGrants"
```

```
{,
  "resourceType": "User"
},
  "modifiedByUser": "admin",
  "schemas": [
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  ],
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  "attributes": {
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V0IZWAI1BB3WliMkCPaDtjBgvoBoEWFd1RS7sFUbyTYTp0DC9Iekj1wUpgrR5nKvWclI3ITL/KA/eAZQI/86eeKcHw7C
hR6Tp0Agruod7aC9PGo1rm2qtra54+sl6Z2am7KtVWVqfWU6ahxbRS677k6Xup011iToBqdRsz5Ulc/wCdhXvapze
mTx423jeMwjKioEUhyaOb6up/4mHqb8j21tfXTxHI9OgdUZyzOFXrkU9ft9yvSPtOoGhuLE27mG6MWmjotLP2HzNh6j
WBR/foudwBNvPKdxnToFfhKN1KnCO7U2NNyr1PbXmoBANIbviVqCa5sFWHi9QfNPGLOgVmKRPdwr373qH4BRKm
op4Ubd1nPznToAWY/YH4W/WNKnfIsNxGtjOnQNv0Y2pnQKx7SaG/EcD+veJpKeEaoQBOOnQNjs3YoWxl1/f6SZtnGU8j
h3rsAci3VLhc77kQHvNok6B5JT2saH+ISun8TUqVC6OjMtMPmcmcncZb3IAABOp7xM2+LZ83ZA7CltWIZlv23Gt3OY2Jt
lvpaLOgDw+Is2lgBusLcbi/E8tZ6p0a2mHRTfxD5zp0DV0sRKjpdSx+ModWrhGDBwxGYXAlsRcEXvvE6dAotl9HqeDQ
sVNSqB7ZsLE7gg90X85Z7D2aEGdtXY3J8Yk6BdVGAtluKJtp8506BjNvlztkU+32A2mj5WZCP60UTO583aC2LXcDgppq
A51/pr0x+KLOgBwo6xBTJ0FSoi62s1VCafkXQjzkps9UU61NVZ3BpVUYLINSmAwJDGxLIN3MGdOgazoNtEWfDFSjKSw
pNe6X9oITqUvrY6i54Wmqczp0ATiAnToH//2Q=="

```
},  
"id": 3910,  
"userType": "I",  
"homeServer": "Void host",  
"shortName": "pgarcia",  
"primaryGroupDescription": "Music",  
"primaryGroup": "Music"
```

```
}
```

```
]
```

```
}
```

2. Use the boolean operator +

Request

```
GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=fran~ +bacall
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 3,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Bacall",
      "createdByUser": "ActiveDirectory",
      "fullName": "Lauren Bacall",
      "active": true,
      "userName": "lbacall",
      "mailAlias": "",
      "firstName": "Lauren",
      "createdDate": "2023-08-08 14:26:14",
      "multiSession": true,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2844",
        "links": {
          "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'lbacall'+and+enabled+eq+true",
          "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'lbacall'+and+disabled+eq+false",
          "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'lbacall'",
          "issues":
```

```
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'lbacall'",
  "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2844/effectiveGrants"
},
"resourceType": "User"
},
"modifiedByUser": "pgarcia",
"schemas": [
  "urn:soffid:com.soffid.iam.api.User"
],
"modifiedDate": "2023-08-22 17:34:07",
"attributes": {},
"id": 2844,
"userType": "I",
"primaryGroupDescription": "Music",
"primaryGroup": "Music"
},
{
  "lastName": "Sinatra",
  "createdByUser": "ActiveDirectory",
  "fullName": "Frank Sinatra",
  "active": true,
  "userName": "frank",
  "mailAlias": "",
  "firstName": "Frank",
  "createdDate": "2023-09-06 13:12:54",
  "multiSession": true,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'"
    }
  }
}
```



```
    "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
    },
    "resourceType": "User"
  },
  "modifiedByUser": "ActiveDirectory",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-09-06 13:12:55",
  "attributes": {},
  "id": 276435,
  "userType": "I",
  "primaryGroupDescription": "Music",
  "primaryGroup": "Music"
},
{
  "lastName": "Sherwood",
  "createdByUser": "pgarcia",
  "fullName": "Frank Sherwood",
  "active": true,
  "userName": "franks",
  "mailAlias": "",
  "firstName": "Frank",
  "createdDate": "2023-10-05 15:32:40",
  "multiSession": false,
  "meta": {
    "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644",
    "links": {
      "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'franks'+and+enabled+eq+true",
      "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'franks'+and+disabled+eq+false",
      "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'franks'",
      "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'franks'",
```

```
      "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/432644/effectiveGrants"
    },
    "resourceType": "User"
  },
  "modifiedByUser": "pgarcia",
  "schemas": [
    "urn:soffid:com.soffid.iam.api.User"
  ],
  "modifiedDate": "2023-10-05 15:32:40",
  "attributes": {},
  "id": 432644,
  "userType": "I",
  "primaryGroupDescription": "scientist",
  "primaryGroup": "scientist"
}
]
}
```

3. Use the boolean operator -

Request

```
GET http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=fran~ -Sherwood
```

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 1,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Sinatra",
      "createdByUser": "ActiveDirectory",
      "fullName": "Frank Sinatra",
      "active": true,
      "userName": "frank",

```

```

    "mailAlias": "",
    "firstName": "Frank",
    "createdDate": "2023-09-06 13:12:54",
    "multiSession": true,
    "meta": {
      "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435",
      "links": {
        "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'frank'+and+enabled+eq+true",
        "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'frank'+and+disabled+eq+false",
        "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'frank'",
        "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'frank'",
        "effectiveGrants":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276435/effectiveGrants"
      },
      "resourceType": "User"
    },
    "modifiedByUser": "ActiveDirectory",
    "schemas": [
      "urn:soffid:com.soffid.iam.api.User"
    ],
    "modifiedDate": "2023-09-06 13:12:55",
    "attributes": {},
    "id": 276435,
    "userType": "I",
    "primaryGroupDescription": "Music",
    "primaryGroup": "Music"
  }
]
}

```

Example 5

1. U

Request

GET

http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User?textFilter=(firstName:aretha OR firstName:Rosalind)
AND lastName:Franklin AND birthDate:1979-01-01

Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 2,
  "startIndex": 1,
  "Resources": [
    {
      "lastName": "Franklin",
      "createdByUser": "ActiveDirectory",
      "fullName": "Aretha Franklin",
      "active": true,
      "userName": "aretha",
      "mailAlias": "",
      "firstName": "Aretha",
      "createdDate": "2023-09-06 13:12:54",
      "multiSession": true,
      "meta": {
        "location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397",
        "links": {
          "roleAccounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'aretha'+and+enabled+eq+true",
          "groupUsers":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'aretha'+and+disabled+eq+false",
          "accounts":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'aretha'",
          "issues":
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'aretha'",
          "effectiveGrants":
```

"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/276397/effectiveGrants"

},

"resourceType": "User"

},

"modifiedByUser": "pgarcia",

"schemas": [

"urn:soffid:com.soffid.iam.api.User"

],

"modifiedDate": "2023-10-05 16:02:40",

"attributes": {

"birthDate": "1979-01-01 00:00:00"

},

"id": 276397,

"userType": "I",

"primaryGroupDescription": "World",

"primaryGroup": "world"

},

{

"lastName": "Franklin",

"createdByUser": "ActiveDirectory",

"fullName": "Rosalind Franklin",

"active": true,

"userName": "rfranklin",

"mailAlias": "",

"firstName": "Rosalind",

"createdDate": "2023-08-08 14:26:14",

"multiSession": true,

"meta": {

"location": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862",

"links": {

"roleAccounts":

"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/RoleAccount?filter=userCode+eq+'rfranklin'+and+enabled+eq+true",

"groupUsers":

"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/GroupUser?filter=user+eq+'rfranklin'+and+disabled+eq+false",

"accounts":

"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Account?filter=type+eq+U+and+users.user.userName+eq+'rfranklin'",

"issues":

```
"http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/Issue?filter=user.userName+eq+'rfranklin'",
  "effectiveGrants": "http://soffid.35x.lab:8089/soffid/webservice/scim2/v1/User/2862/effectiveGrants"
},
"resourceType": "User"
},
"modifiedByUser": "pgarcia",
"schemas": [
  "urn:soffid:com:soffid:iam:api:User"
],
"modifiedDate": "2023-10-05 16:03:02",
"attributes": {
  "birthDate": "1979-01-01 00:00:00"
},
"id": 2862,
"userType": "I",
"primaryGroupDescription": "scientist",
"primaryGroup": "scientist"
}
]
}
```

Operation

Operation

The Lucene index information is stored in files arranged in a folder structure. This folder structure is replicated in every Soffid Console and every Sync Server and also is saved in the database.

In case an instance (Docker, Kubernetes, or stand-alone) detects an inconsistency, the information will be overwritten with the database data.

When you update an object, marked as the textual index, a task will be created. The **soffid agent** will execute this task and the Sync Server will update the database tables related to the textual index.

Folder structure

The folder structure is the following:

- `../index/<TENANT>/<SOFFID_OBJECT>`

Example

1. Here you are the folder structure for the Soffid Console

```
root@da8136799e55:/opt/soffid/iam-console-3/index/master# ll
total 16
drwxr-x--- 4 root root 4096 Jun  2 09:58 ./
drwxr-x--- 3 root root 4096 Jun  2 08:53 ../
drwxr-x--- 2 root root 4096 Jun  2 09:58 com.soffid.iam.api.Group/
drwxr-x--- 2 root root 4096 Jun  2 10:45 com.soffid.iam.api.User/
root@da8136799e55:/opt/soffid/iam-console-3/index/master#
```

```
root@da8136799e55:/opt/soffid/iam-console-3/index/master# cd com.soffid.iam.api.Group/
root@da8136799e55:/opt/soffid/iam-console-3/index/master/com.soffid.iam.api.Group# ls
_1f.fdm  _1f.kdi      _1f_Lucene90_0.tim  _1p.fdt  _1p.kdm      _1p_Lucene90_0.tip  _1q.si  _1s.cfs
_1f.fdt  _1f.kdm      _1f_Lucene90_0.tip  _1p.fdx  _1p_Lucene90_0.doc  _1p_Lucene90_0.tmd  _1r.cfe  _1s.si
_1f.fdx  _1f_Lucene90_0.doc  _1f_Lucene90_0.tmd  _1p.fnm  _1p_Lucene90_0.dvd  _1p.si              _1r.cfs  segments_1n
_1f.fnm  _1f_Lucene90_0.dvd  _1f.si              _1p.kdd  _1p_Lucene90_0.dvm  _1q.cfe              _1r.si  write.lock
_1f.kdd  _1f_Lucene90_0.dvm  _1p.fdm             _1p.kdi  _1p_Lucene90_0.tim  _1q.cfs              _1s.cfe
root@da8136799e55:/opt/soffid/iam-console-3/index/master/com.soffid.iam.api.Group#
```

2. And the folder structure for the Sync Server

```

root@17beaa887a1e:/opt/soffid/iam-sync/index/master# ll
total 16
drwxr-xr-x 4 root root 4096 Jun  2 11:00 ./
drwxr-xr-x 3 root root 4096 Jun  2 09:39 ../
drwxr-xr-x 2 root root 4096 Jun  2 11:00 com.soffid.iam.api.Group/
drwxr-xr-x 2 root root 4096 Jun  2 10:45 com.soffid.iam.api.User/
root@17beaa887a1e:/opt/soffid/iam-sync/index/master#

```

```

root@17beaa887a1e:/opt/soffid/iam-sync/index/master/com.soffid.iam.api.Group# ls
_1f_i.liv  _1f.kdi  _1f_Lucene90_0.tip  _1p.fnm  _1p_Lucene90_0.dvm  _1q.cfs  _1s.cfs  write.lock
_1f.fdm  _1f.kdm  _1f_Lucene90_0.tmd  _1p.kdd  _1p_Lucene90_0.tim  _1q.si  _1s.si
_1f.fdt  _1f_Lucene90_0.doc  _1f.si  _1p.kdi  _1p_Lucene90_0.tip  _1r.cfe  _1t.cfe
_1f.fdx  _1f_Lucene90_0.dvd  _1p.fdm  _1p.kdm  _1p_Lucene90_0.tmd  _1r.cfs  _1t.cfs
_1f.fnm  _1f_Lucene90_0.dvm  _1p.fdt  _1p_Lucene90_0.doc  _1p.si  _1r.si  _1t.si
_1f.kdd  _1f_Lucene90_0.tim  _1p.fdx  _1p_Lucene90_0.dvd  _1q.cfe  _1s.cfe  segments_1o
root@17beaa887a1e:/opt/soffid/iam-sync/index/master/com.soffid.iam.api.Group#

```

Database

The database tables involved:

- **SC_LUINPA**
- **SC_LUNIND**

Example

1. The database structure

```

MariaDB [soffid_35x]> select * from SC_LUNIND;
+-----+-----+-----+-----+
| LIP_ID | LIP_NAME | LIP_TEN_ID | LIP_TIMSTA |
+-----+-----+-----+-----+
| 5378 | master/com.soffid.iam.api.User | 1 | 1685702740517 |
| 5774 | master/com.soffid.iam.api.Group | 1 | 1685703228965 |
+-----+-----+-----+-----+

```

```

MariaDB [soffid_35x]> select * from SC_LUINPA \G;
***** 1. row *****
LIP_ID: 5379
LIP_LIN_ID: 5378
LIP_NAME: _v_Lucene90_0.dvd
LIP_ORDER: 0
LIP_TEN_ID: 1
LIP_DATA: ?\Lucene90DocValuesData  Mi!k
Lucene90_0 e(Y;RooGaoYlG(  mG
LIP_TIMSTA: 1685697735029
***** 2. row *****
LIP_ID: 5380
LIP_LIN_ID: 5378
LIP_NAME: _v.fdm
LIP_ORDER: 0
LIP_TEN_ID: 1
LIP_DATA: ?\Lucene90FieldsIndexMeta  Mi!k
0  0  6  A  0  $  (  )
LIP_TIMSTA: 1685697735025
***** 3. row *****
LIP_ID: 5381

```

soffid agent

You can check the soffid agent status by visiting the Sync Server monitoring page:

Main Menu > Administration > Monitoring and reporting > Sync server monitoring

Example

1. A soffid agent pending task:

soffid

Main Menu > Administration > Resources > Users

Agents

Filter

soffid

SSO

Name

soffid

Url

local

Version

3.5.0-beta-1

| Task | Priority | Executions | Execution time | Message | Scheduled |
|--|----------|------------|----------------|---------|-----------|
| Filter | Filter | Filter | Filter | Filter | Filter |
| IndexObject com.soffid.iam.api.User 3864 | 1 | | | | |

Displayed rows: 1

Close

Step-by-step

Example 1

1. You update one user's data and save the changes.

soffid

search

Main Menu > Administration > Resources > Users

Basics

Groups

Accounts

Roles

Effective Roles

Shared accounts

Sessions

User processes

Common attributes

User name :

ibergman

First name :

agata

Last Name :

bergman

Middle name :

Middle name

Internal id :

Internal id

Full name :

agata bergman

Birth Date :

12/15/1999

Picture :

Organization

Type :

Internal user

Primary group :

Movie Stars

Home server :

Home server

Profile server :

Profile server

Manager :

rfranklin

2. New tasks are created and executed.

soffid

Main Menu > Administration > Resources > Users

Agents

Filter

soffid

SSO

Name

soffid

Url

local

Version

3.5.0-beta-1

| Task | Priority | Executions | Execution time | Message | Scheduled |
|--|----------|------------|----------------|---------|-----------|
| Filter | Filter | Filter | Filter | Filter | Filter |
| IndexObject com.soffid.iam.api.User 3897 | 1 | | | | |
| UpdateUser ibergman | 1 | | | | |

Displayed rows: 2

Close

3. Then Sync Server indexes the updated text and places the index file.

```

root@da8136799e55:/opt/soffid/iam-console-3/index/master/com.soffid.iam.api.User# ls -al
total 108
drwxr-x--- 2 root root 4096 Jun  2 13:23 .
drwxr-x--- 4 root root 4096 Jun  2 09:58 ..
-rw-r----- 1 root root 405 Jun  2 10:42 _12.cfe
-rw-r----- 1 root root 2437 Jun  2 10:42 _12.cfs
-rw-r----- 1 root root 350 Jun  2 10:42 _12.si
-rw-r----- 1 root root 405 Jun  2 13:16 _15.cfe
-rw-r----- 1 root root 2608 Jun  2 13:16 _15.cfs
-rw-r----- 1 root root 350 Jun  2 13:16 _15.si
-rw-r----- 1 root root  67 Jun  2 09:40 _b_2.liv
-rw-r----- 1 root root 405 Jun  2 09:22 _b.cfe
-rw-r----- 1 root root 3463 Jun  2 09:22 _b.cfs
-rw-r----- 1 root root 385 Jun  2 09:22 _b.si

```

4. Then Sync Server and updates the database table SC_LUNIND by upgrading the LIP_TIMSTA field of the User object or by creating a new record if it did not previously exist.

```

MariaDB [soffid_35x]> select * from SC_LUNIND;
+-----+-----+-----+-----+
| LIP_ID | LIP_NAME                                | LIP_TEN_ID | LIP_TIMSTA |
+-----+-----+-----+-----+
| 5378   | master/com.soffid.iam.api.User         | 1          | 1685711801976 |
| 5784   | master/com.soffid.iam.api.Group        | 1          | 1685703660618 |
+-----+-----+-----+-----+

```

5. When the following search will be performed, the very first thing to do is check the database file. If it is necessary update the file system and finally perform the search.

Example 2

1. The task engine mode is Read only

soffid

Search

Main Menu > Administration > Configuration > Integration engine > Smart engine settings

Task engine mode: Read only (blue arrow pointing to the dropdown)

Tasks limit per transaction: 15 (If a single transaction creates more than this number of tasks, tasks will be held until Soffid administrator releases them.)

Scripting language: Javascript

Undo Confirm changes

2. You update one user's data and save the changes.

soffid

Search

Main Menu > Administration > Resources > Users

Basics Groups Accounts Roles Effective Roles Shared accounts Sessions User processes

Common attributes

User name: ibergman

First name: agata (blue arrow pointing to the input field)

Last Name: bergman

Middle name: Middle name

Internal id: Internal id

Full name: agata bergman

Birth Date: 12/15/1999

Picture: [icon]

Organization

Type: Internal user

Primary group: Movie Stars (Movie Stars icon)

Home server: Home server (server icon)

Profile server: Profile server (server icon)

Manager: rfranklin (Rosalind Franklin icon)

3. A new task is created and executed

soffid

Main Menu > Admin

Agent

Filter

soffid

SSO

soffid

Name

soffid

Url

local

Version

3.5.0-beta-1

Task

Priority

Executions

Execution time

Message

Scheduled

Filter

Filter

Filter

Filter

Filter

Filter

IndexObject com.soffid.iam.api.User 3897

1

Displayed rows: 1

Close

4. Then Sync Server indexes the updated text and places the index file.
5. Then Sync Server and updates the database table SC_LUNIND by upgrading the LIP_TIMSTA field of the User object or by creating a new record if it did not previously exist.
6. When the following search will be performed, the very first thing to do is check the database file. If it is necessary update the file system and finally perform the search.