

# SCIM for OTP devices

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# □ Getting Started

## Introduction

Soffid allows you to combine two of the most powerful addons you can use into Soffid Console, **SCIM**, and **OTP**.

Please note that the SCIM REST Web Service Add-on installed must be installed, please check this part in [How to use SCIM in Soffid # Installation](#)

Please note that a user with the authentication is required, please check this part in [How to use SCIM in Soffid # Confirm authorization](#)

Please note that is recommended to use a REST client, please see our example in [Testing tool # RESTer](#)

Please note that the correct header parameters must be used, please browse them in [SCIM in Soffid # HTTP request](#)

Please note that the OTP addon must be installed and configured, check it in [OTP Settings](#)

## OTP Device Types

OTP device types available

- **TOTP**: Time based HMAC Token
- **HOTP**: Event based HMAC Token
- **EMAIL**
- **SMS**
- **PIN**: Security PIN

## OTP Device Status

OTP device status available :

- C: **Created**
- V: **Validated**
- L: **Locked**
- D: **Disabled**

# OTP Operations

Soffid provides an API that allows you to connect to the OTP microservices.

The available operations are the following

- List all
- List by filter
- Query by id
- Create
- Update
- Validate
- Send SMS
- Delete

You can visit the [SCIM OTP devices examples page](#) for more detailed information

## Workflows

With the previous operations, using the SCIM OTP API, we can define some workflows.

You can visit the [SCIM OTP devices Workflows examples page](#)

# SCIM OTP devices examples

## Operations

This page shows the operations that can be performed for the OTP devices object.

### List all

#### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice
```

#### Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 25,
  "startIndex": 1,
  "Resources": [
    {
      "lastUsed": "2021-10-14 06:57:00",
      "created": "2021-10-14 06:44:43",
      "meta": {
        "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880",
        "links": {
          "requestChallenge":
            "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/requestChallenge",
          "responseChallenge":
            "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/responseChallenge"
        },
        "resourceType": "OtpDevice"
      },
    },
  ],
  "schemas": [
```

```
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "TOTP000000001",
  "id": 4022880,
  "type": "TOTP",
  "user": "franck",
  "fails": 0,
  "status": "D"
},
{
  "created": "2021-10-14 08:37:38",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024384",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024384/requestChallenge",
      "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024384/responseChallenge"
    },
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "Email message to pg*****@so****.co*",
  "id": 4024384,
  "type": "EMAIL",
  "user": "patricia",
  "fails": 0,
  "email": "patricia@soffid.com",
  "status": "D"
},
{
  "created": "2021-10-14 11:17:52",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024416",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024416/requestChallenge",
      "responseChallenge":
```

```
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4024416/responseChallenge"
  },
  "resourceType": "OtpDevice"
},
"schemas": [
  "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
],
"phone": "666555444",
"name": "SMS message to 66****44",
"id": 4024416,
"type": "SMS",
"user": "agatha",
"fails": 0,
"status": "V"
},
.....
.....
]
}
```

## List by filter

List all the OTP devices with a filter expression.

It is allowed to use pagination and sort the information, for more information visit the [Sorting](#) and [Pagination](#) information.

### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice?filter=type eq "TOTP"
```

### Response 200 OK

```
{
  "schemas": [
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"
  ],
  "totalResults": 7,
```

```

"startIndex": 1,
"Resources": [
  {
    "lastUsed": "2021-10-14 06:57:00",
    "created": "2021-10-14 06:44:43",
    "meta": {
      "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880",
      "links": {
        "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/requestChallenge",
        "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/responseChallenge"
      },
      "resourceType": "OtpDevice"
    },
    "schemas": [
      "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
    ],
    "name": "TOTP000000001",
    "id": 4022880,
    "type": "TOTP",
    "user": "franck",
    "fails": 0,
    "status": "D"
  },
  .....
  .....
]
}

```

## Query by id

Query a OTP device by its id (primary key).

### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5007882
```

### Response 200 OK

```
{
  "created": "2022-02-22 07:46:51",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882/requestChallenge",
      "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882/responseChallenge"
    },
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "TOTP000000035",
  "id": 5007882,
  "type": "TOTP",
  "user": "admin",
  "fails": 0,
  "status": "C"
}
```

## Create

Allows you to create a new OTP device. It is important the type of the OTP you want to create, and depending on this, it will be mandatory to add new attributes to the request.

- **SMS**: add to the JSON the phone attribute
- **EMAIL**: add to the JSON the email attribute
- **PIN**: add to the JSON the pin attribute

## Request

```
http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice
```

## JSON

```
{
  "meta": {
```



```
"location": "http://<your-domain>/webservice/scim2/v1/OtpDevice",
"resourceType": "OtpDevice"
},
"schemas": [
  "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
],
"type": "TOTP",
"user": "admin"
}
```

## Response 200 OK

```
{
  "image":
    "iVBORw0KGgoAAAANSUUEUgAAAMgAAADIAQAAAACFI5MzAAAC3kIEQVR4Xu2XP66jMBDGB7lwFy5gydeg40rkAoRcgFzJna+B5AtA58Ji9hueQvJWu8UbS6stMoqiW9A9lrPn7Qfw3o99vnPYhHyL2L0mghhOz2Xue+tjGltBlm9haQPdgufsB
    utxp4LQlc1M+C5tSLt1TSWJyy26Jvipd2NfTTJPHU/kmlxariS8RX6w2fhwwt+i82OC/ER3fX2+Ze7HBjbp0iGieCQh54dp
    SaCBaOz8SmbukfY0C1STJAHIZkdQe947d6khkYau3KKZrNktzs77MwYawoTCuTFqEDytHY1PPxqSEQPPwY3WoOeu0
    WzPbGtloNH6tTdz1BX2ky3w7mSZAnkA95sQge3eRmfMdAQhh8pwLFL94ACR/9VkOzvbB5oX0LnuaEz9xoS/YORcN
    ROGY7jn/nREE5bwCRwFwtveOQtBgoSjc9rnzggOWm27nUCBcnws1wl3OPgeOpVVQqCkdynqU+rLWQx+fwxEtTEEZ
    XBL04KjcpzAqScZWQbczRNphZOq+CBHcNkuQmSs+hm4enHw1hXBWM9o39PS4XW161oyBhIZt2MishP/imy3kC
    DUEAyo3LpZe2m/BUDYlmtDjbUoDYtIQNyRUkLPj7jdNE5g4hIKVUQWK5BsZrQh3PWBf0pncUJCAhRjjDGPZokbdtpiC
    MooYHs8rZ4WehKulhnZqM0YIKSo+czsmnIRfKpxxyArfd8FY7GoKRzISg7gSlnqsj2UwdYVZh+c+9jATMZj2J0rUi7ix0Y
    sFsFt9qlrtR5PA9o10wYPx0nlpDjJRhD4Xi0MoP6NnTj4KEQ4WJFvNbXIDWZ+1oCCwujWhYg7S3sVQR0bDUYj3GI+3xp
    a81BPOah+3T/UvDyggqIshDNxIq2q8dftD7W4GGRLyBYT0ujdRRedOwOgKRgvMiS446z2JqwjKfMJUJextCm87dqCHIj
    +xGj0WxMbT/8v7G8mPyZ/uQDxH7n8kvJ2XgRr9Rxi0AAAAASUVORK5CYII=",
  "created": "2022-02-22 07:46:51",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882",
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "TOTP00000035",
  "id": 5007882,
  "type": "TOTP",
  "user": "admin",
  "fails": 0,
  "status": "C"
}
```

```
}
```

## Example JSON SMS

```
{  
  "type": "SMS",  
  "user": "dilbert",  
  "phone": "6665552222"  
}
```

## Example JSON EMAIL

```
{  
  "type": "EMAIL",  
  "user": "dilbert",  
  "email": "dilbert@soffid.com"  
}
```

## Example JSON PIN

```
{  
  "type": "PIN",  
  "user": "dilbert",  
  "email": "123456789"  
}
```

# Update partial

Only attributes with changes will be updated, the other will maintain the same value. This example shows how to enable an OTP device.

## Request

```
PATCH http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5007882
```

## JSON

```
{  
  "Operations":  
  [  

```

```
{
  "op": "replace",
  "path": "status",
  "value": "V"
}
]
```

## Response 200 OK

```
{
  "created": "2022-02-22 07:46:51",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882/requestChallenge",
      "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5007882/responseChallenge"
    },
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "TOTP000000035",
  "id": 5007882,
  "type": "TOTP",
  "user": "admin",
  "fails": 0,
  "status": "V"
}
```

# Request Challenge

This operation allows Soffid to obtain the PIN code for a specific OTP device. We can use this method to send an email or SMS, depending on the type of OTP device.

## Request

```
GET http://<your-domain>//soffid/webservice/scim2/v1/OtpDevice/<OTP_ID>/requestChallenge
```

## Response 200 OK

```
{
  "cell": "PIN",
  "cardNumber": "SMS message to 66*****22"
}
```

# Response Challenge

This operation allows you to validate a PIN code for a specific OTP device.

## Request

```
POST http://<your-domain>//soffid/webservice/scim2/v1/OtpDevice/<OTP_ID>/responseChallenge
```

## JSON

```
{
  "pin": "12345678"
}
```

## Response 200 OK

```
{
  "success": false,
  "locked": false
}
```

# Delete

In this case, delete operation will cancel the TaskInstance, but does not be deleted form database.

Please note after this delete, the account has to be created again to use it in the next examples.

## Request

DELETE - http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5007967

## Response 204 No Content

204 No Content

## Error response

For more information about error response visit

<https://bookstack.soffid.com/link/116#bkmrk-error-response>

# SCIM OTP devices Workflows examples

## Workflow Examples

### Workflow 1

#### 1. Create Email OTP device

##### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice
```

##### JSON

```
{
  "type": "EMAIL",
  "user": "dilbert",
  "email": "dilbert@soffid.com"
}
```

##### Response 200 OK

```
{
  "created": "2022-03-09 13:39:52",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5099461",
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "Email message to di*****@so****.co*",
}
```

```
"id": 5099461,  
"type": "EMAIL",  
"user": "dilbert",  
"fails": 0,  
"email": "dilbert@soffid.com",  
"status": "C"  
}
```

## 2. RequestChallenge to get the PIN code

### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5099461/requestChallenge
```

### Response 200 OK

```
{  
  "cell": "PIN",  
  "cardNumber": "Email message to di*****@so****.co*"  
}
```

## 3. ResponseChallenge to validate the PIN code

### Request

```
POST http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5099461/responseChallenge
```

### JSON

```
{  
  "pin": "839231"  
}
```

### Response 200 OK

```
{  
  "success": true,  
  "locked": false  
}
```

## 4. Enable OTP device

### Request

```
PATCH http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/5099461
```

### JSON

```
{
  "Operations":
  [
    {
      "op": "replace",
      "path": "status",
      "value": "V"
    }
  ]
}
```

### Response

```
{
  "created": "2022-03-09 13:39:52",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5099461",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5099461/requestChallenge",
      "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/5099461/responseChallenge"
    },
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "Email message to di*****@so****.co*",
  "id": 5099461,
  "type": "EMAIL",
  "user": "dilbert",
```



```
"fails": 0,  
"email": "dilbert@soffid.com",  
"status": "V"  
}
```

# Workflow 2

## 1. Get TOTP devices

Obtain all unused OTP devices by 2022.

### Request

```
GET http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice?filter=lastUsed le "2022-01-01"
```

### Response 200 Ok

```
{  
  "schemas": [  
    "urn:ietf:params:scim:api:messages:2.0:ListResponse"  
  ],  
  "totalResults": 5,  
  "startIndex": 1,  
  "Resources": [  
    {  
      "lastUsed": "2021-10-14 06:57:00",  
      "created": "2021-10-14 06:44:43",  
      "meta": {  
        "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880",  
        "links": {  
          "requestChallenge":  
            "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/requestChallenge",  
          "responseChallenge":  
            "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/responseChallenge"  
        },  
        "resourceType": "OtpDevice"  
      },  
      "schemas": [  
        "urn:soffid:com:soffid.iam.addons otp.common.OtpDevice"  
      ]  
    }  
  ]  
}
```

```

    ],
    "name": "TOTP000000001",
    "id": 4022880,
    "type": "TOTP",
    "user": "admin",
    "fails": 0,
    "status": "E"
  },
  {
    "lastUsed": "2021-10-14 06:59:33",
    "created": "2021-10-14 06:58:05",
    "meta": {
      "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022891",
      "links": {
        "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022891/requestChallenge",
        "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022891/responseChallenge"
      },
      "resourceType": "OtpDevice"
    },
    "schemas": [
      "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
    ],
    "name": "TOTP000000002",
    "id": 4022891,
    "type": "TOTP",
    "user": "ckelp",
    "fails": 0,
    "status": "C"
  },
  .....
]
}

```

## 2. Disable OTP device

Disble the OTP devices one by one

### Request

```
PATCH http://<your-domain>/soffid/webservice/scim2/v1/OtpDevice/4022880
```

## JSON

```
{
  "Operations":
  [
    {
      "op": "replace",
      "path": "status",
      "value": "D"
    }
  ]
}
```

## Response 200 Ok

```
{
  "lastUsed": "2021-10-14 06:57:00",
  "created": "2021-10-14 06:44:43",
  "meta": {
    "location": "http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880",
    "links": {
      "requestChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/requestChallenge",
      "responseChallenge":
"http://soffid.pat.lab:8080/soffid/webservice/scim2/v1/OtpDevice/4022880/responseChallenge"
    },
    "resourceType": "OtpDevice"
  },
  "schemas": [
    "urn:soffid:com.soffid.iam.addons.otp.common.OtpDevice"
  ],
  "name": "TOTP00000001",
  "id": 4022880,
  "type": "TOTP",
  "user": "admin",
  "fails": 0,
  "status": "D"
}
```

