
UReport USSD application Documentation

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Praekelt Foundation

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Contents:

UReport JSON HTTP API

This API is designed for the Vumi USSD sandbox application but the intention is that the API should be fairly generic in the hope that it will be usable by other applications in future.

The API is intended to cover the following parts of U-Report functionality:

- Registering a UReporter
- Completing a poll
- Submitting poll results
- Viewing poll results
- Submitting a report

Request responses and bodies are all JSON encoded.

One of the initial backends will be voice with IVR.

1.1 Contents

- *Response format overview*
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- *API methods*
 - GET /ureporters/(str:backend)/(str:user_address)
 - GET /ureporters/(str:backend)/(str:user_address)/polls/current
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1.2 Response format overview

All response bodies will be JSON formatted and contain objects with at least a key named `success`. If the HTTP response code was in the 200 range, the value of `success` will be `true`. Otherwise, the value will be `false`.

Example response (success):

```
HTTP/1.1 200 OK
Content-Type: application/json
```

```
{
  "success": true,
  ...
}
```

Example response (error):

```
HTTP/1.1 404 NOT FOUND
Content-Type: application/json
```

```
{
  "success": false,
  "reason": "Ureporter not found"
}
```

1.3 API Authentication

The preferred method of API authentication is HTTPS combined with HTTP Basic authentication. Servers may require authentication. Clients should optionally require authentication if authentication credentials are supplied.

1.4 API methods

GET `/ureporters/ (str: backend) /`
`str: user_address` Information on the given Ureporter.

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error
- **404** – no user found

Description of the JSON response attributes:

The `registered` parameter is `true` if the Ureporter has completed registration and `false` otherwise.

The `language` parameter should be a two-letter language code as defined in ISO 639-1 or `null` if the Ureporter's preferred language is not yet known.

Warning: If anyone would like to suggest extra fields to return for the user, that would be useful.

Example request:

```
GET /ureporters/vumi_go_sms/+256775551122
Host: example.com
Accept: application/json
```

Example response (success):

```
HTTP/1.1 200 OK
Content-Type: application/json
```

```
{
  "success": true,
  "user": {
    "registered": true,
    "language": "sw",
  }
}
```

GET /ureporters/ (*str*: *backend*) /

str: *user_address/polls/current* Retrieve a description of the current poll, or a `null` poll if no poll is currently available.

This should return either the current registration poll if the Ureporter isn't registered, or the poll the Ureporter should be responding to now if they are registered.

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error
- **404** – no user found

Description of the JSON response attributes:

The JSON response contains a `poll` object with the following attributes:

- **id**: The poll id.
- **language**: The two-letter language code specifying the language used by the `name`, `question` and `default_response` fields.
- **name**: The name of the poll (in the Ureporter's preferred language).
- **question**: The poll text (in the Ureporter's preferred language).

- `question_voice`: A URL from which a sound file containing a custom reading of the `question` may be retrieved, or `null`. See below for further details.
- `start_date`: The date and time on which the poll began (or will begin).
- `end_date`: The date and time on which the poll ended (or will end).
- `is_registration`: `true` for polls that are part of registration, `false` otherwise.
- `is_registration_end`: `true` for polls that end registration, `false` otherwise.
- `type`: The data type of responses to the question. See below for the possible values.
- `default_response`: The `default_response` is the default text to send to submissions to this poll or `null` if there is no default.
- `default_response_voice`: A URL from which a sound file containing a custom reading of the `default_response` may be retrieved, or `null`. If `default_response` is `null`, this should also be `null`. See below for further details.
- `response_type`: Whether the poll may be answered multiple times or not. See below for possible values.

The `language` parameter should be a two-letter language code as defined in ISO 639-1. It may **not** be `null`.

The `start_date` and `end_date` fields should be ISO 8601 and RFC 3339 compatible UTC timestamps or `null`.

Allowed values for `type`:

- `text` (t in RapidSMS polls)
- `numeric` (n in RapidSMS polls)
- `location` (l in RapidSMS polls)
- `none` (see below)
- `other` (all other RapidSMS polls)

Updates to this API may extend the list of allowed `type` values.

Polls of type `none` require no response from the user and responses to such polls should not be submitted to UReport. These polls are informational messages (and are typically used during registration).

Allowed values for `response_type`:

- `allow_all` (a in RapidSMS polls)
- `allow_one` (o in RapidSMS polls)

The values of `question_voice` or `default_response_voice` may be a URL from which a sound file maybe be retrieved or `null`. If the value is a URL, a GET request to the URL should return a sound file in `.ogg`, `.mp3` or `.wav` format along with an appropriate `Content-Type` header. The `.ogg` format using one of the Xiph.org free codecs (Speex, Vorbis, Opus or FLAC) is recommended.

If `question_voice` or `default_response_voice` is `null` and the backend in use is a voice backend, the API client is expected to use a suitable text-to-speech engine to generate a fallback sound file from the poll `question` or `default_response` as appropriate.

Example request:

```
GET /ureporters/vumi_go_sms/+256775551122/polls/current
Host: example.com
Accept: application/json
```

Example response (success, current poll available):

```

HTTP/1.1 200 OK
Content-Type: application/json

{
  "success": true,
  "poll": {
    "id": "1234",
    "language": "en",
    "name": "Poll 1",
    "question": "What is your quest?",
    "question_voice": "http://www.example.com/poll1234.ogg",
    "start_date": "2012-04-23T18:25:43.511Z",
    "end_date": null,
    "is_registration": false,
    "is_registration_end": false,
    "type": "text",
    "default_response": null,
    "default_response_voice": null,
    "response_type": "allow_all",
  }
}

```

Example response (success, no current poll available):

```

HTTP/1.1 200 OK
Content-Type: application/json

{
  "success": true,
  "poll": null,
}

```

GET /ureporters/ (*str: backend*) /

str: *user_address/polls/topics* Return a list of the current topics poll results are available for.

Only **open** polls are returned in the results.

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error

Description of the JSON response attributes:

The `poll_topics` are a JSON list of topics for which there are currently open polls. Each poll topic consists of:

- a `poll_id` which is the unique id of the poll for the topic.
- a `label` which is a human-readable description of the topic in the referred language of the Ureporter specified in the URL.

Example request:

```
POST /ureporters/vumi_go_sms/+256775551122/polls/topics
Host: example.com
Accept: application/json
```

Example response (success):

```
HTTP/1.1 200 OK
Content-Type: application/json
```

```
{
  "success": true,
  "poll_topics": [
    {
      "poll_id": "poll-1234",
      "label": "Topic A",
    },
    {
      "poll_id": "poll-5678",
      "label": "Topic B",
    }
  ]
}
```

POST /ureporters/ (*str: backend*) /
str: user_address/poll/str: poll_id/responses/ Submit a result for a poll.

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).
- **poll_id** (*str*) – The `id` of the poll the response is being submitted to.

Json Parameters

- **response** (*str*) – The text the UReporter responded with.

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error
- **404** – poll not found

Description of the JSON response attributes:

The `accepted` parameter is `true` if the response was accepted as valid (i.e. the poll is complete) or `false` if the response was invalid.

The response is either additional text to send to the Ureporter, or null.

Example request:

```
POST /ureporters/vumi_go_sms/+256775551122/poll/poll-1234/responses/
Host: example.com
Accept: application/json
```

```
{
  "response": "response text"
}
```

Example response (success):

```
HTTP/1.1 200 OK
Content-Type: application/json
```

```
{
  "success": true,
  "result": {
    "accepted": true,
    "response": "Thank you for answering the poll."
  }
}
```

GET /ureporters/ (str: backend) / str: user_address/poll/str: poll_id/summary Returns a summary of the poll results.

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).
- **poll_id** (*str*) – The id of the poll to retrieve a summary for.

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error
- **404** – poll not found

Description of the JSON response attributes:

A `poll_result` has the following attributes:

- `total_responses` which is a count of the total number of responses received.
- `total_categorized_responses` which is the sum of responses by category. A response can belong to more than one category
- `responses` which is a list summarizing the received responses by category. Each summary entry has a:
 - `name` which gives a human-readable name for the categorized responses in the Ureporters preferred language.

`-count` which gives the number of times this response was received.

The percentage of times each response was received should be $(\text{count} / \text{total_responses}) * 100$.

Example request:

```
POST /ureporters/vumi_go_sms/+256775551122/poll/poll-1234/summary
Host: example.com
Accept: application/json
```

Example response (success):

```
HTTP/1.1 200 OK
Content-Type: application/json
```

```
{
  "success": true,
  "poll_result": {
    "total_responses": 3756,
    "responses": [
      {
        "label": "Choice 1",
        "count": 1234
      },
      {
        "label": "Choice 2",
        "count": 2522
      }
    ]
  }
}
```

```
POST /ureporters/ (str: backend) /
str: user_address/reports/ Submit a Ureport.
```

Request Headers

- **Accept** – Should be `application/json`.
- **Authorization** – Optional HTTP Basic authentication.

Parameters

- **backend** (*str*) – The RapidSMS / U-Report backend the user is utilizing (e.g. `vumi_go_ussd` or `vumi_go_voice`).
- **address** (*str*) – The address of the user (e.g. `+256775551122`).

Response Headers

- **Content-Type** – `application/json`.

Status Codes

- **200** – no error
- **404** – ureporter not found

Description of the JSON response attributes:

The `accepted` parameter is `true` if the response was accepted as valid (i.e. the poll is complete) or `false` if the response was invalid.

The response is either additional text to send to the Ureporter, or `null`.

Example request:

```
POST /ureporters/vumi_go_sms/+256775551122/reports/  
Host: example.com  
Accept: application/json
```

```
{  
  "report": "resport text"  
}
```

Example response (success):

```
HTTP/1.1 200 OK  
Content-Type: application/json
```

```
{  
  "success": true,  
  "result": {  
    "accepted": true,  
    "response": "Thank you for your report."  
  }  
}
```

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