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# 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;RooGaYl(  m
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

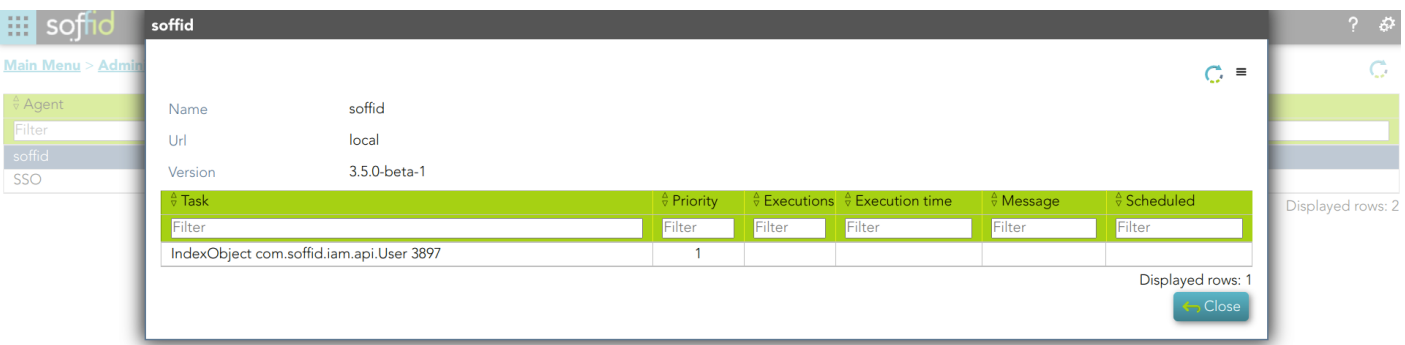
Primary group: Movie Stars (Movie Stars icon)

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



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.