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# **CloudSigma API ver. 2.0**

## **Documentation**

*Release unknown*

**CloudSigma**

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## Release Notes

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### 1.1 Silicon Release

**Date Released:** 2015-03-26

- Allow resources to be shared and accessed between accounts [Access Control Lists](#)
- Allow SSH keys to be imported and managed by the cloud and attached to servers [SSH key pairs](#)

### 1.2 Aluminium Release

**Date Released:** 2014-11-26

- Extended [Capabilities](#) call
- Support of Zadara storage type [Drives](#)
- Better explained firewall restrictions depending on account state [Firewall Policies](#)
- Fixed list of API endpoints in [General Notes](#) and [Locations](#)
- We now support Solaris Kernel Zones in some cloud locations. Improved details and split sections depending on hypervisor - see [Servers / VMs](#), [KVM Servers](#) and [Solaris Kernel Zone Servers](#)
- Support for serial console to a server - see [Servers / VMs](#). Servers running under KVM hypervisor also allow VNC as before - [KVM Servers](#).

### 1.3 Magnesium Release

**Date Released:** 2014-09-08

- Various stability and performance improvements.
- Better explanation of *storage types* and explanation of default *network restrictions*.
- Support for Juju simple streams.
- Now it is possible to specify size for *drive clone* call, so that the new drive is bigger than the original.

## 1.4 Sodium Release

**Date Released:** 2014-05-20

- Documented the [Firewall Policies](#) delete request.
- Detailed documentation for the special [Metadata](#) fields.
- Better explanation for using [Server Context](#).
- Documented server ACPI shutdown API request - *ACPI Shutdown*.

## 1.5 Neon Release

**Date Released:** 2014-01-29

- New drive parameter allowing changing the *storage type*.
- Most API calls now support standardised *filtering*.
- Asynchronous operations now are exposed via a [jobs](#) API.
- Cloning drives and servers can now [change](#) the destinations' names to differentiate between source and destination.
- Added [audit log](#) documentation.

## 1.6 Fluorine Release

**Date Released:** 2013-12-10

- Notification preferences functionality allowing multiple recipients. See [Notification contacts](#).
- Server runtime details now report I/O statistics for the attached drives in the `drives/runtime/io` object from the response. See [Server Runtime and Server Details](#).
- Capabilities call now includes the count allowed snapshots in the `snapshots` object from the response. See [Capabilities](#).
- API now returns all numbers as integer literals instead of string literals

**Date Released:** 2013-11-18

- Global server context is a place to hold server context information, which is common to all user's servers. See [Global context](#).
- A call for querying the account current usage [Current usage](#).
- Clarifications regarding drive resize [Resizing \(Update or Fail\)](#).
- Section describing allowed names [Permitted characters](#).
- Fixed documentation of response status codes [Servers / VMs, Snapshots, Cloning](#).
- More flexible call for subscriptions auto-renew [Autorenewing](#).
- Login call returns a json object with the user UUID
- Server firewall updates are applied every 30 seconds, as opposed to previous versions, when they were applied immediately on change.

- We now support bursting on IP resources. After the IP subscription has expired, all servers that have the IP attached as static will continue to operate until the user runs out of money. All other servers, will block outgoing traffic originating from that IP - i.e. the IP will stop working on servers on which the user configured it manually.
- Manually configuring an IP, given to the user via DHCP, to another server owned by the same user, is now prohibited.
- Buying a new IP resource, will make the same available on all of the user's servers without power-cycling them. The user can manually configure it on his public network interfaces and it will JUST work.

## 1.7 Oxygen Release

**Date Released:** 2013-10-07

- Server context can be updated for a running server, by updating server or drive definition. See below.
- It is possible to update `name`, `meta`, and `tags` on a running server or a drive mounted on a running server. See [server edit](#) and [drive edit](#).
- Added an action to update a drive, which will fail to update if the drive is mounted on a running server. It is called `resize` because size is the only drive attribute which cannot be changed on a drive mounted on a running server. See [Resizing \(Update or Fail\)](#).
- It is possible to create snapshots for a drive, and later clone the snapshot to a full drive. This makes it possible to restore from a point-in-time version of the snapshot. See [Snapshots](#).
- Added documentation for uploading drive images through simple HTTP POST. See [Upload or Download Drive Images](#).

## 1.8 Nitrogen Release

**Date Released:** 2013-08-01

- Server context. Server context makes it possible to get configuration information about the server from within the virtual machine. [Server Context](#)
- It is possible to request the system to separate a drive physically from one or more other drives. See [Creating Drives in a Different Availability Group \(Create/Clone Avoid\)](#).

## 1.9 Carbon Release

**Date Released:** 2013-07-08

- Recursive deletion of servers - ability to delete a server and its attached drives with a single API call. See [Delete Server together with attached drives \(recursive delete\)](#).

**Date Released:** 2013-05-22

- Firewall functionality. The user can attach firewall policies to NICs. Each policy may have multiple rules for filtering traffic. See My Network -> policies in WebApp or check [Firewall Policies](#) section for API documentation.
- Web VNC. Users can open VNC sessions directly in WebApp. The browser needs to support websockets. To open a Web VNC session go to server properties on a running server, open VNC tunnel, click on the VNC button and choose whether to open the session in the same browser window or in a new browser window/tab.

- The old `hdd` resource is renamed to `dssd` (Distributed SSD). This is reflected in all areas of the API. The subscriptions API still accepts `hdd` as an alias, but returns `dssd`. The capabilities API returns `dssd`.
- OAuth support for single sign-on in WebApp. Users can authenticate in WebApp with an existing account from Google, Twitter, LinkedIn, or Facebook. See Profile -> settings to connect you CloudSigma account with an existing OAuth provider.
- Drive images licenses. Servers running with drives from drives library, which contain software that requires a license need a subscriptions in order to be started. Check Subscriptions -> Purchase -> Software licenses in WebApp to list or purchase software licenses. See [Subscriptions](#) for API docs on purchasing licenses, and [Licenses list](#) for listing purchased licenses.
- NIC runtime information, when listing running servers, now is also added to the NIC definition, so that it is easier to access NIC runtime info from the NIC object itself rather than the server runtime. The old NIC runtime information in the server runtime is retained for backward compatibility.
- Drives attached to stopped servers can now be deleted.

## 1.10 Boron Release

**Date Released:** 2013-03-19

### 1.10.1 API HTTP response status code changes

- HTTP status for PUT (update) requests is changed from 202 Accepted to 200 OK.
- HTTP status for creation of objects is changed from 202 Accepted to 201 Created. This affects Subscription, Servers, Drives, and Tags creation.
- HTTP status for Subscriptions Calculator is changed from 202 Accepted to 200 OK.
- HTTP status for actions with asynchronous results is changed from 200 to 202. This affects action calls on Servers (start, stop, clone, open\_vnc, close\_vnc) and Drives (clone).

## 1.11 Beryllium Release

**Date Released:** 2013-01-16

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## General Notes

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### 2.1 Introduction

### 2.2 API endpoint

Given a server running the CloudSigma API it will be available on the following base URL e.g.:

```
https://{loc}.cloudsigma.com/api/2.0/
```

Where {loc} is a subdomain for a specific location. In the rest of the documentation the URL's will be given relative to that base.

Currently the following CloudSigma location endpoints are available:

Location	Location Code	API Endpoint
Honolulu, United States	HNL	<a href="https://hnl.cloudsigma.com/api/2.0/">https://hnl.cloudsigma.com/api/2.0/</a>
San Jose, United States	SJC	<a href="https://sjc.cloudsigma.com/api/2.0/">https://sjc.cloudsigma.com/api/2.0/</a>
Washington DC, United States	WDC	<a href="https://wdc.cloudsigma.com/api/2.0/">https://wdc.cloudsigma.com/api/2.0/</a>
Zurich, Switzerland	ZRH	<a href="https://zrh.cloudsigma.com/api/2.0/">https://zrh.cloudsigma.com/api/2.0/</a>

See also [Locations](#) API call for an automated way to get all currently available locations.

### 2.3 API Versions

The API version is embedded into the URL. The currently active one is '2.0', e.g.

```
https://lvs.cloudsigma.com/api/2.0/
```

### 2.4 General URL Format

API URLs have the following general format:

```
https://{api_endpoint}/api/{api_version}/{resource}/{object_id}/action/{get_request_parameters}
```

Here is a list of the possible URL formats relative to the base url ([https://{api\\_endpoint}/api/{api\\_version}](https://{api_endpoint}/api/{api_version})):

**/resource/** These URLs usually point to a list of resources like */servers/* or */drives/*. It may also point to a single resource object such as */profile/*.

`/{{resource}}/{{object_id}}` These URLs point to a single resource from a list of resources, for example a single server URL can be: `/servers/6e5ceaaa-0cf8-417a-bf47-53e56d4fcaaa/`

`/{{resource}}/{{object_id}}/action/?do={{action_name}}` Some objects have actions. The name of the action is specified in the 'do=' GET parameter. For example a server object has a start action which is called on the following URL: `/servers/6e5ceaaa-0cf8-417a-bf47-53e56d4fcaaa/action/?do=start`

## 2.5 Authentication

The API supports the following authentication methods :

- HTTP Basic
- HTTP Digest
- Cookie based authentication for web/browser based clients.

## 2.6 HTTP Basic Auth

HTTP Basic Authentication is done with the *Authorization* header. The value of the header is `Basic base64_encode({user_email}:{password})`. For example a user with email `user.email@domain.tld` with password `pass123` results in a value of `user.email@domain.tld:pass123`, which when encoded in Base64 would result in the following header:

```
Authorization: Basic dXNlci5lbWVpYEBkb21haW4udGxkOnBhc3MxMjM=
```

See [RFC 2617#section-2](#) for more detailed discussion of HTTP Basic Authentication.

## 2.7 Digest Access Authentication

In order to use digest authentication, clients should make the request without any authentication, which will result in a 401 Unauthorized response. The response will contain a challenge in the `WWW-Authenticate` header which looks like:

```
WWW-Authenticate: Digest nonce="1363185031.81:FCF2:443b657bfd1a7340a0841c704d93a579", realm="users",
```

Three hashes (we call them HA1 and HA2 and RESPONSE in the example) need to be calculated to generate the response to the challenge and authenticate. The API uses md5 hashing algorithm (`algorithm="MD5"`) and "auth" quality of protection (`qop="auth"`):

```
HA1 = MD5({username}:{realm}:{password})
HA2 = MD5({method}:{uri})
RESPONSE = MD5(HA1:{nonce}:{nc}:{cnonce}:{qop}:HA2)
```

The values for *realm*, *nonce*, and *qop* are given in the challenge header `WWW-Authenticate`. The client has to provide the *username*, *password*, *cnonce*, and *nc*. *cnonce* or client nonce is a random value generated by the client and *nc* or nonce counter is a hexadecimal counter which should be incremented with each subsequent request.

The client should send an `Authorization` header which contains all the values from the `WWW-Authenticate` response header, together with the following values *username*, *uri*, *cnonce*, *nc*, and *response*, which contains the calculated RESPONSE hash.

In the example above a user with an email `user.email@domain.tld`, and with password `pass123` may send the following `Authorization` header in the next request:

```
Authorization: Digest username="user.email@domain.tld", realm="users", nonce="1363188235.48:54A3:135
```

For more information on Digest access authentication see [RFC 2617#section-3](#) or the wikipedia article on [Digest Access Authentication](#).

## 2.8 Cookie-based Authentication

Browser-based clients can use cookie authentication. The authentication is token is stored in the `sessionid` cookie. All requests except `GET` and `OPTIONS` require also a **CSRF token**. The CSRF token is needed to prevent [Cross-site Request Forgery](#). It is specified as a custom header `X-CSRFToken` on each request. The value for the CSRF token is set by the server in the `csrftoken` cookie.

To obtain a `sessionid` and `csrftoken` cookies, make a login request with a `POST` to `/api/2.0/accounts/action/?do=login` with an object containing “username” and “password” fields with the corresponding username and password values:

```
POST /api/2.0/accounts/action/?do=login HTTP/1.1
Content-Type:application/json

{"username": "user.email@domain.tld", "password": "pass123"}
```

The response will contain the two cookies:

```
Set-Cookie: csrftoken=J24Zr4nEcXZcHtdoaNG02WiWoA0qXFg5; expires=Tue, 11-Mar-2014 15:47:14 GMT; Max-Age=30000
Set-Cookie: sessionid=c38919b96789c3a12c6c204676d63308; expires=Tue, 26-Mar-2013 15:47:14 GMT; httpOnly
```

All subsequent requests should contain both `sessionid` and `csrftoken` in the `Cookie` header and `csrftoken` in the `X-CSRFToken` header:

```
Cookie: sessionid=c38919b96789c3a12c6c204676d63308; csrftoken=J24Zr4nEcXZcHtdoaNG02WiWoA0qXFg5
X-CSRFToken: J24Zr4nEcXZcHtdoaNG02WiWoA0qXFg5
```

To logout (invalidate current `sessionid` and `csrftoken`), one needs to send a `POST` to `/api/2.0/accounts/action/?do=logout` with an empty object:

```
POST /api/2.0/accounts/action/?do=logout HTTP/1.1
Content-Type:application/json

{}
```

## 2.9 Data Format (Content Types)

The API supports both the JSON and XML data formats. By default JSON is used. The request format is specified using the `Content-Type` header and is required for operations that have a request body. The response format can be specified in requests using the `Accept` header. The response contains a `Content-Type` header specifying the data format returned. The following table summarizes the request and response headers concerning data format:

Header name	Specified in Request	Specified in Response
<code>Content-Type</code>	applies to request body	applies to response body
<code>Accept</code>	applies to response body	not applicable

The values which can be used for data format headers are:

Encoding	Header value
JSON	application/json or */*
XML	application/xml

You can also use a URI parameter **?format=json** or **?format=xml** to specify the content type of the response, when sending a **GET** request. This is useful for querying the API manually (via web browser) and should not be used when sending requests programmatically. In case both the Content-Type and URI parameter are used, the URI parameter has precedence. In case there are conflicting URI parameters, the last specified parameter takes precedence. In case of both `application/json` and `application/xml` are specified in an `Accept` header, JSON is returned. If the `Accept` header contains both `*/*` and `application/xml` or `application/json`, the `*/*` is ignored and the more specific content type is used.

## 2.10 Content Compression

Response body data may be compressed with `gzip` compression in order to minimize the amount of data being transferred over the wire. To request response body compression use the `Accept-Encoding` header on the request. The response will contain a `Content-Encoding` header specifying the `gzip` compression algorithm.

Type	Header	Value
Request	Accept-Encoding	gzip
Response	Content-Encoding	gzip

## 2.11 Request Methods

The API uses different HTTP request methods for different types of operations. In order to list the available HTTP request methods on a URL use an **OPTIONS** method request on it.

**Example:** Request:

```
OPTIONS /2.0/servers/ HTTP/1.1
```

Response:

```
HTTP/1.0 200 OK
```

```
GET,PUT,DELETE,POST
```

The following table specifies that meanings of HTTP methods, which can be used by API clients:

**GET** Retrieve a resource or a list of resources.

**PUT** Update an existing resource. **PUT** implies an idempotent action (a request, which when repeated with the same arguments will always yield the same result).

**POST** Create a resources, or do an action on an object (like do start action on a server). **POST** is used for non-idempotent request (requests, which may have different results if repeated multiple times, even if the input data is the same).

**DELETE** Delete a resource.

**OPTIONS** Get a comma separated list of the supported HTTP methods on a URL.



## 2.12 Response Status Codes

The API uses the standard HTTP status code classes, where a code from 200 to 299 signifies success. Request errors have status codes between 400 and 499, and server side errors have codes between 500 and 599. The following status codes are returned by the API:

### Success Status Codes:

- 200** *OK*. Successful request.
- 201** *Object Created*. This request is used for calls which create new objects, such as create drive or create server. The Location response header contains the URI of the newly created object.
- 202** *Accepted*. This header is used for long-running or asynchronous operations such as starting a server or cloning a drive. The header also implies that the request the request may not succeed and may be canceled
- 204** *No Content*. The request was successful and there is no content in response body. This status is used for successful DELETE requests. Clients should be aware to not parse the body as it is empty and is not a valid JSON or XML document.

API errors usually contain a body which describes the error. Check the [Errors](#) section for explanation of the error message format.

### Request Error Status Codes:

- 400** *Bad Request*. This status means that there is an error in the request. The request error may be data format error (non-valid JSON or XML) or an invalid value.
- 401** *Unauthorized*. The provided credentials are incorrect or missing. This response status is normal part of digest authentication in which case, the response will contain WWW-Authenticate header with an authentication challenge.
- 402** *Payment Required*. This error means there are not enough funds in the account to complete action. It occurs when trying to buy subscription without having enough funds in the account, or when trying to start a server without having enough funds for burst usage of 5 days.
- 403** *Forbidden*. The provided credentials are correct but the user is not permitted to complete the action. This status is used for either “permission” or “operation not allowed” error.
- 404** *Not Found*. The requested object does not exist. This error occurs when requesting non-existing resource. The resource may have never been created, or it may be deleted.
- 405** *Method Not Allowed*. This error occurs, when using incorrect HTTP method on an URL. For example DELETE requests are not allowed on /profile/ URL, and will return a 405 status.
- 406** *Not Acceptable*. This error occurs when the content type requested through the Accept header is not supported by the API. The content types supported by the API are application/json, application/xml, and \*/\*, which defaults to application/json. If the Accept header of the request does not contain any of this content types, a 406 status will be returned.

### System Error Status Code

- 500** *Internal Server Error*. This status means a system error has occurred. Please contact support if you encounter such an error.
- 503** *Service Unavailable*. This status means that the system temporarily cannot fulfil request. This status is returned for concurrent updates, when the client makes multiple concurrent requests which try to update the same values, or when the system is out of capacity.

## 2.13 Rate Limits

The API server needs to impose call-rate limits to protect the infrastructure from being maliciously overloaded.

Verb	URI RegEx	Limit
<b>POST</b>	.*	10000 / min
<b>POST</b>	^/servers/	10000 / min
<b>PUT</b>	.*	10000 / min
<b>GET</b>	.*	10000 / min
<b>DELETE</b>	.*	1000 / min

*Note: these limits may change in future*

## 2.14 Permitted characters

The API accepts Unicode characters, with the recommended charset being UTF-8. The only special case is `\0`, which terminates the string.

## 2.15 Filtering

The API allows filtering of returned resources through GET parameters. Specific filtering options are listed in the schema. There are two types of filters:

**exact** Matches the exact value of the field

**contains** Matches, case insensitive, a substring of the value.

The semantics of the filters are as follows:

**AND** Separate GET parameters are ANDed together:

**Example:** `?name=test&tag__name=test_tag`

It will return resources that match: (name = test) AND (has a tag with name = test\_tag)

Same filter applied twice is still ANDed:

**Example:** `?tag__name=test_tag1&tag__name=test_tag2`

It will return resources that match: (has a tag with name = test\_tag1) AND (has a tag with name = test\_tag2)

**OR** Within one GET parameter, values are split by comma and ORed together:

**Example:** `?name=name1,name2`

It will return resources that match (name = name1) OR (name = name2)

Commas can be escaped by a single backslash and they will not be used to split and backslashes that precede a comma can be escaped in order to keep allow splitting by commas:

**Example:** `?name=name\\,long\\,name2`

It will return resources that match (name = name,long) OR (name = name2)

---

**Note:** OR has a higher priority than AND.

**Example:** ?name=name1,name2&tag\_\_name=test\_tag

It will return resources that match ((name = name1) OR (name = name2)) AND (has a tag with name = test\_tag)

---



---

## Locations

---

Locations call provides a list of the currently available CloudSigma locations, and information on specific urls, such as the websockets and upload urls.

**GET /locations/**

**Example request:**

```
GET /api/2.0/locations/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 4
  },
  "objects": [
    {
      "alternative_frontend_url": "https://wdc.cloudsigma.com/ui/",
      "api_endpoint": "https://wdc.cloudsigma.com/api/2.0/",
      "country_code": "US",
      "default_frontend_signup_url": "https://wdc.cloudsigma.com/ui/",
      "default_frontend_url": "https://wdc.cloudsigma.com/ui/",
      "display_name": "Washington DC, United States",
      "documentation_url": "https://cloudsigma-docs.readthedocs.org/en/2.11/",
      "id": "WDC",
      "upload_url": "https://direct.wdc.cloudsigma.com/api/2.0/",
      "websocket_url": "wss://direct.wdc.cloudsigma.com/websocket"
    },
    {
      "alternative_frontend_url": "https://hnl.cloudsigma.com/ui/",
      "api_endpoint": "https://hnl.cloudsigma.com/api/2.0/",
      "country_code": "US",
      "default_frontend_signup_url": "https://hnl.cloudsigma.com/ui/",
      "default_frontend_url": "https://hnl.cloudsigma.com/ui/",
      "display_name": "Honolulu, United States",
      "documentation_url": "https://cloudsigma-docs.readthedocs.org/en/2.11/",
      "id": "HNL",
```

```
    "upload_url": "https://direct.hnl.cloudsigma.com/api/2.0/",
    "websocket_url": "wss://direct.hnl.cloudsigma.com/websocket"
  },
  {
    "alternative_frontend_url": "https://sjc.cloudsigma.com/ui/",
    "api_endpoint": "https://sjc.cloudsigma.com/api/2.0/",
    "country_code": "US",
    "default_frontend_signup_url": "https://sjc.cloudsigma.com/ui/",
    "default_frontend_url": "https://sjc.cloudsigma.com/ui/",
    "display_name": "San Jose, United States",
    "documentation_url": "https://cloudsigma-docs.readthedocs.org/en/2.11/",
    "id": "SJC",
    "upload_url": "https://direct.sjc.cloudsigma.com/api/2.0/",
    "websocket_url": "wss://direct.sjc.cloudsigma.com/websocket"
  },
  {
    "alternative_frontend_url": "https://zrh.cloudsigma.com/ui/",
    "api_endpoint": "https://zrh.cloudsigma.com/api/2.0/",
    "country_code": "CH",
    "default_frontend_signup_url": "https://zrh.cloudsigma.com/ui/",
    "default_frontend_url": "https://zrh.cloudsigma.com/ui/",
    "display_name": "Zurich, Switzerland",
    "documentation_url": "https://cloudsigma-docs.readthedocs.org/en/2.11/",
    "id": "ZRH",
    "upload_url": "https://direct.zrh.cloudsigma.com/api/2.0/",
    "websocket_url": "wss://direct.zrh.cloudsigma.com/websocket"
  }
]
}
```

---

## Pagination

---

### 4.1 Options

All the API requests that return lists of objects support pagination. This is done via two GET parameters:

- **offset** specifies the index at which to start returning objects. It is a zero based index.
- **limit** specifies the maximum number of objects to be returned. If set to 0, all resources will be returned.

**Example request:**

```
GET /api/2.0/servers/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  },
  "objects": [
    {
      "name": "test_server_3",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/servers/3ca429cc-b4f4-42a8-aaa8-3a6df700af06/",
      "runtime": null,
      "status": "stopped",
      "uuid": "3ca429cc-b4f4-42a8-aaa8-3a6df700af06"
    },
    {
      "name": "test_server_0",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      }
    }
  ]
}
```

```

        "resource_uri": "/api/2.0/servers/f50b672f-a963-4b8a-bf05-809b3ffd9a9f/",
        "runtime": null,
        "status": "stopped",
        "uuid": "f50b672f-a963-4b8a-bf05-809b3ffd9a9f"
    },
    {
        "name": "test_server_1",
        "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "resource_uri": "/api/2.0/servers/5d5f22ea-68ae-4b83-9b19-7d7cdd2eb888/",
        "runtime": null,
        "status": "stopped",
        "uuid": "5d5f22ea-68ae-4b83-9b19-7d7cdd2eb888"
    },
    {
        "name": "test_server_4",
        "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "resource_uri": "/api/2.0/servers/8d483469-faeb-4408-899b-a10df6bf3587/",
        "runtime": null,
        "status": "stopped",
        "uuid": "8d483469-faeb-4408-899b-a10df6bf3587"
    },
    {
        "name": "test_server_2",
        "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "resource_uri": "/api/2.0/servers/514a790d-9798-4476-93e9-5cecb4b1c6a3/",
        "runtime": null,
        "status": "stopped",
        "uuid": "514a790d-9798-4476-93e9-5cecb4b1c6a3"
    }
}

```

## 4.2 Meta information

The API returns an object with meta information about the request:

```

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  }
}

```



## 5.1 Format

When one or more errors occur, they are returned to the client in an object with three fields:

- `error_type`: The type of error, one of: *validation*, *notexist*, *backend*, *permission*, *database*, *concurrency*, *billing*, *payment*
- `error_message`: A description of the error that occurred.
- `error_point`: The point at which the error occurred. Always present, but can sometimes be null.

## 5.2 Types

The types of errors:

- `validation`: An error occurred while validating the submitted data. If the error is related to a particular field, it will set the *error\_point*.
- `notexist`: The object you are trying to access does not exist.
- `backend`: There was a problem completing the request on the backend. Please contact the support department.
- `permission`: You do not have permission to complete the operation. May set the *error\_point*.
- `database`: There was a database error.
- `concurrency`: There was a concurrency error caused by two simultaneous conflicting operations (i.e. trying to start and delete a server at the same time). The operation should be retried.
- `billing`: There was a billing problem.
- `payment`: There was a problem processing your payment.

## 5.3 Example

**POST /subscriptions/**  
**Example request:**

```
{
  "amount": "1",
  "from_time": "2012-03-28T14:10:15.948157",
  "period": "2 weeks"
}
```

**Example response:**

```
[
  {
    "error_message": "This field is required",
    "error_point": "resource",
    "error_type": "validation"
  }
]
```

---

## Capabilities

---

### 6.1 Allowed HTTP methods

Method	Description
GET	get the capabilities object

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

The capabilities API call is used to gather all the basic, sensible limits of the API, to prevent applying static limits inside the client application.

Bare in mind, that these capabilities are dynamic - they are based on the cloud usage, location, etc. For example a location might not support **lssd**, but support **magnetic** disk option, or vice versa. If a feature is not supported or is disabled, it will disappear from the result of this call. Most entries are obvious limits on the guest or drive properties.

**hosts** A list of available host types and their limitations.

**cpu\_per\_smp** This gives a range of valid cpu values, per smp, for the given host type. For example, for AMD hosts, one CPU must be between 1000 and 2500MHz: a guest 2000MHz cpu and 2 smp has 1000MHz per smp and is valid, but a guest with 8000MHz cpu and 2 smp has a 4000MHz per smp is not.

**hypervisors** A list of hypervisors and which hosts they are available on. More details on the hosts can be found in the in the hosts entry.

**drives** A list of available drive types and their limitations. The values in `max_size` and `min_size` are deprecated and are identical to the nested ones in size.

**snapshots** Information about the current and maximum number of snapshots allowed for the account. These are global, not per drive.

**servers** This entry is deprecated and contains the same values for amd hosts.

**GET** `/capabilities/`

**statuscode 200** no error

**Example request:**

```
GET /api/2.0/capabilities/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "drives": {
    "dssd": {
      "max_size": 4971194891468,
      "min_size": 536870912,
      "size": {
        "max": 4971194891468,
        "min": 536870912
      }
    }
  },
  "hosts": {
    "amd": {
      "cpu": {
        "max": 40000,
        "min": 250
      },
      "cpu_per_smp": {
        "max": 2400,
        "min": 1000
      },
      "mem": {
        "max": 68719476736,
        "min": 268435456
      },
      "smp": {
        "max": 24,
        "min": 1
      }
    },
    "intel": {
      "cpu": {
        "max": 40000,
        "min": 250
      },
      "cpu_per_smp": {
        "max": 2400,
        "min": 1000
      },
      "mem": {
        "max": 68719476736,
        "min": 268435456
      },
      "smp": {
        "max": 48,
        "min": 1
      }
    }
  },
  "hypervisors": {
    "kvm": [
      "amd"
    ]
  },
  "servers": {
```

```
    "cpu": {
      "max": 40000,
      "min": 250
    },
    "cpu_per_smp": {
      "max": 2400,
      "min": 1000
    },
    "mem": {
      "max": 68719476736,
      "min": 268435456
    },
    "smp": {
      "max": 24,
      "min": 1
    }
  },
  "snapshots": {
    "current": 0,
    "max": 600
  }
}
```



---

## Clone naming

---

When cloning drives or whole servers the parameter for the name of the cloned entity could be omitted. In that scenario clone naming strategy based on the profile settings is being invoked.

Clone naming strategies are kept on `clone_naming` property in the user profile object. Possible values for it:

- NONE do not append anything to the cloned drive's name. **[default]**
- COUNTER appends a number at the end of the name or increase it in case there is a number already.
- DATE appends the current date or try to update it in case there is one already.
- TIMESTAMP appends the current timestamp or try to update it in case there is one already.

If the date/timestamp at the end is already up-to-date the clone naming strategy will fallback to COUNTER **without** stripping the date/timestamp before.

### 7.1 Example

Let's say we have a drive named "test\_drive\_x" and we're going to clone it. First we want to check out how the counter strategy is working and we're going to set the `clone_naming` property to "COUNTER".

**Example request:**

```
PUT /api/2.0/profile/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "address": "",
  "api_https_only": false,
  "autotopup_amount": "200.0000000000000000",
  "autotopup_threshold": "200.0000000000000000",
  "bank_reference": "jdoe123",
  "clone_naming": "COUNTER",
  "company": "",
  "country": "US",
  "currency": "USD",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "invoicing": false,
  "key_auth": false,
  "language": "en_US",
```

```
"last_name": "Doe",
"mailing_list": true,
"meta": {},
"my_notes": "",
"nickname": "",
"phone": "",
"postcode": "",
"reseller": "",
"signup_time": "2013-11-04T11:30:20.860838+00:00",
"state": "REGULAR",
"tax_name": null,
"tax_rate": null,
"title": "",
"town": "",
"uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
"vat": ""
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "address": "",
  "api_https_only": false,
  "autotopup_amount": "200.0000000000000000",
  "autotopup_threshold": "200.0000000000000000",
  "bank_reference": "jdoe123",
  "clone_naming": "COUNTER",
  "company": "",
  "country": "US",
  "currency": "USD",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "invoicing": false,
  "key_auth": false,
  "language": "en_US",
  "last_name": "Doe",
  "mailing_list": true,
  "meta": {},
  "my_notes": "",
  "nickname": "",
  "phone": "",
  "postcode": "",
  "reseller": "",
  "signup_time": "2013-11-04T11:30:20.860838+00:00",
  "state": "REGULAR",
  "tax_name": null,
  "tax_rate": null,
  "title": "",
  "town": "",
  "uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
  "vat": ""
}
```

Great. And now we could clone the drive without bothering to make up a new name for it:



**Example request:**

```

POST /api/2.0/drives/1455c968-3477-4504-a93d-d0a7dc961f00/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

{
  "affinities": [],
  "media": "cdrom",
  "storage_type": "dssd"
}

```

**Example response:**

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [
        {
          "resource_uri": "/api/2.0/jobs/3564c1c2-c498-40d8-b063-aa173e2ec0c5/",
          "uuid": "3564c1c2-c498-40d8-b063-aa173e2ec0c5"
        }
      ],
      "licenses": [],
      "media": "cdrom",
      "meta": {},
      "mounted_on": [],
      "name": "test_drive_x_1",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/86164dec-fe21-4590-b2d7-a5733c38b24f/",
      "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 1073741824,
      "snapshots": [],
      "status": "cloning_dst",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "86164dec-fe21-4590-b2d7-a5733c38b24f"
    }
  ]
}

```

Done. Our new drive is named “test\_drive\_x\_1”. If you have never changed the `clone_naming` property it will be set to “COUNTER” by default. Let’s see how the other two strategies are working.

Starting with “DATE”... *(responses below here are stripped for better readability)*

**Example request:**

```

PUT /api/2.0/profile/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

{
  "address": "",
  "api_https_only": false,
  "autotopup_amount": "200.0000000000000000",
  "autotopup_threshold": "200.0000000000000000",
  "bank_reference": "jdoe123",
  "clone_naming": "DATE",
  "company": "",
  "country": "US",
  "currency": "USD",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "invoicing": false,
  "key_auth": false,
  "language": "en_US",
  "last_name": "Doe",
  "mailing_list": true,
  "meta": {},
  "my_notes": "",
  "nickname": "",
  "phone": "",
  "postcode": "",
  "reseller": "",
  "signup_time": "2013-11-04T11:30:20.860838+00:00",
  "state": "REGULAR",
  "tax_name": null,
  "tax_rate": null,
  "title": "",
  "town": "",
  "uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
  "vat": ""
}

```

Great. And now cloning:

**Example request:**

```

POST /api/2.0/drives/1455c968-3477-4504-a93d-d0a7dc961f00/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

{
  "affinities": [],
  "media": "cdrom",
  "storage_type": "dssd"
}

```

**Example response:**

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{

```

```

    "name": "test_drive_x-2014-06-05"
  }

```

Similary with “TIMESTAMP”...

**Example request:**

```

PUT /api/2.0/profile/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "address": "",
  "api_https_only": false,
  "autotopup_amount": "200.0000000000000000",
  "autotopup_threshold": "200.0000000000000000",
  "bank_reference": "jdoe123",
  "clone_naming": "TIMESTAMP",
  "company": "",
  "country": "US",
  "currency": "USD",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "invoicing": false,
  "key_auth": false,
  "language": "en_US",
  "last_name": "Doe",
  "mailing_list": true,
  "meta": {},
  "my_notes": "",
  "nickname": "",
  "phone": "",
  "postcode": "",
  "reseller": "",
  "signup_time": "2013-11-04T11:30:20.860838+00:00",
  "state": "REGULAR",
  "tax_name": null,
  "tax_rate": null,
  "title": "",
  "town": "",
  "uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
  "vat": ""
}

```

Great. And now cloning:

**Example request:**

```

POST /api/2.0/drives/1455c968-3477-4504-a93d-d0a7dc961f00/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "affinities": [],
  "media": "cdrom",
  "storage_type": "dssd"
}

```

**Example response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "name": "test_drive_x-2014-06-05 09:45:56"
}
```

---

## Drives

---

### 8.1 Allowed HTTP methods

Method	Description
GET	get / list object/s
POST	create new object/s
PUT	update / modify object/s
DELETE	delete object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 8.2 Listing

#### GET /drives/

Gets the list of drives to which the authenticated user has access.

##### Parameters

- **fields** – A set of field names specifying the returned fields

##### Status Codes

- **200** – no error

##### Example request 1 - default list:

```
GET /api/2.0/drives/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

##### Example response 1 - default list:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 7
  },
}
```

```

"objects": [
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
    "status": "unmounted",
    "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/b969d04b-b63f-4b67-9a92-c878d9d53232/",
    "status": "unmounted",
    "uuid": "b969d04b-b63f-4b67-9a92-c878d9d53232"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/cd9580ef-692c-4da2-b64d-59c88809c30b/",
    "status": "unmounted",
    "uuid": "cd9580ef-692c-4da2-b64d-59c88809c30b"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
    "status": "unmounted",
    "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/ea31b27b-807a-4710-b37c-c092f64bf4f7/",
    "status": "unmounted",
    "uuid": "ea31b27b-807a-4710-b37c-c092f64bf4f7"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0/",
    "status": "unmounted",
    "uuid": "e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",

```

```

        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/drives/b582ed29-0cab-4e40-bf91-40d4b4dcc964/",
      "status": "unmounted",
      "uuid": "b582ed29-0cab-4e40-bf91-40d4b4dcc964"
    }
  ]
}

```

**Example request 2 - just uuid and status fields:**

```

GET /api/2.0/drives/?fields=uuid,status&limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

```

**Example response 2 - just uuid and status fields:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 7
  },
  "objects": [
    {
      "status": "unmounted",
      "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
    },
    {
      "status": "unmounted",
      "uuid": "b969d04b-b63f-4b67-9a92-c878d9d53232"
    },
    {
      "status": "unmounted",
      "uuid": "cd9580ef-692c-4da2-b64d-59c88809c30b"
    },
    {
      "status": "unmounted",
      "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
    },
    {
      "status": "unmounted",
      "uuid": "ea31b27b-807a-4710-b37c-c092f64bf4f7"
    },
    {
      "status": "unmounted",
      "uuid": "e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0"
    },
    {
      "status": "unmounted",
      "uuid": "b582ed29-0cab-4e40-bf91-40d4b4dcc964"
    }
  ]
}

```

## 8.3 Detailed listing

### GET /drives/detail/

Gets the detailed list of drives with additional information to which the authenticated user has access.

#### Status Codes

- 200 – no error

#### Example request:

```
GET /api/2.0/drives/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 7
  },
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {
        "description": "",
        "install_notes": ""
      },
      "mounted_on": [],
      "name": "otom-0-take2",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 12348030976,
      "snapshots": [],
      "status": "unmounted",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
    },
  ]
}
```



```

    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_4",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/b969d04b-b63f-4b67-9a92-c878d9d53232/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b969d04b-b63f-4b67-9a92-c878d9d53232"
  },
  {
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_1",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/cd9580ef-692c-4da2-b64d-59c88809c30b/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "cd9580ef-692c-4da2-b64d-59c88809c30b"
  },
  {
    "affinities": [],
    "allow_multimount": false,

```

```
"grantees": [],
"jobs": [
  {
    "resource_uri": "/api/2.0/jobs/e81fae7b-7966-46f6-917f-d366a799b550/",
    "uuid": "e81fae7b-7966-46f6-917f-d366a799b550"
  },
  {
    "resource_uri": "/api/2.0/jobs/3a458646-73ea-4755-a398-953a33e8200d/",
    "uuid": "3a458646-73ea-4755-a398-953a33e8200d"
  },
  {
    "resource_uri": "/api/2.0/jobs/e048129a-7652-4ab8-a9c3-11c419954b93/",
    "uuid": "e048129a-7652-4ab8-a9c3-11c419954b93"
  },
  {
    "resource_uri": "/api/2.0/jobs/ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95/",
    "uuid": "ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95"
  },
  {
    "resource_uri": "/api/2.0/jobs/1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4/",
    "uuid": "1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4"
  },
  {
    "resource_uri": "/api/2.0/jobs/e222c128-02bc-4109-ab8c-e8eaec2deb84/",
    "uuid": "e222c128-02bc-4109-ab8c-e8eaec2deb84"
  },
  {
    "resource_uri": "/api/2.0/jobs/d73a977d-13e2-4af7-bb46-9f90a3cdb709/",
    "uuid": "d73a977d-13e2-4af7-bb46-9f90a3cdb709"
  },
  {
    "resource_uri": "/api/2.0/jobs/9751e954-6272-4170-ace4-749234beda41/",
    "uuid": "9751e954-6272-4170-ace4-749234beda41"
  },
  {
    "resource_uri": "/api/2.0/jobs/8d1914a9-ef59-4ca5-b0b9-94e5100e01f1/",
    "uuid": "8d1914a9-ef59-4ca5-b0b9-94e5100e01f1"
  },
  {
    "resource_uri": "/api/2.0/jobs/8882034b-8149-4381-8e3b-3d63df48a089/",
    "uuid": "8882034b-8149-4381-8e3b-3d63df48a089"
  },
  {
    "resource_uri": "/api/2.0/jobs/8961f56a-009e-4d70-b39a-363c86e2797f/",
    "uuid": "8961f56a-009e-4d70-b39a-363c86e2797f"
  },
  {
    "resource_uri": "/api/2.0/jobs/b18335fd-5c38-43a0-a6ad-5e4150609317/",
    "uuid": "b18335fd-5c38-43a0-a6ad-5e4150609317"
  },
  {
    "resource_uri": "/api/2.0/jobs/15e31b74-49bd-4d5f-b300-b1104dcebda2/",
    "uuid": "15e31b74-49bd-4d5f-b300-b1104dcebda2"
  },
  {
    "resource_uri": "/api/2.0/jobs/ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a/",
    "uuid": "ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a"
  },
]
```

```

{
  "resource_uri": "/api/2.0/jobs/0d8ae7db-72e3-4a9c-bc5e-20b767fefb46/",
  "uuid": "0d8ae7db-72e3-4a9c-bc5e-20b767fefb46"
},
{
  "resource_uri": "/api/2.0/jobs/f9a362a3-1c0c-4672-857d-78533e8745a4/",
  "uuid": "f9a362a3-1c0c-4672-857d-78533e8745a4"
},
{
  "resource_uri": "/api/2.0/jobs/eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73/",
  "uuid": "eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73"
},
{
  "resource_uri": "/api/2.0/jobs/5c5e4b51-21b7-446e-8dc5-d2adba7a8b72/",
  "uuid": "5c5e4b51-21b7-446e-8dc5-d2adba7a8b72"
},
{
  "resource_uri": "/api/2.0/jobs/b65998cb-a061-4526-b9b8-8939e0caa726/",
  "uuid": "b65998cb-a061-4526-b9b8-8939e0caa726"
},
{
  "resource_uri": "/api/2.0/jobs/2e11ce11-2016-47cd-a6cd-081961337692/",
  "uuid": "2e11ce11-2016-47cd-a6cd-081961337692"
},
{
  "resource_uri": "/api/2.0/jobs/e05d7f4d-2982-47ac-aa2d-ce0cc72c2292/",
  "uuid": "e05d7f4d-2982-47ac-aa2d-ce0cc72c2292"
},
{
  "resource_uri": "/api/2.0/jobs/a755c06f-0345-4233-b65b-55823e0224e7/",
  "uuid": "a755c06f-0345-4233-b65b-55823e0224e7"
},
{
  "resource_uri": "/api/2.0/jobs/a4d98424-b23e-40b9-af71-aa1c772100eb/",
  "uuid": "a4d98424-b23e-40b9-af71-aa1c772100eb"
},
{
  "resource_uri": "/api/2.0/jobs/61dd578a-7f91-4259-ac18-3c95faab172b/",
  "uuid": "61dd578a-7f91-4259-ac18-3c95faab172b"
},
{
  "resource_uri": "/api/2.0/jobs/86d899d3-940c-401e-bc26-d8394089f993/",
  "uuid": "86d899d3-940c-401e-bc26-d8394089f993"
},
{
  "resource_uri": "/api/2.0/jobs/ad920c1d-4efe-4ed4-87fd-d9d9da718667/",
  "uuid": "ad920c1d-4efe-4ed4-87fd-d9d9da718667"
},
{
  "resource_uri": "/api/2.0/jobs/4d043d40-ebc4-4501-8386-9751ac19f9b9/",
  "uuid": "4d043d40-ebc4-4501-8386-9751ac19f9b9"
},
{
  "resource_uri": "/api/2.0/jobs/9c05f3a1-13a5-45af-8faf-6bb47a53e2d8/",
  "uuid": "9c05f3a1-13a5-45af-8faf-6bb47a53e2d8"
},
{
  "resource_uri": "/api/2.0/jobs/c7e7fe31-179b-4b38-a5fa-e3f399f683f2/",

```

```

        "uuid": "c7e7fe31-179b-4b38-a5fa-e3f399f683f2"
    },
    {
        "resource_uri": "/api/2.0/jobs/3c31b43f-55d8-426a-8124-02c71a0b3b4e/",
        "uuid": "3c31b43f-55d8-426a-8124-02c71a0b3b4e"
    },
    {
        "resource_uri": "/api/2.0/jobs/08312509-d90a-44e9-9f07-280d2e2935ae/",
        "uuid": "08312509-d90a-44e9-9f07-280d2e2935ae"
    },
    {
        "resource_uri": "/api/2.0/jobs/1cd69a16-5aee-45a9-99ec-698a1266c514/",
        "uuid": "1cd69a16-5aee-45a9-99ec-698a1266c514"
    },
    {
        "resource_uri": "/api/2.0/jobs/f1f2db65-5681-4404-888a-46aa97df6d9a/",
        "uuid": "f1f2db65-5681-4404-888a-46aa97df6d9a"
    },
    {
        "resource_uri": "/api/2.0/jobs/11f45314-d3c1-469c-aaa0-d30d3574a62b/",
        "uuid": "11f45314-d3c1-469c-aaa0-d30d3574a62b"
    },
    {
        "resource_uri": "/api/2.0/jobs/9ac68490-9e85-4b41-a76d-754df657dbd1/",
        "uuid": "9ac68490-9e85-4b41-a76d-754df657dbd1"
    },
    {
        "resource_uri": "/api/2.0/jobs/93110b55-ad01-46e7-a71c-c10365e746b4/",
        "uuid": "93110b55-ad01-46e7-a71c-c10365e746b4"
    },
    {
        "resource_uri": "/api/2.0/jobs/7e6036be-b47b-4b7a-86c8-50e9ed585404/",
        "uuid": "7e6036be-b47b-4b7a-86c8-50e9ed585404"
    },
    {
        "resource_uri": "/api/2.0/jobs/e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5/",
        "uuid": "e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5"
    },
    {
        "resource_uri": "/api/2.0/jobs/0b1280ae-b715-4dbc-a902-86c25603474d/",
        "uuid": "0b1280ae-b715-4dbc-a902-86c25603474d"
    },
    {
        "resource_uri": "/api/2.0/jobs/401d7916-359a-4cca-8abd-f6f832c97983/",
        "uuid": "401d7916-359a-4cca-8abd-f6f832c97983"
    },
    {
        "resource_uri": "/api/2.0/jobs/ad1d412b-c51a-4cca-8ff9-81f5976471dd/",
        "uuid": "ad1d412b-c51a-4cca-8ff9-81f5976471dd"
    },
    {
        "resource_uri": "/api/2.0/jobs/bf3ff2b7-52b6-4ac8-921a-7d44b80711bb/",
        "uuid": "bf3ff2b7-52b6-4ac8-921a-7d44b80711bb"
    },
    {
        "resource_uri": "/api/2.0/jobs/9ce2ce9d-587c-46f6-b3bd-991ebf26b121/",
        "uuid": "9ce2ce9d-587c-46f6-b3bd-991ebf26b121"
    },
    },

```

```

{
  "resource_uri": "/api/2.0/jobs/79aed1c7-570a-4191-897a-337476ebc074/",
  "uuid": "79aed1c7-570a-4191-897a-337476ebc074"
},
{
  "resource_uri": "/api/2.0/jobs/1d630913-cef6-4e60-a472-125ded470400/",
  "uuid": "1d630913-cef6-4e60-a472-125ded470400"
},
{
  "resource_uri": "/api/2.0/jobs/51f61346-6d9b-48b7-8cf5-4f70acc1dd97/",
  "uuid": "51f61346-6d9b-48b7-8cf5-4f70acc1dd97"
},
{
  "resource_uri": "/api/2.0/jobs/ec58e294-0906-495f-86a2-4dd423fdd7b6/",
  "uuid": "ec58e294-0906-495f-86a2-4dd423fdd7b6"
},
{
  "resource_uri": "/api/2.0/jobs/ce301022-90ef-4b7d-819a-5b6172b942f2/",
  "uuid": "ce301022-90ef-4b7d-819a-5b6172b942f2"
},
{
  "resource_uri": "/api/2.0/jobs/09b4a45d-1b79-4116-bf01-96331f939d07/",
  "uuid": "09b4a45d-1b79-4116-bf01-96331f939d07"
},
{
  "resource_uri": "/api/2.0/jobs/1287eee1-8b2c-443e-b177-0235a76a3ab3/",
  "uuid": "1287eee1-8b2c-443e-b177-0235a76a3ab3"
},
{
  "resource_uri": "/api/2.0/jobs/7b71312d-fb1c-43c6-962b-6fd15e637ad9/",
  "uuid": "7b71312d-fb1c-43c6-962b-6fd15e637ad9"
},
{
  "resource_uri": "/api/2.0/jobs/e4e5b16d-abca-41e0-8755-75fbb0d434c6/",
  "uuid": "e4e5b16d-abca-41e0-8755-75fbb0d434c6"
},
{
  "resource_uri": "/api/2.0/jobs/dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a/",
  "uuid": "dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a"
},
{
  "resource_uri": "/api/2.0/jobs/c61d1361-633f-4304-b80b-aff64785ac91/",
  "uuid": "c61d1361-633f-4304-b80b-aff64785ac91"
},
{
  "resource_uri": "/api/2.0/jobs/5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52/",
  "uuid": "5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52"
},
{
  "resource_uri": "/api/2.0/jobs/a2021f29-9f12-4443-87b3-0b2fdb9a76b5/",
  "uuid": "a2021f29-9f12-4443-87b3-0b2fdb9a76b5"
},
{
  "resource_uri": "/api/2.0/jobs/38def946-1616-4215-b216-16035a1fb738/",
  "uuid": "38def946-1616-4215-b216-16035a1fb738"
},
{
  "resource_uri": "/api/2.0/jobs/02255a54-8b9f-43ec-b751-89a4afc18a90/",

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```

        "uuid": "02255a54-8b9f-43ec-b751-89a4afc18a90"
    },
    {
        "resource_uri": "/api/2.0/jobs/ec61caa4-2baf-45ec-8f59-61e5716395ca/",
        "uuid": "ec61caa4-2baf-45ec-8f59-61e5716395ca"
    },
    {
        "resource_uri": "/api/2.0/jobs/ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f/",
        "uuid": "ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f"
    },
    {
        "resource_uri": "/api/2.0/jobs/1fbbcfcf-5027-4100-a93b-83ff73ff80cb/",
        "uuid": "1fbbcfcf-5027-4100-a93b-83ff73ff80cb"
    },
    {
        "resource_uri": "/api/2.0/jobs/f12e8cd7-d76e-4b8a-b692-f4c22266e792/",
        "uuid": "f12e8cd7-d76e-4b8a-b692-f4c22266e792"
    },
    {
        "resource_uri": "/api/2.0/jobs/728f1e12-2701-4618-alec-ff1a2cac63d0/",
        "uuid": "728f1e12-2701-4618-alec-ff1a2cac63d0"
    },
    {
        "resource_uri": "/api/2.0/jobs/43f28ca1-e523-4481-966b-1c85fbb673fa/",
        "uuid": "43f28ca1-e523-4481-966b-1c85fbb673fa"
    },
    {
        "resource_uri": "/api/2.0/jobs/9a1cc534-e426-4b68-b001-75f37119b353/",
        "uuid": "9a1cc534-e426-4b68-b001-75f37119b353"
    },
    {
        "resource_uri": "/api/2.0/jobs/3d18c709-1601-4a7f-af9d-530ab86ef825/",
        "uuid": "3d18c709-1601-4a7f-af9d-530ab86ef825"
    },
    {
        "resource_uri": "/api/2.0/jobs/a93b3d0d-e294-4f02-bc44-3cfd36d24ddb/",
        "uuid": "a93b3d0d-e294-4f02-bc44-3cfd36d24ddb"
    },
    {
        "resource_uri": "/api/2.0/jobs/f47b65e9-14ca-40f6-9b2a-60c27091a75f/",
        "uuid": "f47b65e9-14ca-40f6-9b2a-60c27091a75f"
    },
    {
        "resource_uri": "/api/2.0/jobs/69713c13-b1bb-4f84-972c-eb7adf55a051/",
        "uuid": "69713c13-b1bb-4f84-972c-eb7adf55a051"
    },
    {
        "resource_uri": "/api/2.0/jobs/8d650bc8-80f9-4272-b190-11cd4b086d91/",
        "uuid": "8d650bc8-80f9-4272-b190-11cd4b086d91"
    },
    {
        "resource_uri": "/api/2.0/jobs/12684b6c-fc57-4edb-916f-efe78a0e3f51/",
        "uuid": "12684b6c-fc57-4edb-916f-efe78a0e3f51"
    },
    {
        "resource_uri": "/api/2.0/jobs/564c53a1-69c0-45de-8836-f52b49baff18/",
        "uuid": "564c53a1-69c0-45de-8836-f52b49baff18"
    },
    },

```

```

{
  "resource_uri": "/api/2.0/jobs/26b24ab4-a89b-44d6-9194-e7324faa8922/",
  "uuid": "26b24ab4-a89b-44d6-9194-e7324faa8922"
},
{
  "resource_uri": "/api/2.0/jobs/e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f/",
  "uuid": "e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f"
},
{
  "resource_uri": "/api/2.0/jobs/52a1d9da-ee39-4973-b047-9233ae4e09ed/",
  "uuid": "52a1d9da-ee39-4973-b047-9233ae4e09ed"
},
{
  "resource_uri": "/api/2.0/jobs/7c7d954c-58d9-49cf-9d9b-645adeb072de/",
  "uuid": "7c7d954c-58d9-49cf-9d9b-645adeb072de"
},
{
  "resource_uri": "/api/2.0/jobs/6043d2cf-d1d3-4221-bc3a-6aa3c782e68d/",
  "uuid": "6043d2cf-d1d3-4221-bc3a-6aa3c782e68d"
},
{
  "resource_uri": "/api/2.0/jobs/c718ce2d-0ba6-4964-be73-d35282a1024d/",
  "uuid": "c718ce2d-0ba6-4964-be73-d35282a1024d"
},
{
  "resource_uri": "/api/2.0/jobs/3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090/",
  "uuid": "3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090"
},
{
  "resource_uri": "/api/2.0/jobs/3e849dc8-f88e-4aa9-a7bb-5c245c892098/",
  "uuid": "3e849dc8-f88e-4aa9-a7bb-5c245c892098"
},
{
  "resource_uri": "/api/2.0/jobs/fbc30ede-7ec5-4e11-8c51-6b729875bc41/",
  "uuid": "fbc30ede-7ec5-4e11-8c51-6b729875bc41"
},
{
  "resource_uri": "/api/2.0/jobs/243e1c08-3b5f-4a87-acee-ff6aefb1dcdb/",
  "uuid": "243e1c08-3b5f-4a87-acee-ff6aefb1dcdb"
},
{
  "resource_uri": "/api/2.0/jobs/592437ff-0cb0-4f62-a62c-ac964f5e6d45/",
  "uuid": "592437ff-0cb0-4f62-a62c-ac964f5e6d45"
},
{
  "resource_uri": "/api/2.0/jobs/34502453-dba1-4530-bc75-7aaddbd6376/",
  "uuid": "34502453-dba1-4530-bc75-7aaddbd6376"
},
{
  "resource_uri": "/api/2.0/jobs/3246e6e6-ea98-47cf-8e1c-174beec2b466/",
  "uuid": "3246e6e6-ea98-47cf-8e1c-174beec2b466"
},
{
  "resource_uri": "/api/2.0/jobs/a7269f26-a630-4289-9195-322807e5d626/",
  "uuid": "a7269f26-a630-4289-9195-322807e5d626"
},
{
  "resource_uri": "/api/2.0/jobs/9050f1d1-9ac3-4cfb-bd30-0d4b169cc873/",

```

```

        "uuid": "9050f1d1-9ac3-4cfb-bd30-0d4b169cc873"
    },
    {
        "resource_uri": "/api/2.0/jobs/0649e5fe-1a17-4b16-8473-fa847cabb603/",
        "uuid": "0649e5fe-1a17-4b16-8473-fa847cabb603"
    },
    {
        "resource_uri": "/api/2.0/jobs/db26bfbf-a615-4eb4-a631-9ba85140dc3b/",
        "uuid": "db26bfbf-a615-4eb4-a631-9ba85140dc3b"
    },
    {
        "resource_uri": "/api/2.0/jobs/4eb78262-9f34-4ed8-81de-00b9ac11bfd8/",
        "uuid": "4eb78262-9f34-4ed8-81de-00b9ac11bfd8"
    },
    {
        "resource_uri": "/api/2.0/jobs/2a3ac055-0133-4b6e-a999-1c9c197bd55c/",
        "uuid": "2a3ac055-0133-4b6e-a999-1c9c197bd55c"
    },
    {
        "resource_uri": "/api/2.0/jobs/16a02c3f-f5eb-48b6-a8da-8185a39f17a2/",
        "uuid": "16a02c3f-f5eb-48b6-a8da-8185a39f17a2"
    },
    {
        "resource_uri": "/api/2.0/jobs/85ecfbc9-9857-49e4-909a-2c7cdc1adc/",
        "uuid": "85ecfbc9-9857-49e4-909a-2c7cdc1adc"
    },
    {
        "resource_uri": "/api/2.0/jobs/18d1b2ae-3f9b-4cae-b5f4-6086f868d5e5/",
        "uuid": "18d1b2ae-3f9b-4cae-b5f4-6086f868d5e5"
    },
    {
        "resource_uri": "/api/2.0/jobs/7879e9e0-de4b-4b85-b69f-b416243527d9/",
        "uuid": "7879e9e0-de4b-4b85-b69f-b416243527d9"
    },
    {
        "resource_uri": "/api/2.0/jobs/13bfc35b-6374-480d-aed7-d06e9b69f52b/",
        "uuid": "13bfc35b-6374-480d-aed7-d06e9b69f52b"
    },
    {
        "resource_uri": "/api/2.0/jobs/fcc07794-94e0-4f6b-a9f0-32c52098b7f2/",
        "uuid": "fcc07794-94e0-4f6b-a9f0-32c52098b7f2"
    },
    {
        "resource_uri": "/api/2.0/jobs/bce778e4-5003-4cb0-b60b-e86717e11584/",
        "uuid": "bce778e4-5003-4cb0-b60b-e86717e11584"
    },
    {
        "resource_uri": "/api/2.0/jobs/3d7cf702-917a-4864-9a22-b8b1c0ddd0da/",
        "uuid": "3d7cf702-917a-4864-9a22-b8b1c0ddd0da"
    },
    {
        "resource_uri": "/api/2.0/jobs/002b43f6-f12e-4b4a-9566-3affc49cbff5/",
        "uuid": "002b43f6-f12e-4b4a-9566-3affc49cbff5"
    },
    {
        "resource_uri": "/api/2.0/jobs/f6f9423d-e239-48bf-b3e1-7eef57f41df5/",
        "uuid": "f6f9423d-e239-48bf-b3e1-7eef57f41df5"
    },
    },

```



```

{
  "resource_uri": "/api/2.0/jobs/80498624-4b6a-4c23-8db3-0402b8bc61e0/",
  "uuid": "80498624-4b6a-4c23-8db3-0402b8bc61e0"
},
{
  "resource_uri": "/api/2.0/jobs/57cd32c3-8969-4286-b4f3-d8e4132648db/",
  "uuid": "57cd32c3-8969-4286-b4f3-d8e4132648db"
},
{
  "resource_uri": "/api/2.0/jobs/e4ff1f15-d0ee-4717-89a1-2c0ad024391c/",
  "uuid": "e4ff1f15-d0ee-4717-89a1-2c0ad024391c"
},
{
  "resource_uri": "/api/2.0/jobs/a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2/",
  "uuid": "a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2"
},
{
  "resource_uri": "/api/2.0/jobs/aa4a37ed-a657-4544-bcea-35c8b87f7382/",
  "uuid": "aa4a37ed-a657-4544-bcea-35c8b87f7382"
},
{
  "resource_uri": "/api/2.0/jobs/9ecbc462-7fae-4b23-aabb-5a6d05c8c106/",
  "uuid": "9ecbc462-7fae-4b23-aabb-5a6d05c8c106"
},
{
  "resource_uri": "/api/2.0/jobs/4b97a416-bef0-4d9c-ab19-715fb228f7f6/",
  "uuid": "4b97a416-bef0-4d9c-ab19-715fb228f7f6"
},
{
  "resource_uri": "/api/2.0/jobs/ff128f6d-c51b-4d01-8932-14be8748f9dd/",
  "uuid": "ff128f6d-c51b-4d01-8932-14be8748f9dd"
},
{
  "resource_uri": "/api/2.0/jobs/bd4b2465-09b7-4e12-8cfa-7d8779281ee7/",
  "uuid": "bd4b2465-09b7-4e12-8cfa-7d8779281ee7"
},
{
  "resource_uri": "/api/2.0/jobs/03ecdbd7-9799-48c8-aa71-06d072d04b3f/",
  "uuid": "03ecdbd7-9799-48c8-aa71-06d072d04b3f"
},
{
  "resource_uri": "/api/2.0/jobs/871aa701-cda8-47f6-b10b-df6d33f87cc9/",
  "uuid": "871aa701-cda8-47f6-b10b-df6d33f87cc9"
},
{
  "resource_uri": "/api/2.0/jobs/23f8bdc6-5ab4-477c-8f7c-7bdb5952b483/",
  "uuid": "23f8bdc6-5ab4-477c-8f7c-7bdb5952b483"
},
{
  "resource_uri": "/api/2.0/jobs/10f675b4-aff6-4158-98ab-16a285f8705e/",
  "uuid": "10f675b4-aff6-4158-98ab-16a285f8705e"
},
{
  "resource_uri": "/api/2.0/jobs/bcc7eddf-cecd-455c-86e9-64425b26b39e/",
  "uuid": "bcc7eddf-cecd-455c-86e9-64425b26b39e"
},
{
  "resource_uri": "/api/2.0/jobs/16589be9-9bfb-4991-b75a-268a0f5c629d/",

```

```

        "uuid": "16589be9-9bfb-4991-b75a-268a0f5c629d"
    },
    {
        "resource_uri": "/api/2.0/jobs/ad6b508e-882f-4554-962e-10df50a46e51/",
        "uuid": "ad6b508e-882f-4554-962e-10df50a46e51"
    },
    {
        "resource_uri": "/api/2.0/jobs/ebd647a3-6ad1-4ae9-8bfb-b618072f0545/",
        "uuid": "ebd647a3-6ad1-4ae9-8bfb-b618072f0545"
    },
    {
        "resource_uri": "/api/2.0/jobs/799c758f-2e68-44ab-9808-04271937331b/",
        "uuid": "799c758f-2e68-44ab-9808-04271937331b"
    }
],
"licenses": [],
"media": "disk",
"meta": {
    "description": "",
    "install_notes": ""
},
"mounted_on": [],
"name": "atom-sol",
"owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
},
"permissions": [],
"resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
"runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
},
"size": 12348030976,
"snapshots": [],
"status": "unmounted",
"storage_type": "dssd",
"tags": [],
"uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
},
{
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_2",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/ea31b27b-807a-4710-b37c-c092f64bf4f7/",
    "runtime": {

```

```

        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "ea31b27b-807a-4710-b37c-c092f64bf4f7"
},
{
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_3",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0/",
    "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0"
},
{
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_0",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/b582ed29-0cab-4e40-bf91-40d4b4dcc964/",
    "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,

```

```

        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b582ed29-0cab-4e40-bf91-40d4b4dcc964"
}
]
}

```

## 8.4 List single drive

### GET /drives/{uuid}/

Gets detailed information for drive identified by *drive\_uuid*.

#### Status Codes

- 200 – no error

#### Example request:

```

GET /api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_1",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 1073741824,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",

```

```

    "tags": [],
    "uuid": "5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0"
  }

```

## 8.5 Creating

### POST /drives/

Creates a new drive or multiple drives.

#### Status Codes

- 201 – object created

#### Example request:

Create a drive

```

POST /api/2.0/drives/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "media": "disk",
  "name": "test_drive_0",
  "size": 1073741824
}

```

or create multiple drives

```

POST /api/2.0/drives/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "media": "disk",
      "name": "test_drive_0",
      "size": 1073741824
    },
    {
      "media": "disk",
      "name": "test_drive_1",
      "size": 1073741824
    },
    {
      "media": "disk",
      "name": "test_drive_2",
      "size": 1073741824
    },
    {
      "media": "disk",
      "name": "test_drive_3",
      "size": 1073741824
    },
    {
      "media": "disk",
      "name": "test_drive_4",

```

```

        "size": 1073741824
      }
    ]
  }
}

```

or you can omit the {‘objects’: ... } and provide only the list:

```

POST /api/2.0/drives/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

[
  {
    "media": "disk",
    "name": "test_drive_0",
    "size": 1073741824
  },
  {
    "media": "disk",
    "name": "test_drive_1",
    "size": 1073741824
  },
  {
    "media": "disk",
    "name": "test_drive_2",
    "size": 1073741824
  },
  {
    "media": "disk",
    "name": "test_drive_3",
    "size": 1073741824
  },
  {
    "media": "disk",
    "name": "test_drive_4",
    "size": 1073741824
  }
]

```

### Example response

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {},
      "mounted_on": [],
      "name": "test_drive_0",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      }
    }
  ]
}

```

```

    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/b582ed29-0cab-4e40-bf91-40d4b4dcc964/",
    "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "creating",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b582ed29-0cab-4e40-bf91-40d4b4dcc964"
},
{
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_1",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/cd9580ef-692c-4da2-b64d-59c88809c30b/",
    "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "creating",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "cd9580ef-692c-4da2-b64d-59c88809c30b"
},
{
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_2",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],

```

```

"resource_uri": "/api/2.0/drives/ea31b27b-807a-4710-b37c-c092f64bf4f7/",
"runtime": {
  "is_snapshotable": null,
  "snapshots_allocated_size": 0,
  "storage_type": "dssd"
},
"size": 1073741824,
"snapshots": [],
"status": "creating",
"storage_type": "dssd",
"tags": [],
"uuid": "ea31b27b-807a-4710-b37c-c092f64bf4f7"
},
{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_3",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0/",
  "runtime": {
    "is_snapshotable": null,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 1073741824,
  "snapshots": [],
  "status": "creating",
  "storage_type": "dssd",
  "tags": [],
  "uuid": "e3898bfb-32d5-48d1-afd3-c28f4c8ef6d0"
},
{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_4",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/b969d04b-b63f-4b67-9a92-c878d9d53232/",
  "runtime": {

```



```

        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "creating",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b969d04b-b63f-4b67-9a92-c878d9d53232"
}
]
}

```

## 8.6 Editing

### PUT /drives/{uuid}/

Edits a drive. Note that if the drive is mounted on a running server only the name, meta, tags, and allow\_multimount can be changed. If other fields such as size or media are changed for a drive mounted on a running server these changes will be ignored. To make sure that the changes are either fully applied or an error is returned if impossible, use the resize action (*Resizing (Update or Fail)*). Note that changing drive size might be a slow operation, and the drive cannot be used during the resizing.

#### Status Codes

- 200 – no errors

#### Example request:

```

PUT /api/2.0/drives/86468a1e-d622-4080-bb6d-8ec7b635db48/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "media": "cdrom",
  "name": "test_drive_y",
  "size": 1073741824
}

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "cdrom",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_y",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  }
}

```

```

    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/86468a1e-d622-4080-bb6d-8ec7b635db48/",
    "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "86468a1e-d622-4080-bb6d-8ec7b635db48"
}

```

## 8.7 Resizing (Update or Fail)

### POST /drives/{uuid}/action/?do=resize

In order to make sure that drive changes take effect, one can use the `resize` action. It updates a drive definition, and returns an error if not possible to completely apply the new drive definition, which may happen if the drive is mounted on a running server. The name of the action is `resize` because only drive size cannot be changed for a drive mounted on a running server.

Note that the `resize` action is a full definition update (it can update even name and metadata), so a full definition should be provided to this call.

#### Example:

```

POST /api/2.0/drives/df170528-c34d-4009-a806-c7d85c78cad8/action/?do=resize HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_1",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/df170528-c34d-4009-a806-c7d85c78cad8/",
  "runtime": {
    "is_snapshotable": null,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 4294967296,
  "snapshots": [],

```

```

"status": "creating",
"storage_type": "dssd",
"tags": [],
"uuid": "df170528-c34d-4009-a806-c7d85c78cad8"
}

```

Note that the drive in the response is with status resizing:

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {},
      "mounted_on": [],
      "name": "test_drive_1",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/df170528-c34d-4009-a806-c7d85c78cad8/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 2147483648,
      "snapshots": [],
      "status": "resizing",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "df170528-c34d-4009-a806-c7d85c78cad8"
    }
  ]
}

```

## 8.8 Meta

It is possible to add arbitrary key-value data to a drive definition. See [Objects' metadata](#) field for more information.

## 8.9 Deleting

### 8.9.1 Single drive

**DELETE** /drives/{uuid}/

Deletes a single mounted or unmounted drive.

### Status Codes

- **204** – No content, object deletion started.

#### Example request:

```
DELETE /api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop
```

#### Example response:

```
HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8
```

## 8.9.2 Multiple drives

### DELETE /drives/

Deletes multiple mounted or unmounted drives specified by their UUID's.

**statuscode 204** No content, object deletion started.

#### Example request:

Request body

```
{ "objects":
  [
    {
      "uuid": "b137e217-42b6-4ecf-8575-d72efc2d3dbd",
    },
    {
      "uuid": "e035a488-8587-4a15-ab25-9b7343236bc9",
    },
    {
      "uuid": "feded33c-106f-49fa-a1c4-be5c718ad1b5",
    }
  ]
}
```

#### Example response:

```
HTTP/1.0 204 NO CONTENT
```

## 8.10 Cloning

### POST /drives/{uuid}/action/?do=clone

Clones a drive. Request body is optional and any or all of the key/value pairs from the drive definition can be omitted. Size of the cloned drive can only be bigger or the same.

### Status Codes

- **202** – Action accepted, execution is proceeding.

#### Example request:

```

POST /api/2.0/drives/5d537d3f-22ea-4967-9ec0-32e837a8b390/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "affinities": [],
  "media": "cdrom",
  "name": "test_drive_y",
  "size": 1207959631,
  "storage_type": "dssd"
}

```

**Example response:**

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [
        {
          "resource_uri": "/api/2.0/jobs/8b00acbb-889b-44a5-8a8d-dc3617a6145d/",
          "uuid": "8b00acbb-889b-44a5-8a8d-dc3617a6145d"
        }
      ],
      "licenses": [],
      "media": "cdrom",
      "meta": {},
      "mounted_on": [],
      "name": "test_drive_y",
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/03cb7ca7-ca07-4380-9071-c19260fbec59/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 1207975936,
      "snapshots": [],
      "status": "cloning_dst",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "03cb7ca7-ca07-4380-9071-c19260fbec59"
    }
  ]
}

```

**Note:** If no name is specified in the clone call, the name of the cloned drive will be changed using the clone naming strategy set in the profile. See [Clone naming](#) for more information.

### 8.10.1 Request schema

```
{
  "description": "Clone drive",
  "properties": {
    "name": {
      "description": "Name of the cloned drive",
    }
    "media": {
      "description": "Media of the cloned drive",
    }
    "affinities": {
      "description": "Affinities of the cloned drive",
    }
  }
}
```

## 8.11 Availability Groups

It is possible to query which drives share common storage hosts. See *Drives availability groups*.

## 8.12 Creating or Cloning Drives to Different Infrastructure (avoid)

It is possible to hint the system which drives are preferred to be on separate physical storage host. See *Creating Drives in a Different Availability Group (Create/Clone Avoid)*.

## 8.13 Licenses

Drives can have licenses attached to them. This means usage of the given drive on a running server requires either possession of subscriptions for the given licenses or additional payment. Typical such example are some drives in the drives library, see *Licensed drive images* and *Licenses list*

## 8.14 Storage Types

Every drive has a `storage_type` on which they live and cannot be changed after creation. New drives by default go to `dssd`, and *clones* go to the same medium as their origin, but this can be overridden by passing a `storage_type` parameter. Allowed storage types can be different per location, so you should refer to the **drives** section of the *capabilities* call response, where each storage type is specified alongside with the minimum and maximum size of a single drive.

Currently the following storage types are available:

**dssd** The UI name for `dssd` is “Distributed SSD”. As the name implies, the storage uses high-performance SSD drives, which makes this storage type suitable for IO-sensitive applications.

**zadara** The UI name for `zadara` is “Scale-out Magnetic”. Zadara storage is suitable for less IO sensitive applications, which require large amounts of storage, like hundreds of gigabytes or even terabytes. This storage is also cheaper per gigabyte than `dssd`.

New in version Neon.

### 8.14.1 Creating

#### Example request:

```
POST /api/2.0/drives/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "media": "disk",
      "name": "test_zadara_drive",
      "size": 1073741824,
      "storage_type": "zadara"
    }
  ]
}
```

#### Example response:

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {},
      "mounted_on": [],
      "name": "test_zadara_drive",
      "owner": {
        "resource_uri": "/api/2.0/user/80cb30fb-0ea3-43db-b27b-a125752cc0bf/",
        "uuid": "80cb30fb-0ea3-43db-b27b-a125752cc0bf"
      },
      "resource_uri": "/api/2.0/drives/1c17d5ad-d345-4af1-9fc8-89dec02f0daf/",
      "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "zadara"
      },
      "size": 1073741824,
      "snapshots": [],
      "status": "creating",
      "storage_type": "zadara",
      "tags": [],
      "uuid": "1c17d5ad-d345-4af1-9fc8-89dec02f0daf"
    }
  ]
}
```

### 8.14.2 Cloning to the same storage type

#### Example request:

```
POST /api/2.0/drives/1c17d5ad-d345-4af1-9fc8-89dec02f0daf/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{}
```

**Example response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "jobs": [
        {
          "resource_uri": "/api/2.0/jobs/900f6128-7a0f-49c3-9394-aa4f261c1b25/",
          "uuid": "900f6128-7a0f-49c3-9394-aa4f261c1b25"
        }
      ],
      "licenses": [],
      "media": "disk",
      "meta": {},
      "mounted_on": [],
      "name": "test_zadara_drive",
      "owner": {
        "resource_uri": "/api/2.0/user/80cb30fb-0ea3-43db-b27b-a125752cc0bf/",
        "uuid": "80cb30fb-0ea3-43db-b27b-a125752cc0bf"
      },
      "resource_uri": "/api/2.0/drives/203cbccd-0736-42dc-b75a-2bdb4db46909/",
      "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "zadara"
      },
      "size": 1073741824,
      "snapshots": [],
      "status": "cloning_dst",
      "storage_type": "zadara",
      "tags": [],
      "uuid": "203cbccd-0736-42dc-b75a-2bdb4db46909"
    }
  ]
}
```

### 8.14.3 Cloning to another storage type

**Example request:**

```
POST /api/2.0/drives/3be001aa-16df-453a-a2ab-d13981d56589/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "storage_type": "zadara"
}
```



```
}

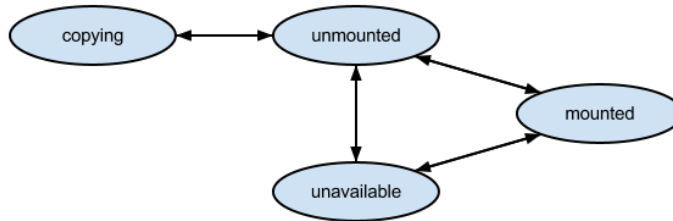
```

**Example response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "jobs": [
        {
          "resource_uri": "/api/2.0/jobs/c360f719-f750-4dfe-bb23-99680179b3e0/",
          "uuid": "c360f719-f750-4dfe-bb23-99680179b3e0"
        }
      ],
      "licenses": [],
      "media": "disk",
      "meta": {},
      "mounted_on": [],
      "name": "test_zadara_drive_for_clone",
      "owner": {
        "resource_uri": "/api/2.0/user/80cb30fb-0ea3-43db-b27b-a125752cc0bf/",
        "uuid": "80cb30fb-0ea3-43db-b27b-a125752cc0bf"
      },
      "resource_uri": "/api/2.0/drives/50b5cfd-f-b286-43e9-8815-dd2c9354644b/",
      "runtime": {
        "is_snapshotable": null,
        "snapshots_allocated_size": 0,
        "storage_type": "zadara"
      },
      "size": 1073741824,
      "snapshots": [],
      "status": "cloning_dst",
      "storage_type": "zadara",
      "tags": [],
      "uuid": "50b5cfd-f-b286-43e9-8815-dd2c9354644b"
    }
  ]
}
```

## 8.15 Drive State Diagram



## 8.16 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "allowed_detail_http_methods": [
    "get",
    "put",
    "delete"
  ],
  "allowed_list_http_methods": [
    "get",
    "put",
    "delete",
    "post"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "affinities": {
      "choices": [
```

```

        "ssd"
    ],
    "default": [],
    "help_text": "A list of affinities this drive should belong to",
    "readonly": false,
    "required": false,
    "type": "list"
},
"allow_multimount": {
    "default": false,
    "help_text": "Allow the drive to be mounted on multiple guests. Not taken into account",
    "readonly": false,
    "required": false,
    "type": "boolean"
},
"grantees": {
    "default": "No default provided.",
    "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
    "readonly": false,
    "required": false,
    "type": "list"
},
"jobs": {
    "default": "No default provided.",
    "help_text": "Background jobs related to this resource",
    "readonly": true,
    "required": true,
    "type": "related"
},
"licenses": {
    "default": [],
    "fields": {
        "amount": {
            "default": 1,
            "help_text": "Number of licenses",
            "readonly": false,
            "required": false,
            "type": "integer"
        },
        "license": {
            "default": "No default provided.",
            "help_text": "A single related resource. Can be either a URI or set of nested",
            "readonly": false,
            "required": true,
            "type": "related"
        },
        "user": {
            "default": null,
            "help_text": "Owner of the license",
            "readonly": false,
            "required": false,
            "type": "related"
        }
    },
    "help_text": "A list of licenses attached to this drive",
    "readonly": false,
    "required": false,
    "type": "related"
}

```

```

    },
    "media": {
      "choices": [
        "cdrom",
        "disk"
      ],
      "default": null,
      "help_text": "Media representation type",
      "readonly": false,
      "required": true,
      "type": "string"
    },
    "meta": {
      "default": {},
      "help_text": "User defined meta information",
      "readonly": false,
      "required": false,
      "type": "dict"
    },
    "mounted_on": {
      "default": "No default provided.",
      "help_text": "Servers on which this drive is mounted on",
      "readonly": true,
      "required": false,
      "type": "related"
    },
    "name": {
      "default": null,
      "help_text": "Human readable name of the drive",
      "readonly": false,
      "required": true,
      "type": "string"
    },
    "owner": {
      "default": null,
      "help_text": "Owner of the drive",
      "readonly": true,
      "required": false,
      "type": "related"
    },
    "permissions": {
      "default": "No default provided.",
      "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
      "readonly": false,
      "required": false,
      "type": "list"
    },
    "resource_uri": {
      "default": "No default provided.",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "runtime": {
      "default": "No default provided.",
      "fields": {
        "is_snapshotable": {

```

```

        "default": "No default provided.",
        "help_text": "Specifies if the drive supports snapshotting",
        "readonly": true,
        "required": true,
        "type": "boolean"
    },
    "snapshots_allocated_size": {
        "default": "No default provided.",
        "help_text": "Sum of the allocated size of this drive's snapshots",
        "readonly": true,
        "required": false,
        "type": "integer"
    },
    "storage_type": {
        "default": "No default provided.",
        "help_text": "Underlying storage",
        "readonly": true,
        "required": true,
        "type": "string"
    }
},
"help_text": "Runtime information of the drive",
"readonly": true,
"required": false,
"type": "related"
},
"size": {
    "default": null,
    "help_text": "Size of the drive in bytes",
    "readonly": false,
    "required": true,
    "type": "integer"
},
"snapshots": {
    "default": "No default provided.",
    "help_text": "Servers on which this drive is mounted on",
    "readonly": true,
    "required": false,
    "type": "related"
},
"status": {
    "default": "No default provided.",
    "help_text": "Status of the drive.",
    "readonly": true,
    "required": true,
    "type": "string"
},
"storage_type": {
    "choices": [
        "magnetic",
        "ssd",
        "dssd",
        "zadara",
        "solidfire"
    ],
    "default": null,
    "help_text": "Underlying storage",
    "readonly": false,

```

```
        "required": false,
        "type": "string"
    },
    "tags": {
        "default": "No default provided.",
        "help_text": "Many related resources. Can be either a list of URIs or list of indivi",
        "readonly": false,
        "required": false,
        "type": "related"
    },
    "uuid": {
        "default": null,
        "help_text": "UUID of the drive",
        "readonly": true,
        "required": true,
        "type": "string"
    }
},
"filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
}
}
```

---

## Snapshots

---

Snapshots are point-in-time versions of a drive. They can be *cloned* to a full drive, which makes it possible to restore an older version of a VM image.

Snapshots are billed based on their occupied size. Since only the difference from the current drive image is stored, a single snapshot's size will be equal to the size of the data which was changed since the snapshot was taken. If no data was changed, the snapshot's size will be zero.

Note that snapshots are billed as `drive`, so drive subscriptions should be bought in order not to burst on snapshots usage.

### 9.1 Allowed HTTP methods

Method	Description
GET	get / list object/s
POST	create new object/s
PUT	update / modify object/s
DELETE	delete object/s

---

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 9.2 Listing

#### **GET** `/snapshots/`

Gets the list of snapshot to which the authenticated user has access.

#### **Parameters**

- **fields** – A set of field names specifying the returned fields

#### **Status Codes**

- **200** – no error

#### **Example request - default list:**

```
GET /api/2.0/snapshots/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response - default list:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 6
  },
  "objects": [
    {
      "allocated_size": 0,
      "drive": {
        "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
        "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
      },
      "grantees": [],
      "meta": {},
      "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/snapshots/f69d43df-092d-4fef-9766-668cb6469f31/",
      "status": "available",
      "tags": [],
      "timestamp": "2014-06-05 09:53:28.851859+00:00",
      "uuid": "f69d43df-092d-4fef-9766-668cb6469f31"
    },
    {
      "allocated_size": 0,
      "drive": {
        "resource_uri": "/api/2.0/drives/cb1e0fee-7666-4cb9-ab17-9f064adf6177/",
        "uuid": "cb1e0fee-7666-4cb9-ab17-9f064adf6177"
      },
      "grantees": [],
      "meta": {},
      "name": "cb1e0fee-7666-4cb9-ab17-9f064adf6177__2014-06-05__09_53_30",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/snapshots/78db3f50-945d-4795-814b-cff122f6b11f/",
      "status": "available",
      "tags": [],
      "timestamp": "2014-06-05 09:53:30.563748+00:00",
      "uuid": "78db3f50-945d-4795-814b-cff122f6b11f"
    },
    {
      "allocated_size": null,
      "drive": {
        "resource_uri": "/api/2.0/drives/bb2b8f77-04ee-42c1-b142-47bc31c2824e/",
        "uuid": "bb2b8f77-04ee-42c1-b142-47bc31c2824e"
      },
      "grantees": [],
    }
  ]
}

```



```

    "meta": {},
    "name": "bb2b8f77-04ee-42c1-b142-47bc31c2824e__2014-06-05__09_53_32",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/44b7f63a-7fb7-4ea4-b32c-ed7d4873a3f1/",
    "status": "creating",
    "tags": [],
    "timestamp": "2014-06-05 09:53:32.186344+00:00",
    "uuid": "44b7f63a-7fb7-4ea4-b32c-ed7d4873a3f1"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/cb1e0fee-7666-4cb9-ab17-9f064adf6177/",
      "uuid": "cb1e0fee-7666-4cb9-ab17-9f064adf6177"
    },
    "grantees": [],
    "meta": {},
    "name": "cb1e0fee-7666-4cb9-ab17-9f064adf6177__2014-06-05__09_53_29",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/33c0b447-d545-457f-a01c-156f674095c8/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:29.770356+00:00",
    "uuid": "33c0b447-d545-457f-a01c-156f674095c8"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/bb2b8f77-04ee-42c1-b142-47bc31c2824e/",
      "uuid": "bb2b8f77-04ee-42c1-b142-47bc31c2824e"
    },
    "grantees": [],
    "meta": {},
    "name": "bb2b8f77-04ee-42c1-b142-47bc31c2824e__2014-06-05__09_53_31",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/62c600cf-7a25-4703-8003-b3c4445233af/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:31.377681+00:00",
    "uuid": "62c600cf-7a25-4703-8003-b3c4445233af"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
      "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
    }
  }
}

```

```

    },
    "grantees": [],
    "meta": {},
    "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/3a057cc8-9b42-44f2-a8cb-c5561f2eddd3/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:28.048803+00:00",
    "uuid": "3a057cc8-9b42-44f2-a8cb-c5561f2eddd3"
  }
}
}

```

### 9.3 Detailed listing

#### GET /snapshots/detail/

Gets the detailed list of snapshots with additional information to which the authenticated user has access.

#### Status Codes

- 200 – no error

#### Example request:

```

GET /api/2.0/snapshots/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 6
  },
  "objects": [
    {
      "allocated_size": 0,
      "drive": {
        "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
        "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
      },
      },
      "grantees": [],
      "meta": {},
      "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      }
    }
  ]
}

```

```

    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/f69d43df-092d-4fef-9766-668cb6469f31/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:28.851859+00:00",
    "uuid": "f69d43df-092d-4fef-9766-668cb6469f31"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/cb1e0fee-7666-4cb9-ab17-9f064adf6177/",
      "uuid": "cb1e0fee-7666-4cb9-ab17-9f064adf6177"
    },
    "grantees": [],
    "meta": {},
    "name": "cb1e0fee-7666-4cb9-ab17-9f064adf6177__2014-06-05__09_53_30",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/78db3f50-945d-4795-814b-cff122f6b11f/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:30.563748+00:00",
    "uuid": "78db3f50-945d-4795-814b-cff122f6b11f"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/bb2b8f77-04ee-42c1-b142-47bc31c2824e/",
      "uuid": "bb2b8f77-04ee-42c1-b142-47bc31c2824e"
    },
    "grantees": [],
    "meta": {},
    "name": "bb2b8f77-04ee-42c1-b142-47bc31c2824e__2014-06-05__09_53_32",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/44b7f63a-7fb7-4ea4-b32c-ed7d4873a3f1/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:32.186344+00:00",
    "uuid": "44b7f63a-7fb7-4ea4-b32c-ed7d4873a3f1"
  },
  {
    "allocated_size": 0,
    "drive": {
      "resource_uri": "/api/2.0/drives/cb1e0fee-7666-4cb9-ab17-9f064adf6177/",
      "uuid": "cb1e0fee-7666-4cb9-ab17-9f064adf6177"
    },
    "grantees": [],
    "meta": {},
    "name": "cb1e0fee-7666-4cb9-ab17-9f064adf6177__2014-06-05__09_53_29",
    "owner": {

```

```

        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/33c0b447-d545-457f-a01c-156f674095c8/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:29.770356+00:00",
    "uuid": "33c0b447-d545-457f-a01c-156f674095c8"
},
{
    "allocated_size": 0,
    "drive": {
        "resource_uri": "/api/2.0/drives/bb2b8f77-04ee-42c1-b142-47bc31c2824e/",
        "uuid": "bb2b8f77-04ee-42c1-b142-47bc31c2824e"
    },
    "grantees": [],
    "meta": {},
    "name": "bb2b8f77-04ee-42c1-b142-47bc31c2824e__2014-06-05__09_53_31",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/62c600cf-7a25-4703-8003-b3c4445233af/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:31.377681+00:00",
    "uuid": "62c600cf-7a25-4703-8003-b3c4445233af"
},
{
    "allocated_size": 0,
    "drive": {
        "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
        "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
    },
    "grantees": [],
    "meta": {},
    "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
    "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/snapshots/3a057cc8-9b42-44f2-a8cb-c5561f2eddd3/",
    "status": "available",
    "tags": [],
    "timestamp": "2014-06-05 09:53:28.048803+00:00",
    "uuid": "3a057cc8-9b42-44f2-a8cb-c5561f2eddd3"
}
]
}

```

## 9.4 List single snapshot

**GET** `/snapshots/{uuid}/`

Gets detailed information for snapshot identified by *snapshot\_uuid*.

### Status Codes

- 200 – no error

### Example request:

```
GET /api/2.0/snapshots/62c600cf-7a25-4703-8003-b3c4445233af/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allocated_size": null,
  "drive": {
    "resource_uri": "/api/2.0/drives/bb2b8f77-04ee-42c1-b142-47bc31c2824e/",
    "uuid": "bb2b8f77-04ee-42c1-b142-47bc31c2824e"
  },
  "grantees": [],
  "meta": {},
  "name": "bb2b8f77-04ee-42c1-b142-47bc31c2824e__2014-06-05__09_53_31",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/snapshots/62c600cf-7a25-4703-8003-b3c4445233af/",
  "status": "creating",
  "tags": [],
  "timestamp": "2014-06-05 09:53:31.377681+00:00",
  "uuid": "62c600cf-7a25-4703-8003-b3c4445233af"
}
```

## 9.5 Creating

**POST** `/snapshots/`

Creates a new snapshot or multiple snapshots.

### Status Codes

- 201 – object created

### Example request:

Create a snapshot

```
POST /api/2.0/snapshots/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

```
{
  "drive": "450357dc-cbe1-471d-b4cc-dbdfe5f28d84",
  "meta": {
    "key": "val"
  },
  "name": "first_snapshot"
}
```

**Example response**

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "allocated_size": null,
      "drive": {
        "resource_uri": "/api/2.0/drives/450357dc-cbe1-471d-b4cc-dbdfe5f28d84/",
        "uuid": "450357dc-cbe1-471d-b4cc-dbdfe5f28d84"
      },
      "grantees": [],
      "meta": {
        "key": "val"
      },
      "name": "first_snapshot",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/snapshots/855ebdc8-ce4b-48d0-9d8d-306c9074be29/",
      "status": "creating",
      "tags": [],
      "timestamp": "2014-06-05 09:52:53.896622+00:00",
      "uuid": "855ebdc8-ce4b-48d0-9d8d-306c9074be29"
    }
  ]
}
```

## 9.6 Editing

**PUT /snapshots/{uuid}/**

Edits a snapshot.

**Status Codes**

- **200** – no errors

**Example request:**

```
PUT /api/2.0/snapshots/855ebdc8-ce4b-48d0-9d8d-306c9074be29/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "drive": "450357dc-cbe1-471d-b4cc-dbdfe5f28d84",
```

```

    "meta": {
      "key": "val_changed",
      "new_key": "new_key_value"
    },
    "name": "first_snapshot_renamed"
  }

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allocated_size": 0,
  "drive": {
    "resource_uri": "/api/2.0/drives/450357dc-cbe1-471d-b4cc-dbdfe5f28d84/",
    "uuid": "450357dc-cbe1-471d-b4cc-dbdfe5f28d84"
  },
  "grantees": [],
  "meta": {
    "key": "val_changed",
    "new_key": "new_key_value"
  },
  "name": "first_snapshot_renamed",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/snapshots/855ebdc8-ce4b-48d0-9d8d-306c9074be29/",
  "status": "available",
  "tags": [],
  "timestamp": "2014-06-05 09:52:53.896622+00:00",
  "uuid": "855ebdc8-ce4b-48d0-9d8d-306c9074be29"
}

```

## 9.7 Metadata

It is possible to add arbitrary key-value data to a snapshot definition. See [Objects' metadata field](#) for more information.

## 9.8 Deleting

### 9.8.1 Single snapshot

**DELETE** /snapshots/{uuid}/

Deletes a single snapshot.

**Status Codes**

- **204** – No content, object deletion started.

**Example request:**

```
DELETE /api/2.0/snapshots/855ebdc8-ce4b-48d0-9d8d-306c9074be29/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8
```

## 9.8.2 Multiple snapshots

**DELETE /snapshots/**

Deletes multiple mounted or unmounted snapshots specified by their UUID's.

**statuscode 204** No content, object deletion started.

**Example request:**

Request body

```
{ "objects":
  [
    {
      "uuid": "b137e217-42b6-4ecf-8575-d72efc2d3dbd",
    },
    {
      "uuid": "e035a488-8587-4a15-ab25-9b7343236bc9",
    },
    {
      "uuid": "feded33c-106f-49fa-a1c4-be5c718ad1b5",
    }
  ]
}
```

**Example response:**

```
HTTP/1.0 204 NO CONTENT
```

## 9.9 Cloning

**POST /snapshots/{uuid}/action/?do=clone**

Clones a snapshot to a drive. Request body is optional and any or all of the key/value pairs can be omitted.

**Status Codes**

- **202** – Action accepted, execution is proceeding.

**Example request:**

```
POST /api/2.0/snapshots/c6368b7c-9d3d-4631-b008-83b73c05f1bd/action/?do=clone&avoid=d7da5038-ac2
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{ }
```

**Example response:** The response is actually a drive definition



```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [
    {
      "resource_uri": "/api/2.0/jobs/260512fc-e9ac-470f-880d-52b4dfcc2b72/",
      "uuid": "260512fc-e9ac-470f-880d-52b4dfcc2b72"
    }
  ],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "7fbfb2ac-5b21-4c5a-81cb-d4343fca71a1__2015-03-19__13_53_52",
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "resource_uri": {
    "resource_uri": "/api/2.0/drives/be62f52e-0b0f-480c-89b2-73e108dd2cef/",
    "uuid": "be62f52e-0b0f-480c-89b2-73e108dd2cef"
  },
  "runtime": {
    "is_snapshotable": null,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 1073741824,
  "snapshots": [],
  "status": "cloning_dst",
  "storage_type": "dssd",
  "tags": [],
  "uuid": "be62f52e-0b0f-480c-89b2-73e108dd2cef"
}

```

---

**Note:** The name of the cloned drive will be changed using the clone naming strategy set in the profile. See [Clone naming](#) for more information

---

## 9.10 Listing drive snapshots

There are 2 ways of getting all snapshots of a drive

### 9.10.1 By filtering snapshots

You can apply drive filter to snapshots

**GET** /snapshots/{uuid}/?drive={drive\_uuid}

```
GET /api/2.0/snapshots/detail/?limit=0&drive=b7cb6615-b6a5-4c31-b755-b86980c64d59 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "allocated_size": 0,
      "drive": {
        "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
        "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
      },
      "grantees": [],
      "meta": {},
      "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/snapshots/f69d43df-092d-4fef-9766-668cb6469f31/",
      "status": "available",
      "tags": [],
      "timestamp": "2014-06-05 09:53:28.851859+00:00",
      "uuid": "f69d43df-092d-4fef-9766-668cb6469f31"
    },
    {
      "allocated_size": 0,
      "drive": {
        "resource_uri": "/api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/",
        "uuid": "b7cb6615-b6a5-4c31-b755-b86980c64d59"
      },
      "grantees": [],
      "meta": {},
      "name": "b7cb6615-b6a5-4c31-b755-b86980c64d59__2014-06-05__09_53_28",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/snapshots/3a057cc8-9b42-44f2-a8cb-c5561f2eddd3/",
      "status": "available",
      "tags": [],
      "timestamp": "2014-06-05 09:53:28.048803+00:00",
      "uuid": "3a057cc8-9b42-44f2-a8cb-c5561f2eddd3"
    }
  ]
}
```

### 9.10.2 In drive definition

In the detailed drive definition there is “snapshots” field

**GET** /drives/{drive\_uuid}/

```
GET /api/2.0/drives/b7cb6615-b6a5-4c31-b755-b86980c64d59/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "snapshots": [
    {
      "resource_uri": "/api/2.0/snapshots/f69d43df-092d-4fef-9766-668cb6469f31/",
      "uuid": "f69d43df-092d-4fef-9766-668cb6469f31"
    },
    {
      "resource_uri": "/api/2.0/snapshots/3a057cc8-9b42-44f2-a8cb-c5561f2eddd3/",
      "uuid": "3a057cc8-9b42-44f2-a8cb-c5561f2eddd3"
    }
  ]
}
```

### 9.10.3 Request schema

```
{
  "description": "Clone snapshot",
  "properties": {
    "name": {
      "description": "Name of the cloned snapshot",
    }
    "media": {
      "description": "Media of the cloned snapshot",
    }
    "affinities": {
      "description": "Affinities of the cloned snapshot",
    }
  }
}
```

## 9.11 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "put",
    "delete"
  ],
```

```
"allowed_list_http_methods": [
    "get",
    "put",
    "delete",
    "post"
],
"default_format": "application/json",
"default_limit": 20,
"fields": {
    "allocated_size": {
        "default": "No default provided.",
        "help_text": "Physical size of the snapshot",
        "readonly": true,
        "required": true,
        "type": "integer"
    },
    "drive": {
        "default": null,
        "help_text": "Drive UUID",
        "readonly": false,
        "required": true,
        "type": "related"
    },
    "grantees": {
        "default": "No default provided.",
        "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
        "readonly": false,
        "required": false,
        "type": "list"
    },
    "meta": {
        "default": {},
        "help_text": "User defined meta information",
        "readonly": false,
        "required": false,
        "type": "dict"
    },
    "name": {
        "default": null,
        "help_text": "Optional human readable name of the snapshot",
        "readonly": false,
        "required": false,
        "type": "string"
    },
    "owner": {
        "default": null,
        "help_text": "Owner of the snapshot",
        "readonly": true,
        "required": false,
        "type": "related"
    },
    "permissions": {
        "default": "No default provided.",
        "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
        "readonly": false,
        "required": false,
        "type": "list"
    },
}
```

```

    "resource_uri": {
      "default": "No default provided.",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "status": {
      "default": "No default provided.",
      "help_text": "Status of the snapshot.",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "tags": {
      "default": "No default provided.",
      "help_text": "Many related resources. Can be either a list of URIs or list of indivi
      "readonly": false,
      "required": false,
      "type": "related"
    },
    "timestamp": {
      "default": null,
      "help_text": "Timestamp of the snapshot creation",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "uuid": {
      "default": null,
      "help_text": "UUID of the snapshot",
      "readonly": true,
      "required": true,
      "type": "string"
    }
  },
  "filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
  }
}

```



---

## Library Drives

---

### 10.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 10.2 Listing

#### GET /libdrives/

Gets the list of library drives to which the authenticated user has access.

**param fields** A set of field names specifying the returned fields

**statuscode 200** no error

#### Example request:

```
GET /api/2.0/libdrives/?limit=5 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDp
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 5,
    "offset": 0,
    "total_count": 158
  },
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "arch": "64",
      "category": [
```

```

        "webserver",
        "general",
        "dbserver"
    ],
    "description": "Ubuntu 12.04.4 Server - 64bit Pre-Installed English with VirtIO support",
    "distribution": "Ubuntu",
    "favourite": false,
    "image_type": "preinst",
    "install_notes": "Initial Credentials: \\n Username: cloudsigma \\n Password: cs2014!!! \\n",
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "Ubuntu 12.04.4 Server",
    "os": "linux",
    "owner": null,
    "paid": false,
    "resource_uri": "/api/2.0/libdrives/d446038b-784d-4ae4-9a4d-46c7b51b403d/",
    "size": 10737418240,
    "status": "unmounted",
    "storage_type": null,
    "tags": [],
    "url": "",
    "uuid": "d446038b-784d-4ae4-9a4d-46c7b51b403d",
    "version": "12.04.4"
},
{
    "affinities": [],
    "allow_multimount": false,
    "arch": "64",
    "category": [
        "webserver",
        "general",
        "dbserver"
    ],
    "description": "Ubuntu 12.04.4 - 64bit Pre-Installed English with VirtIO support and SSH",
    "distribution": "Ubuntu",
    "favourite": false,
    "image_type": "preinst",
    "install_notes": "Initial Credentials: \\n Username: cloudsigma \\n Password: cs2014!!! \\n",
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "Ubuntu 12.04.4 Desktop",
    "os": "linux",
    "owner": null,
    "paid": false,
    "resource_uri": "/api/2.0/libdrives/0a06a5f5-a74e-4f1d-844e-b00d915cfd3c/",
    "size": 10737418240,
    "status": "unmounted",
    "storage_type": null,
    "tags": [],
    "url": "",
    "uuid": "0a06a5f5-a74e-4f1d-844e-b00d915cfd3c",
    "version": "12.04.4"
}

```



```

    },
    {
      "affinities": [],
      "allow_multimount": false,
      "arch": "64",
      "category": [
        "other"
      ],
      "description": "VirtIO Drivers for Windows v.0.1-65",
      "distribution": null,
      "favourite": false,
      "image_type": "install",
      "install_notes": "1. Attach the CD. \\n Please be aware that the CD needs to be attached",
      "jobs": [],
      "licenses": [],
      "media": "cdrom",
      "meta": {},
      "mounted_on": [],
      "name": "VirtIO Drivers for Windows 0.1-65",
      "os": "windows",
      "owner": null,
      "paid": false,
      "resource_uri": "/api/2.0/libdrives/6626f7cd-6085-42a2-a0b4-42262c9c6036/",
      "size": 1000013824,
      "status": "unmounted",
      "storage_type": null,
      "tags": [],
      "url": "",
      "uuid": "6626f7cd-6085-42a2-a0b4-42262c9c6036",
      "version": null
    },
    {
      "affinities": [],
      "allow_multimount": false,
      "arch": "64",
      "category": [
        "general"
      ],
      "description": "Oracle Solaris 11.1 Server - 64bit - Install CD",
      "distribution": null,
      "favourite": false,
      "image_type": "install",
      "install_notes": "1. Attach the CD. \\n Please be aware that the CD needs to be attached",
      "jobs": [],
      "licenses": [],
      "media": "cdrom",
      "meta": {},
      "mounted_on": [],
      "name": "Oracle Solaris 11.1 Server",
      "os": "linux",
      "owner": null,
      "paid": false,
      "resource_uri": "/api/2.0/libdrives/07f3cc68-203e-4094-92c6-5d684ad609b1/",
      "size": 613695488,
      "status": "unmounted",
      "storage_type": null,
      "tags": [],
      "url": "http://www.oracle.com/",
    }
  ]
}

```

```

    "uuid": "07f3cc68-203e-4094-92c6-5d684ad609b1",
    "version": null
  },
  {
    "affinities": [],
    "allow_multimount": false,
    "arch": "64",
    "category": [
      "dbserver"
    ],
    "description": "Pre-installed SQL Server 2012 Standard Edition with SP1 64bit English with",
    "distribution": null,
    "favourite": false,
    "image_type": "preinst",
    "install_notes": "Initial Credentials: \\n\r\nUsername: Cloudsigma \\n\r\nPassword: cs20",
    "jobs": [],
    "licenses": [
      {
        "amount": 1,
        "license": {
          "burstable": true,
          "long_name": "Windows Server",
          "name": "msft_p73_04837_core",
          "resource_uri": "/api/2.0/licenses/12/",
          "type": "instance",
          "user_metric": "smp"
        },
        "user": null
      },
      {
        "amount": 1,
        "license": {
          "burstable": false,
          "long_name": "SQL Server Standard Edition",
          "name": "msft_7nq_00302",
          "resource_uri": "/api/2.0/licenses/14/",
          "type": "instance",
          "user_metric": "smp"
        },
        "user": null
      }
    ],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "Microsoft SQL Server 2012 Standard Edition with SP1",
    "os": "windows",
    "owner": null,
    "paid": true,
    "resource_uri": "/api/2.0/libdrives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/",
    "size": 64424509440,
    "status": "unmounted",
    "storage_type": null,
    "tags": [],
    "url": "http://www.microsoft.com/",
    "uuid": "c7105ec8-5d60-43a7-a11b-18dcfcla4433",
    "version": null
  }
}

```

```
]
}
```

## 10.3 Detailed listing

**Note:** For consistency, we left `/libdrives/detail/` url enabled, but it returns the same level of detail as the list call.

## 10.4 List single drive

**GET** `/libdrives/{uuid}/`

Gets detailed information for library drive identified by *uuid*.

**statuscode 200** no error

**Example request:**

```
GET /api/2.0/libdrives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDpp
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "arch": "64",
  "category": [
    "dbserver"
  ],
  "description": "Pre-installed SQL Server 2012 Standard Edition with SP1 64bit English with VirtIO",
  "distribution": null,
  "favourite": false,
  "image_type": "preinst",
  "install_notes": "Initial Credentials: \\n\\r\\nUsername: Cloudsigma \\n\\r\\nPassword: cs2013! \\n\\",
  "jobs": [],
  "licenses": [
    {
      "amount": 1,
      "license": {
        "burstable": false,
        "long_name": "SQL Server Standard Edition",
        "name": "msft_7nq_00302",
        "resource_uri": "/api/2.0/licenses/14/",
        "type": "instance",
        "user_metric": "smp"
      },
      "user": null
    },
    {

```

```
    "amount": 1,
    "license": {
      "burstable": true,
      "long_name": "Windows Server",
      "name": "msft_p73_04837_core",
      "resource_uri": "/api/2.0/licenses/12/",
      "type": "instance",
      "user_metric": "smp"
    },
    "user": null
  }
],
"media": "disk",
"meta": {},
"mounted_on": [],
"name": "Microsoft SQL Server 2012 Standard Edition with SP1",
"os": "windows",
"owner": null,
"paid": true,
"resource_uri": "/api/2.0/libdrives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/",
"size": 64424509440,
"status": "unmounted",
"storage_type": null,
"tags": [],
"url": "http://www.microsoft.com/",
"uuid": "c7105ec8-5d60-43a7-a11b-18dcfcla4433",
"version": null
}
```

## 10.5 Attaching library drive

If the library drive is a CDROM media, you can attach it directly to an owned server the same way you *attach a regular drive* - specifying the library drive uuid.

## 10.6 Cloning library drive

### **POST** /libdrives/{uuid}/action/?do=clone

If a library drive is not a CDROM, you have to clone it in your account in order to use it. You can clone a library drive the same way you *clone a regular drive*.

## 10.7 Licensed drive images

Some drives in the library may require additional subscriptions or payment to be used. This is visible from the `licenses` field in the drive definition. When you clone such image from drives library to your account, the licenses remain bound to the cloned drive and can't be altered upon drive edit. See also *Licenses list* regarding how to list all defined licenses.

## 10.8 Recognizing library drives

Note that library drives can be queried through regular drives API using `/drives/{uuid}/`. If the drive uuid happens to be the uuid of a library drive, the drive definition will be retrieved. In order to differentiate between owned and library drive, one can check the `owner` attribute, which is `null` for library drives.

It is possible to get a library drive through the drives API, because there isn't a way to know in advance whether an attached drive in a server definition is owned by the user or one from library.

Library drives are not listed in the list and detailed list for ordinary drives.

### Example:

Get the drive from `/drives/{uuid}/`:

```
GET /api/2.0/drives/c7105ec8-5d60-43a7-a11b-18dcfc1a4433/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW9lIGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [
    {
      "amount": 1,
      "license": {
        "burstable": false,
        "long_name": "SQL Server Standard Edition",
        "name": "msft_7nq_00302",
        "resource_uri": "/api/2.0/licenses/14/",
        "type": "instance",
        "user_metric": "smp"
      },
      "user": null
    },
    {
      "amount": 1,
      "license": {
        "burstable": true,
        "long_name": "Windows Server",
        "name": "msft_p73_04837_core",
        "resource_uri": "/api/2.0/licenses/12/",
        "type": "instance",
        "user_metric": "smp"
      },
      "user": null
    }
  ],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "Microsoft SQL Server 2012 Standard Edition with SP1",
  "owner": null,
  "permissions": [],
```

```

"resource_uri": "/api/2.0/drives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/",
"runtime": {
  "is_snapshotable": true,
  "snapshots_allocated_size": 0,
  "storage_type": "dssd"
},
"size": 64424509440,
"snapshots": [],
"status": "unmounted",
"storage_type": "dssd",
"tags": [],
"uuid": "c7105ec8-5d60-43a7-a11b-18dcfcla4433"
}

```

Notice that there is no owner (it is null).

Get the same drive from /libdrives/{uuid}/:

```

GET /api/2.0/libdrives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "arch": "64",
  "category": [
    "dbserver"
  ],
  "description": "Pre-installed SQL Server 2012 Standard Edition with SP1 64bit English with VirtIO",
  "distribution": null,
  "favourite": false,
  "image_type": "preinst",
  "install_notes": "Initial Credentials: \\n\r\nUsername: Cloudsigma \\n\r\nPassword: cs2013! \\n\r\n",
  "jobs": [],
  "licenses": [
    {
      "amount": 1,
      "license": {
        "burstable": false,
        "long_name": "SQL Server Standard Edition",
        "name": "msft_7nq_00302",
        "resource_uri": "/api/2.0/licenses/14/",
        "type": "instance",
        "user_metric": "smp"
      }
    },
    {
      "amount": 1,
      "license": {
        "burstable": true,
        "long_name": "Windows Server",
        "name": "msft_p73_04837_core",
        "resource_uri": "/api/2.0/licenses/12/",
        "type": "instance",

```

```

        "user_metric": "smp"
      },
      "user": null
    }
  ],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "Microsoft SQL Server 2012 Standard Edition with SP1",
  "os": "windows",
  "owner": null,
  "paid": true,
  "resource_uri": "/api/2.0/libdrives/c7105ec8-5d60-43a7-a11b-18dcfcla4433/",
  "size": 64424509440,
  "status": "unmounted",
  "storage_type": null,
  "tags": [],
  "url": "http://www.microsoft.com/",
  "uuid": "c7105ec8-5d60-43a7-a11b-18dcfcla4433",
  "version": null
}

```

## 10.9 Schema

HTTP/1.1 200 OK

Content-Type: application/json; charset=utf-8

```

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "affinities": {
      "choices": [
        "ssd"
      ],
      "default": [],
      "help_text": "A list of affinities this drive should belong to",
      "readonly": false,
      "required": false,
      "type": "list"
    },
    "allow_multimount": {
      "default": false,
      "help_text": "Allow the drive to be mounted on multiple guests. Not taken into account wh",
      "readonly": false,
      "required": false,
      "type": "boolean"
    },
    "arch": {
      "default": null,

```

```

    "help_text": "Operating system bit architecture the drive.",
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "category": {
    "default": [],
    "help_text": "Category of the drive.",
    "readonly": false,
    "required": false,
    "type": "list"
  },
  "description": {
    "default": null,
    "help_text": "Description of drive image.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "distribution": {
    "default": null,
    "help_text": "OS distribution of the drive.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "favourite": {
    "default": null,
    "help_text": "Favourite drive image for user.",
    "readonly": false,
    "required": true,
    "type": "boolean"
  },
  "image_type": {
    "default": null,
    "help_text": "Type of drive image.",
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "install_notes": {
    "default": null,
    "help_text": "Install notes for the drive image.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "jobs": {
    "default": "No default provided.",
    "help_text": "Background jobs related to this resource",
    "readonly": true,
    "required": true,
    "type": "related"
  },
  "licenses": {
    "default": [],
    "fields": {
      "amount": {

```



```

        "default": 1,
        "help_text": "Number of licenses",
        "readonly": false,
        "required": false,
        "type": "integer"
    },
    "license": {
        "default": "No default provided.",
        "help_text": "A single related resource. Can be either a URI or set of nested res
        "readonly": false,
        "required": true,
        "type": "related"
    },
    "user": {
        "default": null,
        "help_text": "Owner of the license",
        "readonly": false,
        "required": false,
        "type": "related"
    }
},
"help_text": "A list of licenses attached to this drive",
"readonly": false,
"required": false,
"type": "related"
},
"media": {
    "choices": [
        "cdrom",
        "disk"
    ],
    "default": null,
    "help_text": "Media representation type",
    "readonly": false,
    "required": true,
    "type": "string"
},
"meta": {
    "default": {},
    "help_text": "User defined meta information",
    "readonly": false,
    "required": false,
    "type": "dict"
},
"mounted_on": {
    "default": "No default provided.",
    "help_text": "Servers on which this drive is mounted on",
    "readonly": true,
    "required": false,
    "type": "related"
},
"name": {
    "default": null,
    "help_text": "Human readable name of the drive",
    "readonly": false,
    "required": true,
    "type": "string"
},
},

```

```

"os": {
  "default": null,
  "help_text": "Operating system of the drive.",
  "readonly": false,
  "required": true,
  "type": "string"
},
"owner": {
  "default": null,
  "help_text": "Owner of the drive",
  "readonly": true,
  "required": false,
  "type": "related"
},
"paid": {
  "default": null,
  "help_text": "Paid or free.",
  "readonly": false,
  "required": true,
  "type": "boolean"
},
"resource_uri": {
  "default": "No default provided.",
  "help_text": "Unicode string data. Ex: \"Hello World\"",
  "readonly": true,
  "required": true,
  "type": "string"
},
"size": {
  "default": null,
  "help_text": "Size of the drive in bytes",
  "readonly": false,
  "required": true,
  "type": "integer"
},
"status": {
  "default": "No default provided.",
  "help_text": "Status of the drive.",
  "readonly": true,
  "required": true,
  "type": "string"
},
"storage_type": {
  "default": "No default provided.",
  "help_text": "Underlying storage",
  "readonly": false,
  "required": true,
  "type": "string"
},
"tags": {
  "default": "No default provided.",
  "help_text": "Many related resources. Can be either a list of URIs or list of individual.",
  "readonly": false,
  "required": false,
  "type": "related"
},
"url": {
  "default": null,

```

```
    "help_text": "Operating system bit architecture the drive.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "uuid": {
    "default": null,
    "help_text": "UUID of the drive",
    "readonly": true,
    "required": true,
    "type": "string"
  },
  "version": {
    "default": null,
    "help_text": "OS version of the drive.",
    "readonly": false,
    "required": false,
    "type": "string"
  }
},
"filtering": {
  "arch": "exact",
  "category": "exact",
  "distribution": "exact",
  "image_type": "exact",
  "name": "exact",
  "name__icontains": "exact",
  "os": "exact",
  "uuid": "exact",
  "version": "exact"
}
}
```



---

## Upload or Download Drive Images

---

### 11.1 Uploading a drive image

**POST** `https://direct.{loc}.cloudsigma.com/api/2.0/drives/upload/`

A drive image can be uploaded by issuing a POST request with the image to `/drive/upload/`. Note that there is a different domain endpoint for uploads `direct.{loc}.cloudsigma.com`.

Currently only raw disk images are supported. The request body should contain the raw byte stream of disk a image and should specify correct content type (`Content-Type: application/octet-stream`) in the request headers. The drive upload API *supports only Basic HTTP authentication*.

It is very important that the `Content-Length` contains the correct size of the data to be sent, because it determines the size of the drive which will be created. Note that if the uploaded image is smaller than the minimum drive size (Check [Capabilities](#)), it will be resized automatically on upload completion.

It is possible to specify the file name in the path, i.e. to upload the image to `/drive/upload/file_name` path, but the file name is ignored. This makes it easier to use tools, such as `curl`, which usually upload to a path ending with the name of the file.

The returned response contains the UUID of the created drive.

Below is an example on how to upload a drive image using `curl`:

```
curl --request POST --user email@example.com:password \  
  --header 'Content-Type: application/octet-stream' \  
  --upload-file /path/to/file \  
  https://direct.zrh.cloudsigma.com/api/2.0/drives/upload/
```

Note that in the above command specifying the `Content-Type` header also sets `curl` to not encode the body of the request and leave it as an octet-stream.

The command prints the UUID of the uploaded image. You may want to save it to a file with an output redirect by appending `> uploaded_drive_uuid` at the end of the command.

By default `curl` does not show upload progress. You may add `-verbose (-v)` option if you use `curl` on the command line to print the progress and speed of upload.

### 11.2 Downloading a drive image

**GET** `https://direct.{loc}.cloudsigma.com/api/2.0/drives/{uuid}/download/`

To download a drive image issue a GET request to `/drives/{uuid}/download/`. Note that there is a different domain endpoint for image download `direct.{loc}.cloudsigma.com`. The download client **should handle HTTP redirects** correctly. The resulting response contains an `Content-Type: application/octet-stream` file. The file name is set to the image UUID in the `Content-Disposition` header.

Below is an example on how to download a drive image using *curl*:

```
curl --location \
  --remote-name --remote-header-name \
  --user email@example.com:password \
  https://direct.zrh.cloudsigma.com/api/2.0/drives/ad64ded1-be81-454a-aa14-d7809cca93eb/download/
```

The `-location` option instructs *curl* to follow redirects. The client is expected to follow HTTP redirects.

The above command uses `-remote-header-name` to save the image into a file named as specified in `Content-Disposition`. The name in the content disposition is set to the drive UUID. It is possible to specify a different output name/path with the `-output (-o)` option. Note that `-remote-header-name` should always be used together with `-remote-name`.

---

## Servers / VMs

---

### 12.1 Hypervisors

Servers have *hypervisor* and *cpu\_type parameters* whose combination must match the one in the capabilities of the cloud. This page deals with generic server operations. There are specifics for each type of hypervisor:

- [kvm](#)
- [solaris\\_kz](#)

The default *hypervisor* is *kvm* to maintain backwards compatibility and the default *cpu\_type* is *amd*. If you specify a different *hypervisor* and no *cpu\_type*, the API will still use *amd*.

### 12.2 Allowed HTTP methods

Method	Description
GET	get / list object/s
POST	create new object/s
PUT	update / modify object/s
DELETE	delete object/s

---

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 12.3 Listing

#### GET /servers/

Gets the list of servers to which the authenticated user has access.

#### Status Codes

- 200 – no error

#### Example request:

```
GET /api/2.0/servers/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  },
  "objects": [
    {
      "name": "test_server_3",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/servers/3ca429cc-b4f4-42a8-aaa8-3a6df700af06/",
      "runtime": null,
      "status": "stopped",
      "uuid": "3ca429cc-b4f4-42a8-aaa8-3a6df700af06"
    },
    {
      "name": "test_server_0",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/servers/f50b672f-a963-4b8a-bf05-809b3ffd9a9f/",
      "runtime": null,
      "status": "stopped",
      "uuid": "f50b672f-a963-4b8a-bf05-809b3ffd9a9f"
    },
    {
      "name": "test_server_1",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/servers/5d5f22ea-68ae-4b83-9b19-7d7cdd2eb888/",
      "runtime": null,
      "status": "stopped",
      "uuid": "5d5f22ea-68ae-4b83-9b19-7d7cdd2eb888"
    },
    {
      "name": "test_server_4",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/servers/8d483469-faeb-4408-899b-a10df6bf3587/",
      "runtime": null,
      "status": "stopped",
      "uuid": "8d483469-faeb-4408-899b-a10df6bf3587"
    },
    {
      "name": "test_server_2",
      "owner": {

```



```

        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/servers/514a790d-9798-4476-93e9-5cecb4b1c6a3/",
    "runtime": null,
    "status": "stopped",
    "uuid": "514a790d-9798-4476-93e9-5cecb4b1c6a3"
}
]
}

```

## 12.4 Detailed listing

### GET /servers/detail/

Gets the detailed list of servers to which the authenticated user has access.

#### Status Codes

- 200 – no error

#### Example request:

```

GET /api/2.0/servers/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  },
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 536870912,
      "meta": {},
      "name": "test_server_2",
      "nics": [],
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",

```

```

        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/83ec9545-b1c9-4430-90e4-91f7774a8e5d/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "83ec9545-b1c9-4430-90e4-91f7774a8e5d",
    "vnc_password": "testserver"
},
{
    "context": true,
    "cpu": 1000,
    "cpu_model": null,
    "cpu_type": "amd",
    "cpus_instead_of_cores": false,
    "drives": [],
    "enable_numa": false,
    "grantees": [],
    "hv_relaxed": false,
    "hv_tsc": false,
    "hypervisor": "kvm",
    "jobs": [],
    "mem": 536870912,
    "meta": {},
    "name": "test_server_0",
    "nics": [],
    "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/e789b2eb-9529-4c34-a878-e7ccce97b94c/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "e789b2eb-9529-4c34-a878-e7ccce97b94c",
    "vnc_password": "testserver"
},
{
    "context": true,
    "cpu": 1000,
    "cpu_model": null,
    "cpu_type": "amd",
    "cpus_instead_of_cores": false,
    "drives": [],
    "enable_numa": false,
    "grantees": [],
    "hv_relaxed": false,
    "hv_tsc": false,
    "hypervisor": "kvm",
    "jobs": [],

```

```

    "mem": 536870912,
    "meta": {},
    "name": "test_server_1",
    "nics": [],
    "owner": {
      "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/ce076c1f-2cad-4e6b-9299-5a5f8e7991e5/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "ce076c1f-2cad-4e6b-9299-5a5f8e7991e5",
    "vnc_password": "testserver"
  },
  {
    "context": true,
    "cpu": 1000,
    "cpu_model": null,
    "cpu_type": "amd",
    "cpus_instead_of_cores": false,
    "drives": [],
    "enable_numa": false,
    "grantees": [],
    "hv_relaxed": false,
    "hv_tsc": false,
    "hypervisor": "kvm",
    "jobs": [],
    "mem": 536870912,
    "meta": {},
    "name": "test_server_4",
    "nics": [],
    "owner": {
      "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/8ffcc303-aa05-4e85-b0c6-80579e19a6b8/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "8ffcc303-aa05-4e85-b0c6-80579e19a6b8",
    "vnc_password": "testserver"
  },
  {
    "context": true,
    "cpu": 1000,
    "cpu_model": null,
    "cpu_type": "amd",
    "cpus_instead_of_cores": false,
    "drives": [],

```

```

        "enable_numa": false,
        "grantees": [],
        "hv_relaxed": false,
        "hv_tsc": false,
        "hypervisor": "kvm",
        "jobs": [],
        "mem": 536870912,
        "meta": {},
        "name": "test_server_3",
        "nics": [],
        "owner": {
            "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
            "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
        },
        "permissions": [],
        "pubkeys": [],
        "requirements": [],
        "resource_uri": "/api/2.0/servers/0faa63b3-dc71-4139-b535-507a6938e5ea/",
        "runtime": null,
        "smp": 1,
        "status": "stopped",
        "tags": [],
        "uuid": "0faa63b3-dc71-4139-b535-507a6938e5ea",
        "vnc_password": "testserver"
    }
}

```

## 12.5 Creating

### POST /servers/

Creates a new virtual server or multiple servers. The minimal amount of information you need to set is as follows

#### Status Codes

- 201 – object created

#### Example request:

```

POST /api/2.0/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "cpu": 1000,
      "mem": 536870912,
      "name": "testServerAcc",
      "vnc_password": "testserver"
    }
  ]
}

```

#### Example response:

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 536870912,
      "meta": {},
      "name": "testServerAcc",
      "nics": [],
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "permissions": [],
      "pubkeys": [],
      "requirements": [],
      "resource_uri": "/api/2.0/servers/d0ae4a09-13d5-4af2-aa12-56935035adef/",
      "runtime": null,
      "smp": 1,
      "status": "stopped",
      "tags": [],
      "uuid": "d0ae4a09-13d5-4af2-aa12-56935035adef",
      "vnc_password": "testserver"
    }
  ]
}

```

## 12.6 Editing

### PUT /servers/{uuid}/

Edits a server. Used also for attaching NIC's and drives to servers. Note that if a server is running, only name, meta, and tags fields can be changed, and all other changes to the definition of a running server will be ignored.

#### Status Codes

- 200 – no error

#### Example request:

```

PUT /api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```
{
  "cpu": 2000,
  "mem": 536870912,
  "name": "test_server_updated",
  "vnc_password": "updated_password"
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 2000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "test_server_updated",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "0dacaaf7-1ba8-451d-b135-8848e76381ee",
  "vnc_password": "updated_password"
}
```

## 12.7 Attach a drive

**PUT /servers/{uuid}/**

Attaching a drive is just an *edit server* operation.

**Status Codes**

- 200 – no error

**Example request:**

```

PUT /api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "cpu": 2000,
  "drives": [
    {
      "boot_order": 1,
      "dev_channel": "0:0",
      "device": "virtio",
      "drive": "756f5728-2123-4381-bc7c-f73dc2a3f55f"
    }
  ],
  "mem": 536870912,
  "name": "test_server_updated",
  "vnc_password": "updated_password"
}

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 2000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [
    {
      "boot_order": 1,
      "dev_channel": "0:0",
      "device": "virtio",
      "drive": {
        "resource_uri": "/api/2.0/drives/756f5728-2123-4381-bc7c-f73dc2a3f55f/",
        "uuid": "756f5728-2123-4381-bc7c-f73dc2a3f55f"
      }
    },
    {
      "runtime": null
    }
  ],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {
    "meta_key2": "value2",
    "meta_key3": "value3"
  },
  "name": "test_server_updated",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  }
}

```

```

    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "0dacaaf7-1ba8-451d-b135-8848e76381ee",
    "vnc_password": "updated_password"
}

```

## 12.8 Metadata

It is possible to add arbitrary key-value data to a server definition. See [Objects' metadata field](#) for more information.

## 12.9 Deleting

### 12.9.1 Single server

**DELETE** `/servers/{uuid}/`

Deletes a single server.

#### Status Codes

- **204** – No content, object deletion started.

**Example request:**

```

DELETE /api/2.0/servers/d0ae4a09-13d5-4af2-aa12-56935035adef/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

```

**Example response:**

```

HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8

```

### 12.9.2 Delete Server together with attached drives (recursive delete)

**DELETE** `/servers/{uuid}/?recurse={recurse_option}`

It is possible to delete a server together with its drives (recursive delete). There are three options: delete all attached drives, delete only disks(non-cdrom drives), or delete only attached cdroms. To recursively delete drives, supply a `recurse` URL parameter with a value as described in the following table:

Recurse option	Effect
<code>all_drives</code>	All attached drives regardless of media type will be deleted
<code>disks</code>	Only attached drives with media type <code>disk</code> will be deleted
<code>cdroms</code>	Only attached drives with media type <code>cdrom</code> will be deleted

**Example request to delete a server with all attached drives:**



A server is created with a cdrom and disk drives:

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [
        {
          "boot_order": null,
          "dev_channel": "0:0",
          "device": "ide",
          "drive": {
            "resource_uri": "/api/2.0/drives/3df825cb-9c1b-470d-acbd-03e1a966c046/",
            "uuid": "3df825cb-9c1b-470d-acbd-03e1a966c046"
          },
          "runtime": null
        },
        {
          "boot_order": 1,
          "dev_channel": "0:0",
          "device": "virtio",
          "drive": {
            "resource_uri": "/api/2.0/drives/52f03c84-0397-494a-962b-2bf7b08e26d3/",
            "uuid": "52f03c84-0397-494a-962b-2bf7b08e26d3"
          },
          "runtime": null
        }
      ],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 268435456,
      "meta": {
        "description": "A full server with description"
      },
      "name": "test_acc_full_server",
      "nics": [
        {
          "boot_order": null,
          "firewall_policy": null,
          "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
          },
          "ip_v6_conf": null,
          "mac": "22:20:d8:4d:24:ca",
          "model": "virtio",
          "runtime": null,
          "vlan": null
        }
      ]
    }
  ]
}
```

```

    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/dc3a65b4-0e6f-4f4e-8e34-02cefb9f9eae/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "dc3a65b4-0e6f-4f4e-8e34-02cefb9f9eae",
  "vnc_password": "tester"
}
]
}

```

The following drives are available in the account:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 4
  },
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "cdrom",
      "meta": {},
      "mounted_on": [],
      "name": "test_drive_2",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/f2af396d-6821-4d8d-87ea-8c967468e220/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 1073741824,
      "snapshots": [],
      "status": "unmounted",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "f2af396d-6821-4d8d-87ea-8c967468e220"
    }
  ]
}

```

```

    },
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {
        "description": "",
        "install_notes": ""
      },
      "mounted_on": [],
      "name": "otom-0-take2",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 12348030976,
      "snapshots": [],
      "status": "unmounted",
      "storage_type": "dssd",
      "tags": [],
      "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
    },
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [
        {
          "resource_uri": "/api/2.0/jobs/e81fae7b-7966-46f6-917f-d366a799b550/",
          "uuid": "e81fae7b-7966-46f6-917f-d366a799b550"
        },
        {
          "resource_uri": "/api/2.0/jobs/3a458646-73ea-4755-a398-953a33e8200d/",
          "uuid": "3a458646-73ea-4755-a398-953a33e8200d"
        },
        {
          "resource_uri": "/api/2.0/jobs/e048129a-7652-4ab8-a9c3-11c419954b93/",
          "uuid": "e048129a-7652-4ab8-a9c3-11c419954b93"
        },
        {
          "resource_uri": "/api/2.0/jobs/ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95/",
          "uuid": "ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95"
        },
        {
          "resource_uri": "/api/2.0/jobs/1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4/",
          "uuid": "1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4"
        }
      ]
    }
  ]
}

```

```

    "resource_uri": "/api/2.0/jobs/e222c128-02bc-4109-ab8c-e8eae2deb84/",
    "uuid": "e222c128-02bc-4109-ab8c-e8eae2deb84"
  },
  {
    "resource_uri": "/api/2.0/jobs/d73a977d-13e2-4af7-bb46-9f90a3cdb709/",
    "uuid": "d73a977d-13e2-4af7-bb46-9f90a3cdb709"
  },
  {
    "resource_uri": "/api/2.0/jobs/9751e954-6272-4170-ace4-749234beda41/",
    "uuid": "9751e954-6272-4170-ace4-749234beda41"
  },
  {
    "resource_uri": "/api/2.0/jobs/8d1914a9-ef59-4ca5-b0b9-94e5100e01f1/",
    "uuid": "8d1914a9-ef59-4ca5-b0b9-94e5100e01f1"
  },
  {
    "resource_uri": "/api/2.0/jobs/8882034b-8149-4381-8e3b-3d63df48a089/",
    "uuid": "8882034b-8149-4381-8e3b-3d63df48a089"
  },
  {
    "resource_uri": "/api/2.0/jobs/8961f56a-009e-4d70-b39a-363c86e2797f/",
    "uuid": "8961f56a-009e-4d70-b39a-363c86e2797f"
  },
  {
    "resource_uri": "/api/2.0/jobs/b18335fd-5c38-43a0-a6ad-5e4150609317/",
    "uuid": "b18335fd-5c38-43a0-a6ad-5e4150609317"
  },
  {
    "resource_uri": "/api/2.0/jobs/15e31b74-49bd-4d5f-b300-b1104dcebd2/",
    "uuid": "15e31b74-49bd-4d5f-b300-b1104dcebd2"
  },
  {
    "resource_uri": "/api/2.0/jobs/ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a/",
    "uuid": "ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a"
  },
  {
    "resource_uri": "/api/2.0/jobs/0d8ae7db-72e3-4a9c-bc5e-20b767fefb46/",
    "uuid": "0d8ae7db-72e3-4a9c-bc5e-20b767fefb46"
  },
  {
    "resource_uri": "/api/2.0/jobs/f9a362a3-1c0c-4672-857d-78533e8745a4/",
    "uuid": "f9a362a3-1c0c-4672-857d-78533e8745a4"
  },
  {
    "resource_uri": "/api/2.0/jobs/eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73/",
    "uuid": "eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73"
  },
  {
    "resource_uri": "/api/2.0/jobs/5c5e4b51-21b7-446e-8dc5-d2adba7a8b72/",
    "uuid": "5c5e4b51-21b7-446e-8dc5-d2adba7a8b72"
  },
  {
    "resource_uri": "/api/2.0/jobs/b65998cb-a061-4526-b9b8-8939e0caa726/",
    "uuid": "b65998cb-a061-4526-b9b8-8939e0caa726"
  },
  {
    "resource_uri": "/api/2.0/jobs/2e11ce11-2016-47cd-a6cd-081961337692/",
    "uuid": "2e11ce11-2016-47cd-a6cd-081961337692"
  }

```

```
},
{
  "resource_uri": "/api/2.0/jobs/e05d7f4d-2982-47ac-aa2d-ce0cc72c2292/",
  "uuid": "e05d7f4d-2982-47ac-aa2d-ce0cc72c2292"
},
{
  "resource_uri": "/api/2.0/jobs/a755c06f-0345-4233-b65b-55823e0224e7/",
  "uuid": "a755c06f-0345-4233-b65b-55823e0224e7"
},
{
  "resource_uri": "/api/2.0/jobs/a4d98424-b23e-40b9-af71-aa1c772100eb/",
  "uuid": "a4d98424-b23e-40b9-af71-aa1c772100eb"
},
{
  "resource_uri": "/api/2.0/jobs/61dd578a-7f91-4259-ac18-3c95faab172b/",
  "uuid": "61dd578a-7f91-4259-ac18-3c95faab172b"
},
{
  "resource_uri": "/api/2.0/jobs/86d899d3-940c-401e-bc26-d8394089f993/",
  "uuid": "86d899d3-940c-401e-bc26-d8394089f993"
},
{
  "resource_uri": "/api/2.0/jobs/ad920c1d-4efe-4ed4-87fd-d9d9da718667/",
  "uuid": "ad920c1d-4efe-4ed4-87fd-d9d9da718667"
},
{
  "resource_uri": "/api/2.0/jobs/4d043d40-ebc4-4501-8386-9751ac19f9b9/",
  "uuid": "4d043d40-ebc4-4501-8386-9751ac19f9b9"
},
{
  "resource_uri": "/api/2.0/jobs/9c05f3a1-13a5-45af-8faf-6bb47a53e2d8/",
  "uuid": "9c05f3a1-13a5-45af-8faf-6bb47a53e2d8"
},
{
  "resource_uri": "/api/2.0/jobs/c7e7fe31-179b-4b38-a5fa-e3f399f683f2/",
  "uuid": "c7e7fe31-179b-4b38-a5fa-e3f399f683f2"
},
{
  "resource_uri": "/api/2.0/jobs/3c31b43f-55d8-426a-8124-02c71a0b3b4e/",
  "uuid": "3c31b43f-55d8-426a-8124-02c71a0b3b4e"
},
{
  "resource_uri": "/api/2.0/jobs/08312509-d90a-44e9-9f07-280d2e2935ae/",
  "uuid": "08312509-d90a-44e9-9f07-280d2e2935ae"
},
{
  "resource_uri": "/api/2.0/jobs/1cd69a16-5aee-45a9-99ec-698a1266c514/",
  "uuid": "1cd69a16-5aee-45a9-99ec-698a1266c514"
},
{
  "resource_uri": "/api/2.0/jobs/f1f2db65-5681-4404-888a-46aa97df6d9a/",
  "uuid": "f1f2db65-5681-4404-888a-46aa97df6d9a"
},
{
  "resource_uri": "/api/2.0/jobs/11f45314-d3c1-469c-aaa0-d30d3574a62b/",
  "uuid": "11f45314-d3c1-469c-aaa0-d30d3574a62b"
},
{
```

```

    "resource_uri": "/api/2.0/jobs/9ac68490-9e85-4b41-a76d-754df657dbd1/",
    "uuid": "9ac68490-9e85-4b41-a76d-754df657dbd1"
  },
  {
    "resource_uri": "/api/2.0/jobs/93110b55-ad01-46e7-a71c-c10365e746b4/",
    "uuid": "93110b55-ad01-46e7-a71c-c10365e746b4"
  },
  {
    "resource_uri": "/api/2.0/jobs/7e6036be-b47b-4b7a-86c8-50e9ed585404/",
    "uuid": "7e6036be-b47b-4b7a-86c8-50e9ed585404"
  },
  {
    "resource_uri": "/api/2.0/jobs/e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5/",
    "uuid": "e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5"
  },
  {
    "resource_uri": "/api/2.0/jobs/0b1280ae-b715-4dbc-a902-86c25603474d/",
    "uuid": "0b1280ae-b715-4dbc-a902-86c25603474d"
  },
  {
    "resource_uri": "/api/2.0/jobs/401d7916-359a-4cca-8abd-f6f832c97983/",
    "uuid": "401d7916-359a-4cca-8abd-f6f832c97983"
  },
  {
    "resource_uri": "/api/2.0/jobs/ad1d412b-c51a-4cca-8ff9-81f5976471dd/",
    "uuid": "ad1d412b-c51a-4cca-8ff9-81f5976471dd"
  },
  {
    "resource_uri": "/api/2.0/jobs/bf3ff2b7-52b6-4ac8-921a-7d44b80711bb/",
    "uuid": "bf3ff2b7-52b6-4ac8-921a-7d44b80711bb"
  },
  {
    "resource_uri": "/api/2.0/jobs/9ce2ce9d-587c-46f6-b3bd-991ebf26b121/",
    "uuid": "9ce2ce9d-587c-46f6-b3bd-991ebf26b121"
  },
  {
    "resource_uri": "/api/2.0/jobs/79aed1c7-570a-4191-897a-337476ebc074/",
    "uuid": "79aed1c7-570a-4191-897a-337476ebc074"
  },
  {
    "resource_uri": "/api/2.0/jobs/1d630913-cef6-4e60-a472-125ded470400/",
    "uuid": "1d630913-cef6-4e60-a472-125ded470400"
  },
  {
    "resource_uri": "/api/2.0/jobs/51f61346-6d9b-48b7-8cf5-4f70acc1dd97/",
    "uuid": "51f61346-6d9b-48b7-8cf5-4f70acc1dd97"
  },
  {
    "resource_uri": "/api/2.0/jobs/ec58e294-0906-495f-86a2-4dd423fdd7b6/",
    "uuid": "ec58e294-0906-495f-86a2-4dd423fdd7b6"
  },
  {
    "resource_uri": "/api/2.0/jobs/ce301022-90ef-4b7d-819a-5b6172b942f2/",
    "uuid": "ce301022-90ef-4b7d-819a-5b6172b942f2"
  },
  {
    "resource_uri": "/api/2.0/jobs/09b4a45d-1b79-4116-bf01-96331f939d07/",
    "uuid": "09b4a45d-1b79-4116-bf01-96331f939d07"
  }

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},
{
  "resource_uri": "/api/2.0/jobs/1287eee1-8b2c-443e-b177-0235a76a3ab3/",
  "uuid": "1287eee1-8b2c-443e-b177-0235a76a3ab3"
},
{
  "resource_uri": "/api/2.0/jobs/7b71312d-fb1c-43c6-962b-6fd15e637ad9/",
  "uuid": "7b71312d-fb1c-43c6-962b-6fd15e637ad9"
},
{
  "resource_uri": "/api/2.0/jobs/e4e5b16d-abca-41e0-8755-75fbb0d434c6/",
  "uuid": "e4e5b16d-abca-41e0-8755-75fbb0d434c6"
},
{
  "resource_uri": "/api/2.0/jobs/dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a/",
  "uuid": "dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a"
},
{
  "resource_uri": "/api/2.0/jobs/c61d1361-633f-4304-b80b-aff64785ac91/",
  "uuid": "c61d1361-633f-4304-b80b-aff64785ac91"
},
{
  "resource_uri": "/api/2.0/jobs/5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52/",
  "uuid": "5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52"
},
{
  "resource_uri": "/api/2.0/jobs/a2021f29-9f12-4443-87b3-0b2fdb9a76b5/",
  "uuid": "a2021f29-9f12-4443-87b3-0b2fdb9a76b5"
},
{
  "resource_uri": "/api/2.0/jobs/38def946-1616-4215-b216-16035a1fb738/",
  "uuid": "38def946-1616-4215-b216-16035a1fb738"
},
{
  "resource_uri": "/api/2.0/jobs/02255a54-8b9f-43ec-b751-89a4afc18a90/",
  "uuid": "02255a54-8b9f-43ec-b751-89a4afc18a90"
},
{
  "resource_uri": "/api/2.0/jobs/ec61caa4-2baf-45ec-8f59-61e5716395ca/",
  "uuid": "ec61caa4-2baf-45ec-8f59-61e5716395ca"
},
{
  "resource_uri": "/api/2.0/jobs/ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f/",
  "uuid": "ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f"
},
{
  "resource_uri": "/api/2.0/jobs/1fbbcfcf-5027-4100-a93b-83ff73ff80cb/",
  "uuid": "1fbbcfcf-5027-4100-a93b-83ff73ff80cb"
},
{
  "resource_uri": "/api/2.0/jobs/f12e8cd7-d76e-4b8a-b692-f4c22266e792/",
  "uuid": "f12e8cd7-d76e-4b8a-b692-f4c22266e792"
},
{
  "resource_uri": "/api/2.0/jobs/728f1e12-2701-4618-alec-ff1a2cac63d0/",
  "uuid": "728f1e12-2701-4618-alec-ff1a2cac63d0"
},
{
```

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"resource_uri": "/api/2.0/jobs/43f28ca1-e523-4481-966b-1c85fbb673fa/",
"uuid": "43f28ca1-e523-4481-966b-1c85fbb673fa"
},
{
"resource_uri": "/api/2.0/jobs/9a1cc534-e426-4b68-b001-75f37119b353/",
"uuid": "9a1cc534-e426-4b68-b001-75f37119b353"
},
{
"resource_uri": "/api/2.0/jobs/3d18c709-1601-4a7f-af9d-530ab86ef825/",
"uuid": "3d18c709-1601-4a7f-af9d-530ab86ef825"
},
{
"resource_uri": "/api/2.0/jobs/a93b3d0d-e294-4f02-bc44-3cfd36d24ddb/",
"uuid": "a93b3d0d-e294-4f02-bc44-3cfd36d24ddb"
},
{
"resource_uri": "/api/2.0/jobs/f47b65e9-14ca-40f6-9b2a-60c27091a75f/",
"uuid": "f47b65e9-14ca-40f6-9b2a-60c27091a75f"
},
{
"resource_uri": "/api/2.0/jobs/69713c13-b1bb-4f84-972c-eb7adf55a051/",
"uuid": "69713c13-b1bb-4f84-972c-eb7adf55a051"
},
{
"resource_uri": "/api/2.0/jobs/8d650bc8-80f9-4272-b190-11cd4b086d91/",
"uuid": "8d650bc8-80f9-4272-b190-11cd4b086d91"
},
{
"resource_uri": "/api/2.0/jobs/12684b6c-fc57-4edb-916f-efe78a0e3f51/",
"uuid": "12684b6c-fc57-4edb-916f-efe78a0e3f51"
},
{
"resource_uri": "/api/2.0/jobs/564c53a1-69c0-45de-8836-f52b49baff18/",
"uuid": "564c53a1-69c0-45de-8836-f52b49baff18"
},
{
"resource_uri": "/api/2.0/jobs/26b24ab4-a89b-44d6-9194-e7324faa8922/",
"uuid": "26b24ab4-a89b-44d6-9194-e7324faa8922"
},
{
"resource_uri": "/api/2.0/jobs/e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f/",
"uuid": "e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f"
},
{
"resource_uri": "/api/2.0/jobs/52a1d9da-ee39-4973-b047-9233ae4e09ed/",
"uuid": "52a1d9da-ee39-4973-b047-9233ae4e09ed"
},
{
"resource_uri": "/api/2.0/jobs/7c7d954c-58d9-49cf-9d9b-645adeb072de/",
"uuid": "7c7d954c-58d9-49cf-9d9b-645adeb072de"
},
{
"resource_uri": "/api/2.0/jobs/6043d2cf-d1d3-4221-bc3a-6aa3c782e68d/",
"uuid": "6043d2cf-d1d3-4221-bc3a-6aa3c782e68d"
},
{
"resource_uri": "/api/2.0/jobs/c718ce2d-0ba6-4964-be73-d35282a1024d/",
"uuid": "c718ce2d-0ba6-4964-be73-d35282a1024d"
}

```



```
},
{
  "resource_uri": "/api/2.0/jobs/3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090/",
  "uuid": "3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090"
},
{
  "resource_uri": "/api/2.0/jobs/3e849dc8-f88e-4aa9-a7bb-5c245c892098/",
  "uuid": "3e849dc8-f88e-4aa9-a7bb-5c245c892098"
},
{
  "resource_uri": "/api/2.0/jobs/fbc30ede-7ec5-4e11-8c51-6b729875bc41/",
  "uuid": "fbc30ede-7ec5-4e11-8c51-6b729875bc41"
},
{
  "resource_uri": "/api/2.0/jobs/243e1c08-3b5f-4a87-acee-ff6aefb1dcdb/",
  "uuid": "243e1c08-3b5f-4a87-acee-ff6aefb1dcdb"
},
{
  "resource_uri": "/api/2.0/jobs/592437ff-0cb0-4f62-a62c-ac964f5e6d45/",
  "uuid": "592437ff-0cb0-4f62-a62c-ac964f5e6d45"
},
{
  "resource_uri": "/api/2.0/jobs/34502453-dba1-4530-bc75-7aadddbd6376/",
  "uuid": "34502453-dba1-4530-bc75-7aadddbd6376"
},
{
  "resource_uri": "/api/2.0/jobs/3246e6e6-ea98-47cf-8e1c-174beec2b466/",
  "uuid": "3246e6e6-ea98-47cf-8e1c-174beec2b466"
},
{
  "resource_uri": "/api/2.0/jobs/a7269f26-a630-4289-9195-322807e5d626/",
  "uuid": "a7269f26-a630-4289-9195-322807e5d626"
},
{
  "resource_uri": "/api/2.0/jobs/9050f1d1-9ac3-4cfb-bd30-0d4b169cc873/",
  "uuid": "9050f1d1-9ac3-4cfb-bd30-0d4b169cc873"
},
{
  "resource_uri": "/api/2.0/jobs/0649e5fe-1a17-4b16-8473-fa847cabb603/",
  "uuid": "0649e5fe-1a17-4b16-8473-fa847cabb603"
},
{
  "resource_uri": "/api/2.0/jobs/db26fbfb-a615-4eb4-a631-9ba85140dc3b/",
  "uuid": "db26fbfb-a615-4eb4-a631-9ba85140dc3b"
},
{
  "resource_uri": "/api/2.0/jobs/4eb78262-9f34-4ed8-81de-00b9ac11bfd8/",
  "uuid": "4eb78262-9f34-4ed8-81de-00b9ac11bfd8"
},
{
  "resource_uri": "/api/2.0/jobs/2a3ac055-0133-4b6e-a999-1c9c197bd55c/",
  "uuid": "2a3ac055-0133-4b6e-a999-1c9c197bd55c"
},
{
  "resource_uri": "/api/2.0/jobs/16a02c3f-f5eb-48b6-a8da-8185a39f17a2/",
  "uuid": "16a02c3f-f5eb-48b6-a8da-8185a39f17a2"
},
{
```

```

"resource_uri": "/api/2.0/jobs/85ecfbc9-9857-49e4-909a-2c7cdcbcladc/",
"uuid": "85ecfbc9-9857-49e4-909a-2c7cdcbcladc"
},
{
"resource_uri": "/api/2.0/jobs/18dlb2ae-3f9b-4cae-b5f4-6086f868d5e5/",
"uuid": "18dlb2ae-3f9b-4cae-b5f4-6086f868d5e5"
},
{
"resource_uri": "/api/2.0/jobs/7879e9e0-de4b-4b85-b69f-b416243527d9/",
"uuid": "7879e9e0-de4b-4b85-b69f-b416243527d9"
},
{
"resource_uri": "/api/2.0/jobs/13bfc35b-6374-480d-aed7-d06e9b69f52b/",
"uuid": "13bfc35b-6374-480d-aed7-d06e9b69f52b"
},
{
"resource_uri": "/api/2.0/jobs/fcc07794-94e0-4f6b-a9f0-32c52098b7f2/",
"uuid": "fcc07794-94e0-4f6b-a9f0-32c52098b7f2"
},
{
"resource_uri": "/api/2.0/jobs/bce778e4-5003-4cb0-b60b-e86717e11584/",
"uuid": "bce778e4-5003-4cb0-b60b-e86717e11584"
},
{
"resource_uri": "/api/2.0/jobs/3d7cf702-917a-4864-9a22-b8b1c0ddd0da/",
"uuid": "3d7cf702-917a-4864-9a22-b8b1c0ddd0da"
},
{
"resource_uri": "/api/2.0/jobs/002b43f6-f12e-4b4a-9566-3affc49cbff5/",
"uuid": "002b43f6-f12e-4b4a-9566-3affc49cbff5"
},
{
"resource_uri": "/api/2.0/jobs/f6f9423d-e239-48bf-b3e1-7eef57f41df5/",
"uuid": "f6f9423d-e239-48bf-b3e1-7eef57f41df5"
},
{
"resource_uri": "/api/2.0/jobs/80498624-4b6a-4c23-8db3-0402b8bc61e0/",
"uuid": "80498624-4b6a-4c23-8db3-0402b8bc61e0"
},
{
"resource_uri": "/api/2.0/jobs/57cd32c3-8969-4286-b4f3-d8e4132648db/",
"uuid": "57cd32c3-8969-4286-b4f3-d8e4132648db"
},
{
"resource_uri": "/api/2.0/jobs/e4ff1f15-d0ee-4717-89a1-2c0ad024391c/",
"uuid": "e4ff1f15-d0ee-4717-89a1-2c0ad024391c"
},
{
"resource_uri": "/api/2.0/jobs/a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2/",
"uuid": "a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2"
},
{
"resource_uri": "/api/2.0/jobs/aa4a37ed-a657-4544-bcea-35c8b87f7382/",
"uuid": "aa4a37ed-a657-4544-bcea-35c8b87f7382"
},
{
"resource_uri": "/api/2.0/jobs/9ecbc462-7fae-4b23-aabb-5a6d05c8c106/",
"uuid": "9ecbc462-7fae-4b23-aabb-5a6d05c8c106"
}

```

```

    },
    {
      "resource_uri": "/api/2.0/jobs/4b97a416-bef0-4d9c-ab19-715fb228f7f6/",
      "uuid": "4b97a416-bef0-4d9c-ab19-715fb228f7f6"
    },
    {
      "resource_uri": "/api/2.0/jobs/ff128f6d-c51b-4d01-8932-14be8748f9dd/",
      "uuid": "ff128f6d-c51b-4d01-8932-14be8748f9dd"
    },
    {
      "resource_uri": "/api/2.0/jobs/bd4b2465-09b7-4e12-8cfa-7d8779281ee7/",
      "uuid": "bd4b2465-09b7-4e12-8cfa-7d8779281ee7"
    },
    {
      "resource_uri": "/api/2.0/jobs/03ecdbd7-9799-48c8-aa71-06d072d04b3f/",
      "uuid": "03ecdbd7-9799-48c8-aa71-06d072d04b3f"
    },
    {
      "resource_uri": "/api/2.0/jobs/871aa701-cda8-47f6-b10b-df6d33f87cc9/",
      "uuid": "871aa701-cda8-47f6-b10b-df6d33f87cc9"
    },
    {
      "resource_uri": "/api/2.0/jobs/23f8bdc6-5ab4-477c-8f7c-7bdb5952b483/",
      "uuid": "23f8bdc6-5ab4-477c-8f7c-7bdb5952b483"
    },
    {
      "resource_uri": "/api/2.0/jobs/10f675b4-aff6-4158-98ab-16a285f8705e/",
      "uuid": "10f675b4-aff6-4158-98ab-16a285f8705e"
    },
    {
      "resource_uri": "/api/2.0/jobs/bcc7eddf-cecd-455c-86e9-64425b26b39e/",
      "uuid": "bcc7eddf-cecd-455c-86e9-64425b26b39e"
    },
    {
      "resource_uri": "/api/2.0/jobs/16589be9-9bfb-4991-b75a-268a0f5c629d/",
      "uuid": "16589be9-9bfb-4991-b75a-268a0f5c629d"
    },
    {
      "resource_uri": "/api/2.0/jobs/ad6b508e-882f-4554-962e-10df50a46e51/",
      "uuid": "ad6b508e-882f-4554-962e-10df50a46e51"
    },
    {
      "resource_uri": "/api/2.0/jobs/ebd647a3-6ad1-4ae9-8bfb-b618072f0545/",
      "uuid": "ebd647a3-6ad1-4ae9-8bfb-b618072f0545"
    },
    {
      "resource_uri": "/api/2.0/jobs/799c758f-2e68-44ab-9808-04271937331b/",
      "uuid": "799c758f-2e68-44ab-9808-04271937331b"
    }
  ],
  "licenses": [],
  "media": "disk",
  "meta": {
    "description": "",
    "install_notes": ""
  },
  "mounted_on": [],
  "name": "atom-sol",

```

```

    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 12348030976,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
  },
  {
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_1",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/f1888988-7754-4d89-a004-693fbf62e7a6/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "f1888988-7754-4d89-a004-693fbf62e7a6"
  }
]
}

```

The server is recursively deleted with all drives:

```

DELETE /api/2.0/servers/dc3a65b4-0e6f-4f4e-8e34-02cef9b9f9eae/?recurse=all_drives HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

```

After DELETE of the server the, drives attached to the server are deleted:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

```

```

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "affinities": [],
      "allow_multimount": false,
      "grantees": [],
      "jobs": [],
      "licenses": [],
      "media": "disk",
      "meta": {
        "description": "",
        "install_notes": ""
      },
      "mounted_on": [],
      "name": "otom-0-take2",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
      "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
      },
      "size": 12348030976,
      "snapshots": [],
      "status": "unmounted",
      "storage_type": "dssd",
      "tags": [],
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    {
      "resource_uri": "/api/2.0/jobs/13bfc35b-6374-480d-aed7-d06e9b69f52b/",
      "uuid": "13bfc35b-6374-480d-aed7-d06e9b69f52b"
    },
    {
      "resource_uri": "/api/2.0/jobs/fcc07794-94e0-4f6b-a9f0-32c52098b7f2/",
      "uuid": "fcc07794-94e0-4f6b-a9f0-32c52098b7f2"
    },
    {
      "resource_uri": "/api/2.0/jobs/bce778e4-5003-4cb0-b60b-e86717e11584/",
      "uuid": "bce778e4-5003-4cb0-b60b-e86717e11584"
    },
    {
      "resource_uri": "/api/2.0/jobs/3d7cf702-917a-4864-9a22-b8b1c0ddd0da/",
      "uuid": "3d7cf702-917a-4864-9a22-b8b1c0ddd0da"
    },
    {
      "resource_uri": "/api/2.0/jobs/002b43f6-f12e-4b4a-9566-3affc49cbff5/",
      "uuid": "002b43f6-f12e-4b4a-9566-3affc49cbff5"
    },
    {
      "resource_uri": "/api/2.0/jobs/f6f9423d-e239-48bf-b3e1-7eef57f41df5/",
      "uuid": "f6f9423d-e239-48bf-b3e1-7eef57f41df5"
    },
    {
      "resource_uri": "/api/2.0/jobs/80498624-4b6a-4c23-8db3-0402b8bc61e0/",
      "uuid": "80498624-4b6a-4c23-8db3-0402b8bc61e0"
    },
    {
      "resource_uri": "/api/2.0/jobs/57cd32c3-8969-4286-b4f3-d8e4132648db/",
      "uuid": "57cd32c3-8969-4286-b4f3-d8e4132648db"
    },
    {
      "resource_uri": "/api/2.0/jobs/e4ff1f15-d0ee-4717-89a1-2c0ad024391c/",
      "uuid": "e4ff1f15-d0ee-4717-89a1-2c0ad024391c"
    },
    {
      "resource_uri": "/api/2.0/jobs/a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2/",
      "uuid": "a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2"
    },
    {

```

```

    "resource_uri": "/api/2.0/jobs/aa4a37ed-a657-4544-bcea-35c8b87f7382/",
    "uuid": "aa4a37ed-a657-4544-bcea-35c8b87f7382"
  },
  {
    "resource_uri": "/api/2.0/jobs/9ecbc462-7fae-4b23-aabb-5a6d05c8c106/",
    "uuid": "9ecbc462-7fae-4b23-aabb-5a6d05c8c106"
  },
  {
    "resource_uri": "/api/2.0/jobs/4b97a416-bef0-4d9c-ab19-715fb228f7f6/",
    "uuid": "4b97a416-bef0-4d9c-ab19-715fb228f7f6"
  },
  {
    "resource_uri": "/api/2.0/jobs/ff128f6d-c51b-4d01-8932-14be8748f9dd/",
    "uuid": "ff128f6d-c51b-4d01-8932-14be8748f9dd"
  },
  {
    "resource_uri": "/api/2.0/jobs/bd4b2465-09b7-4e12-8cfa-7d8779281ee7/",
    "uuid": "bd4b2465-09b7-4e12-8cfa-7d8779281ee7"
  },
  {
    "resource_uri": "/api/2.0/jobs/03ecdbd7-9799-48c8-aa71-06d072d04b3f/",
    "uuid": "03ecdbd7-9799-48c8-aa71-06d072d04b3f"
  },
  {
    "resource_uri": "/api/2.0/jobs/871aa701-cda8-47f6-b10b-df6d33f87cc9/",
    "uuid": "871aa701-cda8-47f6-b10b-df6d33f87cc9"
  },
  {
    "resource_uri": "/api/2.0/jobs/23f8bdc6-5ab4-477c-8f7c-7bdb5952b483/",
    "uuid": "23f8bdc6-5ab4-477c-8f7c-7bdb5952b483"
  },
  {
    "resource_uri": "/api/2.0/jobs/10f675b4-aff6-4158-98ab-16a285f8705e/",
    "uuid": "10f675b4-aff6-4158-98ab-16a285f8705e"
  },
  {
    "resource_uri": "/api/2.0/jobs/bcc7eddf-cecd-455c-86e9-64425b26b39e/",
    "uuid": "bcc7eddf-cecd-455c-86e9-64425b26b39e"
  },
  {
    "resource_uri": "/api/2.0/jobs/16589be9-9bfb-4991-b75a-268a0f5c629d/",
    "uuid": "16589be9-9bfb-4991-b75a-268a0f5c629d"
  },
  {
    "resource_uri": "/api/2.0/jobs/ad6b508e-882f-4554-962e-10df50a46e51/",
    "uuid": "ad6b508e-882f-4554-962e-10df50a46e51"
  },
  {
    "resource_uri": "/api/2.0/jobs/ebd647a3-6ad1-4ae9-8bfb-b618072f0545/",
    "uuid": "ebd647a3-6ad1-4ae9-8bfb-b618072f0545"
  },
  {
    "resource_uri": "/api/2.0/jobs/799c758f-2e68-44ab-9808-04271937331b/",
    "uuid": "799c758f-2e68-44ab-9808-04271937331b"
  }
],
"licenses": [],
"media": "disk",

```

```

    "meta": {
      "description": "",
      "install_notes": ""
    },
    "mounted_on": [],
    "name": "atom-sol",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 12348030976,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
  }
]
}

```

#### Example request to delete a server with attached disk drives and leave CDROMs:

A server is created with a cdrom and disk drives:

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [
        {
          "boot_order": null,
          "dev_channel": "0:0",
          "device": "ide",
          "drive": {
            "resource_uri": "/api/2.0/drives/3df825cb-9c1b-470d-acbd-03e1a966c046/",
            "uuid": "3df825cb-9c1b-470d-acbd-03e1a966c046"
          }
        },
        {
          "boot_order": 1,
          "dev_channel": "0:0",
          "device": "virtio",
          "drive": {
            "resource_uri": "/api/2.0/drives/52f03c84-0397-494a-962b-2bf7b08e26d3/",

```

```

        "uuid": "52f03c84-0397-494a-962b-2bf7b08e26d3"
    },
    "runtime": null
}
],
"enable_numa": false,
"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 268435456,
"meta": {
    "description": "A full server with description"
},
"name": "test_acc_full_server",
"nics": [
    {
        "boot_order": null,
        "firewall_policy": null,
        "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
        },
        "ip_v6_conf": null,
        "mac": "22:20:d8:4d:24:ca",
        "model": "virtio",
        "runtime": null,
        "vlan": null
    }
],
"owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/dc3a65b4-0e6f-4f4e-8e34-02cefb9f9eae/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "dc3a65b4-0e6f-4f4e-8e34-02cefb9f9eae",
"vnc_password": "tester"
}
]
}

```

The following drives are available in the account:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 4
  }
}

```

```

},
"objects": [
  {
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "cdrom",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_2",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/cf0af312-aeeb-4f3a-bf00-426d13126edf/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "cf0af312-aeeb-4f3a-bf00-426d13126edf"
  },
  {
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {
      "description": "",
      "install_notes": ""
    },
    "mounted_on": [],
    "name": "otom-0-take2",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 12348030976,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
  }
]

```



```

    "tags": [],
    "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
  },
  {
    "affinities": [],
    "allow_multimount": false,
    "grantees": [],
    "jobs": [
      {
        "resource_uri": "/api/2.0/jobs/e81fae7b-7966-46f6-917f-d366a799b550/",
        "uuid": "e81fae7b-7966-46f6-917f-d366a799b550"
      },
      {
        "resource_uri": "/api/2.0/jobs/3a458646-73ea-4755-a398-953a33e8200d/",
        "uuid": "3a458646-73ea-4755-a398-953a33e8200d"
      },
      {
        "resource_uri": "/api/2.0/jobs/e048129a-7652-4ab8-a9c3-11c419954b93/",
        "uuid": "e048129a-7652-4ab8-a9c3-11c419954b93"
      },
      {
        "resource_uri": "/api/2.0/jobs/ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95/",
        "uuid": "ea3cc85a-3ab1-45dd-bea5-60ab6eda7d95"
      },
      {
        "resource_uri": "/api/2.0/jobs/1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4/",
        "uuid": "1c3b2c65-84c1-4509-b4cf-c6bb40aa67f4"
      },
      {
        "resource_uri": "/api/2.0/jobs/e222c128-02bc-4109-ab8c-e8eaec2deb84/",
        "uuid": "e222c128-02bc-4109-ab8c-e8eaec2deb84"
      },
      {
        "resource_uri": "/api/2.0/jobs/d73a977d-13e2-4af7-bb46-9f90a3cdb709/",
        "uuid": "d73a977d-13e2-4af7-bb46-9f90a3cdb709"
      },
      {
        "resource_uri": "/api/2.0/jobs/9751e954-6272-4170-ace4-749234beda41/",
        "uuid": "9751e954-6272-4170-ace4-749234beda41"
      },
      {
        "resource_uri": "/api/2.0/jobs/8d1914a9-ef59-4ca5-b0b9-94e5100e01f1/",
        "uuid": "8d1914a9-ef59-4ca5-b0b9-94e5100e01f1"
      },
      {
        "resource_uri": "/api/2.0/jobs/8882034b-8149-4381-8e3b-3d63df48a089/",
        "uuid": "8882034b-8149-4381-8e3b-3d63df48a089"
      },
      {
        "resource_uri": "/api/2.0/jobs/8961f56a-009e-4d70-b39a-363c86e2797f/",
        "uuid": "8961f56a-009e-4d70-b39a-363c86e2797f"
      },
      {
        "resource_uri": "/api/2.0/jobs/b18335fd-5c38-43a0-a6ad-5e4150609317/",
        "uuid": "b18335fd-5c38-43a0-a6ad-5e4150609317"
      },
      {
        "resource_uri": "/api/2.0/jobs/15e31b74-49bd-4d5f-b300-b1104dcebd2/",

```

```
    "uuid": "15e31b74-49bd-4d5f-b300-b1104dcebda2"
  },
  {
    "resource_uri": "/api/2.0/jobs/ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a/",
    "uuid": "ca481dd7-f6ee-48aa-b8fe-7d2ba14da03a"
  },
  {
    "resource_uri": "/api/2.0/jobs/0d8ae7db-72e3-4a9c-bc5e-20b767fefb46/",
    "uuid": "0d8ae7db-72e3-4a9c-bc5e-20b767fefb46"
  },
  {
    "resource_uri": "/api/2.0/jobs/f9a362a3-1c0c-4672-857d-78533e8745a4/",
    "uuid": "f9a362a3-1c0c-4672-857d-78533e8745a4"
  },
  {
    "resource_uri": "/api/2.0/jobs/eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73/",
    "uuid": "eeaf59bb-a3b4-4f07-9a5e-fac08a51bb73"
  },
  {
    "resource_uri": "/api/2.0/jobs/5c5e4b51-21b7-446e-8dc5-d2adba7a8b72/",
    "uuid": "5c5e4b51-21b7-446e-8dc5-d2adba7a8b72"
  },
  {
    "resource_uri": "/api/2.0/jobs/b65998cb-a061-4526-b9b8-8939e0caa726/",
    "uuid": "b65998cb-a061-4526-b9b8-8939e0caa726"
  },
  {
    "resource_uri": "/api/2.0/jobs/2e11ce11-2016-47cd-a6cd-081961337692/",
    "uuid": "2e11ce11-2016-47cd-a6cd-081961337692"
  },
  {
    "resource_uri": "/api/2.0/jobs/e05d7f4d-2982-47ac-aa2d-ce0cc72c2292/",
    "uuid": "e05d7f4d-2982-47ac-aa2d-ce0cc72c2292"
  },
  {
    "resource_uri": "/api/2.0/jobs/a755c06f-0345-4233-b65b-55823e0224e7/",
    "uuid": "a755c06f-0345-4233-b65b-55823e0224e7"
  },
  {
    "resource_uri": "/api/2.0/jobs/a4d98424-b23e-40b9-af71-aa1c772100eb/",
    "uuid": "a4d98424-b23e-40b9-af71-aa1c772100eb"
  },
  {
    "resource_uri": "/api/2.0/jobs/61dd578a-7f91-4259-ac18-3c95faab172b/",
    "uuid": "61dd578a-7f91-4259-ac18-3c95faab172b"
  },
  {
    "resource_uri": "/api/2.0/jobs/86d899d3-940c-401e-bc26-d8394089f993/",
    "uuid": "86d899d3-940c-401e-bc26-d8394089f993"
  },
  {
    "resource_uri": "/api/2.0/jobs/ad920c1d-4efe-4ed4-87fd-d9d9da718667/",
    "uuid": "ad920c1d-4efe-4ed4-87fd-d9d9da718667"
  },
  {
    "resource_uri": "/api/2.0/jobs/4d043d40-ebc4-4501-8386-9751ac19f9b9/",
    "uuid": "4d043d40-ebc4-4501-8386-9751ac19f9b9"
  },
},
```

```
{
  "resource_uri": "/api/2.0/jobs/9c05f3a1-13a5-45af-8faf-6bb47a53e2d8/",
  "uuid": "9c05f3a1-13a5-45af-8faf-6bb47a53e2d8"
},
{
  "resource_uri": "/api/2.0/jobs/c7e7fe31-179b-4b38-a5fa-e3f399f683f2/",
  "uuid": "c7e7fe31-179b-4b38-a5fa-e3f399f683f2"
},
{
  "resource_uri": "/api/2.0/jobs/3c31b43f-55d8-426a-8124-02c71a0b3b4e/",
  "uuid": "3c31b43f-55d8-426a-8124-02c71a0b3b4e"
},
{
  "resource_uri": "/api/2.0/jobs/08312509-d90a-44e9-9f07-280d2e2935ae/",
  "uuid": "08312509-d90a-44e9-9f07-280d2e2935ae"
},
{
  "resource_uri": "/api/2.0/jobs/1cd69a16-5aee-45a9-99ec-698a1266c514/",
  "uuid": "1cd69a16-5aee-45a9-99ec-698a1266c514"
},
{
  "resource_uri": "/api/2.0/jobs/f1f2db65-5681-4404-888a-46aa97df6d9a/",
  "uuid": "f1f2db65-5681-4404-888a-46aa97df6d9a"
},
{
  "resource_uri": "/api/2.0/jobs/11f45314-d3c1-469c-aaa0-d30d3574a62b/",
  "uuid": "11f45314-d3c1-469c-aaa0-d30d3574a62b"
},
{
  "resource_uri": "/api/2.0/jobs/9ac68490-9e85-4b41-a76d-754df657dbd1/",
  "uuid": "9ac68490-9e85-4b41-a76d-754df657dbd1"
},
{
  "resource_uri": "/api/2.0/jobs/93110b55-ad01-46e7-a71c-c10365e746b4/",
  "uuid": "93110b55-ad01-46e7-a71c-c10365e746b4"
},
{
  "resource_uri": "/api/2.0/jobs/7e6036be-b47b-4b7a-86c8-50e9ed585404/",
  "uuid": "7e6036be-b47b-4b7a-86c8-50e9ed585404"
},
{
  "resource_uri": "/api/2.0/jobs/e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5/",
  "uuid": "e8d70c86-7ce2-4506-87ea-7c4a0d1eb9e5"
},
{
  "resource_uri": "/api/2.0/jobs/0b1280ae-b715-4dbc-a902-86c25603474d/",
  "uuid": "0b1280ae-b715-4dbc-a902-86c25603474d"
},
{
  "resource_uri": "/api/2.0/jobs/401d7916-359a-4cca-8abd-f6f832c97983/",
  "uuid": "401d7916-359a-4cca-8abd-f6f832c97983"
},
{
  "resource_uri": "/api/2.0/jobs/ad1d412b-c51a-4cca-8ff9-81f5976471dd/",
  "uuid": "ad1d412b-c51a-4cca-8ff9-81f5976471dd"
},
{
  "resource_uri": "/api/2.0/jobs/bf3ff2b7-52b6-4ac8-921a-7d44b80711bb/",
  "uuid": "bf3ff2b7-52b6-4ac8-921a-7d44b80711bb"
}
```

```

        "uuid": "bf3ff2b7-52b6-4ac8-921a-7d44b80711bb"
    },
    {
        "resource_uri": "/api/2.0/jobs/9ce2ce9d-587c-46f6-b3bd-991ebf26b121/",
        "uuid": "9ce2ce9d-587c-46f6-b3bd-991ebf26b121"
    },
    {
        "resource_uri": "/api/2.0/jobs/79aed1c7-570a-4191-897a-337476ebc074/",
        "uuid": "79aed1c7-570a-4191-897a-337476ebc074"
    },
    {
        "resource_uri": "/api/2.0/jobs/1d630913-cef6-4e60-a472-125ded470400/",
        "uuid": "1d630913-cef6-4e60-a472-125ded470400"
    },
    {
        "resource_uri": "/api/2.0/jobs/51f61346-6d9b-48b7-8cf5-4f70acc1dd97/",
        "uuid": "51f61346-6d9b-48b7-8cf5-4f70acc1dd97"
    },
    {
        "resource_uri": "/api/2.0/jobs/ec58e294-0906-495f-86a2-4dd423fdd7b6/",
        "uuid": "ec58e294-0906-495f-86a2-4dd423fdd7b6"
    },
    {
        "resource_uri": "/api/2.0/jobs/ce301022-90ef-4b7d-819a-5b6172b942f2/",
        "uuid": "ce301022-90ef-4b7d-819a-5b6172b942f2"
    },
    {
        "resource_uri": "/api/2.0/jobs/09b4a45d-1b79-4116-bf01-96331f939d07/",
        "uuid": "09b4a45d-1b79-4116-bf01-96331f939d07"
    },
    {
        "resource_uri": "/api/2.0/jobs/1287eee1-8b2c-443e-b177-0235a76a3ab3/",
        "uuid": "1287eee1-8b2c-443e-b177-0235a76a3ab3"
    },
    {
        "resource_uri": "/api/2.0/jobs/7b71312d-fb1c-43c6-962b-6fd15e637ad9/",
        "uuid": "7b71312d-fb1c-43c6-962b-6fd15e637ad9"
    },
    {
        "resource_uri": "/api/2.0/jobs/e4e5b16d-abca-41e0-8755-75fbb0d434c6/",
        "uuid": "e4e5b16d-abca-41e0-8755-75fbb0d434c6"
    },
    {
        "resource_uri": "/api/2.0/jobs/dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a/",
        "uuid": "dc7c4fca-6a66-4efb-87b8-dbd1d2dc9730a"
    },
    {
        "resource_uri": "/api/2.0/jobs/c61d1361-633f-4304-b80b-aff64785ac91/",
        "uuid": "c61d1361-633f-4304-b80b-aff64785ac91"
    },
    {
        "resource_uri": "/api/2.0/jobs/5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52/",
        "uuid": "5ee1a46b-4e58-4ec0-9dae-e7b919ae6e52"
    },
    {
        "resource_uri": "/api/2.0/jobs/a2021f29-9f12-4443-87b3-0b2fdb9a76b5/",
        "uuid": "a2021f29-9f12-4443-87b3-0b2fdb9a76b5"
    },
    },

```

```
{
  "resource_uri": "/api/2.0/jobs/38def946-1616-4215-b216-16035a1fb738/",
  "uuid": "38def946-1616-4215-b216-16035a1fb738"
},
{
  "resource_uri": "/api/2.0/jobs/02255a54-8b9f-43ec-b751-89a4afc18a90/",
  "uuid": "02255a54-8b9f-43ec-b751-89a4afc18a90"
},
{
  "resource_uri": "/api/2.0/jobs/ec61caa4-2baf-45ec-8f59-61e5716395ca/",
  "uuid": "ec61caa4-2baf-45ec-8f59-61e5716395ca"
},
{
  "resource_uri": "/api/2.0/jobs/ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f/",
  "uuid": "ae8ecbcb-68e9-42b6-9c04-6ff9ffd7f88f"
},
{
  "resource_uri": "/api/2.0/jobs/1fbbcfcf-5027-4100-a93b-83ff73ff80cb/",
  "uuid": "1fbbcfcf-5027-4100-a93b-83ff73ff80cb"
},
{
  "resource_uri": "/api/2.0/jobs/f12e8cd7-d76e-4b8a-b692-f4c22266e792/",
  "uuid": "f12e8cd7-d76e-4b8a-b692-f4c22266e792"
},
{
  "resource_uri": "/api/2.0/jobs/728f1e12-2701-4618-alec-ff1a2cac63d0/",
  "uuid": "728f1e12-2701-4618-alec-ff1a2cac63d0"
},
{
  "resource_uri": "/api/2.0/jobs/43f28ca1-e523-4481-966b-1c85fbb673fa/",
  "uuid": "43f28ca1-e523-4481-966b-1c85fbb673fa"
},
{
  "resource_uri": "/api/2.0/jobs/9a1cc534-e426-4b68-b001-75f37119b353/",
  "uuid": "9a1cc534-e426-4b68-b001-75f37119b353"
},
{
  "resource_uri": "/api/2.0/jobs/3d18c709-1601-4a7f-af9d-530ab86ef825/",
  "uuid": "3d18c709-1601-4a7f-af9d-530ab86ef825"
},
{
  "resource_uri": "/api/2.0/jobs/a93b3d0d-e294-4f02-bc44-3cfd36d24ddb/",
  "uuid": "a93b3d0d-e294-4f02-bc44-3cfd36d24ddb"
},
{
  "resource_uri": "/api/2.0/jobs/f47b65e9-14ca-40f6-9b2a-60c27091a75f/",
  "uuid": "f47b65e9-14ca-40f6-9b2a-60c27091a75f"
},
{
  "resource_uri": "/api/2.0/jobs/69713c13-b1bb-4f84-972c-eb7adf55a051/",
  "uuid": "69713c13-b1bb-4f84-972c-eb7adf55a051"
},
{
  "resource_uri": "/api/2.0/jobs/8d650bc8-80f9-4272-b190-11cd4b086d91/",
  "uuid": "8d650bc8-80f9-4272-b190-11cd4b086d91"
},
{
  "resource_uri": "/api/2.0/jobs/12684b6c-fc57-4edb-916f-efe78a0e3f51/",
  "uuid": "12684b6c-fc57-4edb-916f-efe78a0e3f51"
}
```

```
    "uuid": "12684b6c-fc57-4edb-916f-efe78a0e3f51"
  },
  {
    "resource_uri": "/api/2.0/jobs/564c53a1-69c0-45de-8836-f52b49baff18/",
    "uuid": "564c53a1-69c0-45de-8836-f52b49baff18"
  },
  {
    "resource_uri": "/api/2.0/jobs/26b24ab4-a89b-44d6-9194-e7324faa8922/",
    "uuid": "26b24ab4-a89b-44d6-9194-e7324faa8922"
  },
  {
    "resource_uri": "/api/2.0/jobs/e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f/",
    "uuid": "e24ed38b-1d3a-4f1d-8c91-2812f8c13c5f"
  },
  {
    "resource_uri": "/api/2.0/jobs/52a1d9da-ee39-4973-b047-9233ae4e09ed/",
    "uuid": "52a1d9da-ee39-4973-b047-9233ae4e09ed"
  },
  {
    "resource_uri": "/api/2.0/jobs/7c7d954c-58d9-49cf-9d9b-645adeb072de/",
    "uuid": "7c7d954c-58d9-49cf-9d9b-645adeb072de"
  },
  {
    "resource_uri": "/api/2.0/jobs/6043d2cf-d1d3-4221-bc3a-6aa3c782e68d/",
    "uuid": "6043d2cf-d1d3-4221-bc3a-6aa3c782e68d"
  },
  {
    "resource_uri": "/api/2.0/jobs/c718ce2d-0ba6-4964-be73-d35282a1024d/",
    "uuid": "c718ce2d-0ba6-4964-be73-d35282a1024d"
  },
  {
    "resource_uri": "/api/2.0/jobs/3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090/",
    "uuid": "3c92ad0f-e5a8-40b8-8d15-5dbb37ab5090"
  },
  {
    "resource_uri": "/api/2.0/jobs/3e849dc8-f88e-4aa9-a7bb-5c245c892098/",
    "uuid": "3e849dc8-f88e-4aa9-a7bb-5c245c892098"
  },
  {
    "resource_uri": "/api/2.0/jobs/fbc30ede-7ec5-4e11-8c51-6b729875bc41/",
    "uuid": "fbc30ede-7ec5-4e11-8c51-6b729875bc41"
  },
  {
    "resource_uri": "/api/2.0/jobs/243e1c08-3b5f-4a87-acee-ff6aefb1dcbd/",
    "uuid": "243e1c08-3b5f-4a87-acee-ff6aefb1dcbd"
  },
  {
    "resource_uri": "/api/2.0/jobs/592437ff-0cb0-4f62-a62c-ac964f5e6d45/",
    "uuid": "592437ff-0cb0-4f62-a62c-ac964f5e6d45"
  },
  {
    "resource_uri": "/api/2.0/jobs/34502453-dba1-4530-bc75-7aadddbd6376/",
    "uuid": "34502453-dba1-4530-bc75-7aadddbd6376"
  },
  {
    "resource_uri": "/api/2.0/jobs/3246e6e6-ea98-47cf-8e1c-174beec2b466/",
    "uuid": "3246e6e6-ea98-47cf-8e1c-174beec2b466"
  },
},
```

```
{
  "resource_uri": "/api/2.0/jobs/a7269f26-a630-4289-9195-322807e5d626/",
  "uuid": "a7269f26-a630-4289-9195-322807e5d626"
},
{
  "resource_uri": "/api/2.0/jobs/9050f1d1-9ac3-4cfb-bd30-0d4b169cc873/",
  "uuid": "9050f1d1-9ac3-4cfb-bd30-0d4b169cc873"
},
{
  "resource_uri": "/api/2.0/jobs/0649e5fe-1a17-4b16-8473-fa847cabb603/",
  "uuid": "0649e5fe-1a17-4b16-8473-fa847cabb603"
},
{
  "resource_uri": "/api/2.0/jobs/db26bfbf-a615-4eb4-a631-9ba85140dc3b/",
  "uuid": "db26bfbf-a615-4eb4-a631-9ba85140dc3b"
},
{
  "resource_uri": "/api/2.0/jobs/4eb78262-9f34-4ed8-81de-00b9ac11bfd8/",
  "uuid": "4eb78262-9f34-4ed8-81de-00b9ac11bfd8"
},
{
  "resource_uri": "/api/2.0/jobs/2a3ac055-0133-4b6e-a999-1c9c197bd55c/",
  "uuid": "2a3ac055-0133-4b6e-a999-1c9c197bd55c"
},
{
  "resource_uri": "/api/2.0/jobs/16a02c3f-f5eb-48b6-a8da-8185a39f17a2/",
  "uuid": "16a02c3f-f5eb-48b6-a8da-8185a39f17a2"
},
{
  "resource_uri": "/api/2.0/jobs/85ecfbc9-9857-49e4-909a-2c7cdcbcladc/",
  "uuid": "85ecfbc9-9857-49e4-909a-2c7cdcbcladc"
},
{
  "resource_uri": "/api/2.0/jobs/18dlb2ae-3f9b-4cae-b5f4-6086f868d5e5/",
  "uuid": "18dlb2ae-3f9b-4cae-b5f4-6086f868d5e5"
},
{
  "resource_uri": "/api/2.0/jobs/7879e9e0-de4b-4b85-b69f-b416243527d9/",
  "uuid": "7879e9e0-de4b-4b85-b69f-b416243527d9"
},
{
  "resource_uri": "/api/2.0/jobs/13bfc35b-6374-480d-aed7-d06e9b69f52b/",
  "uuid": "13bfc35b-6374-480d-aed7-d06e9b69f52b"
},
{
  "resource_uri": "/api/2.0/jobs/fcc07794-94e0-4f6b-a9f0-32c52098b7f2/",
  "uuid": "fcc07794-94e0-4f6b-a9f0-32c52098b7f2"
},
{
  "resource_uri": "/api/2.0/jobs/bce778e4-5003-4cb0-b60b-e86717e11584/",
  "uuid": "bce778e4-5003-4cb0-b60b-e86717e11584"
},
{
  "resource_uri": "/api/2.0/jobs/3d7cf702-917a-4864-9a22-b8b1c0ddd0da/",
  "uuid": "3d7cf702-917a-4864-9a22-b8b1c0ddd0da"
},
{
  "resource_uri": "/api/2.0/jobs/002b43f6-f12e-4b4a-9566-3affc49cbff5/",
  "uuid": "002b43f6-f12e-4b4a-9566-3affc49cbff5"
}
```

```
    "uuid": "002b43f6-f12e-4b4a-9566-3affc49cbff5"
  },
  {
    "resource_uri": "/api/2.0/jobs/f6f9423d-e239-48bf-b3e1-7eef57f41df5/",
    "uuid": "f6f9423d-e239-48bf-b3e1-7eef57f41df5"
  },
  {
    "resource_uri": "/api/2.0/jobs/80498624-4b6a-4c23-8db3-0402b8bc61e0/",
    "uuid": "80498624-4b6a-4c23-8db3-0402b8bc61e0"
  },
  {
    "resource_uri": "/api/2.0/jobs/57cd32c3-8969-4286-b4f3-d8e4132648db/",
    "uuid": "57cd32c3-8969-4286-b4f3-d8e4132648db"
  },
  {
    "resource_uri": "/api/2.0/jobs/e4ff1f15-d0ee-4717-89a1-2c0ad024391c/",
    "uuid": "e4ff1f15-d0ee-4717-89a1-2c0ad024391c"
  },
  {
    "resource_uri": "/api/2.0/jobs/a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2/",
    "uuid": "a3e72cd9-bcf3-4810-b2b8-40c0db8ba2d2"
  },
  {
    "resource_uri": "/api/2.0/jobs/aa4a37ed-a657-4544-bcea-35c8b87f7382/",
    "uuid": "aa4a37ed-a657-4544-bcea-35c8b87f7382"
  },
  {
    "resource_uri": "/api/2.0/jobs/9ecbc462-7fae-4b23-aabb-5a6d05c8c106/",
    "uuid": "9ecbc462-7fae-4b23-aabb-5a6d05c8c106"
  },
  {
    "resource_uri": "/api/2.0/jobs/4b97a416-bef0-4d9c-ab19-715fb228f7f6/",
    "uuid": "4b97a416-bef0-4d9c-ab19-715fb228f7f6"
  },
  {
    "resource_uri": "/api/2.0/jobs/ff128f6d-c51b-4d01-8932-14be8748f9dd/",
    "uuid": "ff128f6d-c51b-4d01-8932-14be8748f9dd"
  },
  {
    "resource_uri": "/api/2.0/jobs/bd4b2465-09b7-4e12-8cfa-7d8779281ee7/",
    "uuid": "bd4b2465-09b7-4e12-8cfa-7d8779281ee7"
  },
  {
    "resource_uri": "/api/2.0/jobs/03ecdbd7-9799-48c8-aa71-06d072d04b3f/",
    "uuid": "03ecdbd7-9799-48c8-aa71-06d072d04b3f"
  },
  {
    "resource_uri": "/api/2.0/jobs/871aa701-cda8-47f6-b10b-df6d33f87cc9/",
    "uuid": "871aa701-cda8-47f6-b10b-df6d33f87cc9"
  },
  {
    "resource_uri": "/api/2.0/jobs/23f8bdc6-5ab4-477c-8f7c-7bdb5952b483/",
    "uuid": "23f8bdc6-5ab4-477c-8f7c-7bdb5952b483"
  },
  {
    "resource_uri": "/api/2.0/jobs/10f675b4-aff6-4158-98ab-16a285f8705e/",
    "uuid": "10f675b4-aff6-4158-98ab-16a285f8705e"
  },
},
```



```

    {
      "resource_uri": "/api/2.0/jobs/bcc7eddf-cecd-455c-86e9-64425b26b39e/",
      "uuid": "bcc7eddf-cecd-455c-86e9-64425b26b39e"
    },
    {
      "resource_uri": "/api/2.0/jobs/16589be9-9bfb-4991-b75a-268a0f5c629d/",
      "uuid": "16589be9-9bfb-4991-b75a-268a0f5c629d"
    },
    {
      "resource_uri": "/api/2.0/jobs/ad6b508e-882f-4554-962e-10df50a46e51/",
      "uuid": "ad6b508e-882f-4554-962e-10df50a46e51"
    },
    {
      "resource_uri": "/api/2.0/jobs/ebd647a3-6ad1-4ae9-8bfb-b618072f0545/",
      "uuid": "ebd647a3-6ad1-4ae9-8bfb-b618072f0545"
    },
    {
      "resource_uri": "/api/2.0/jobs/799c758f-2e68-44ab-9808-04271937331b/",
      "uuid": "799c758f-2e68-44ab-9808-04271937331b"
    }
  ],
  "licenses": [],
  "media": "disk",
  "meta": {
    "description": "",
    "install_notes": ""
  },
  "mounted_on": [],
  "name": "atom-sol",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 12348030976,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [],
  "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
},
{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_1",
  "owner": {

```

```

        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/0d5ef2eb-93f2-44fe-99fa-f85279dffa2b/",
    "runtime": {
        "is_snapshotable": true,
        "snapshots_allocated_size": 0,
        "storage_type": "dssd"
    },
    "size": 1073741824,
    "snapshots": [],
    "status": "unmounted",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "0d5ef2eb-93f2-44fe-99fa-f85279dffa2b"
}
]
}

```

The server is recursively deleted with all attached drives with media type disk:

```

DELETE /api/2.0/servers/efc6cc26-3706-4638-910e-e8b9ef45173f/?recurse=disks HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

After DELETE of the server, only drives with media type disk attached to the server are deleted. CDROMs are left intact:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 3
  },
  "objects": [
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/drives/cf0af312-aeeb-4f3a-bf00-426d13126edf/",
      "status": "unmounted",
      "uuid": "cf0af312-aeeb-4f3a-bf00-426d13126edf"
    },
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/drives/3d504199-6bac-4612-a19e-691c9c6c6728/",
      "status": "unmounted",
      "uuid": "3d504199-6bac-4612-a19e-691c9c6c6728"
    },
    {
      "owner": {

```

```

        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/",
    "status": "unmounted",
    "uuid": "b9a2e66c-81d1-4de3-aac0-b6f2bde806f1"
}
]
}

```

## 12.10 Server Runtime and Server Details

### GET /servers/{uuid}/

Gets detailed information for server identified by *server\_uuid*.

#### Status Codes

- 200 – no error

If the server is started the definition includes a *runtime* attribute. The runtime object contains information on, when the server was started, and runtime information about the server NICs, such as how much traffic went through the interface and what are the dynamic IPs assigned to the NIC. The NIC runtime is also available in the NIC definition of the running server.

#### Example request:

```

GET /api/2.0/servers/4e31777b-92b5-4633-9f31-c28443a63cfd/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [
    {
      "boot_order": 1,
      "dev_channel": "0:0",
      "device": "virtio",
      "drive": {
        "resource_uri": "/api/2.0/drives/39e4c24b-980a-49ce-968c-1f32b124b23f/",
        "uuid": "39e4c24b-980a-49ce-968c-1f32b124b23f"
      }
    },
    {
      "runtime": {
        "io": {
          "bytes_read": 512,
          "bytes_written": 0,
          "count_flush": 0,
          "count_read": 1,
          "count_written": 0,

```

```

        "total_time_ns_flush": 0,
        "total_time_ns_read": 606050,
        "total_time_ns_write": 0
    }
}
],
"enable_numa": false,
"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 536870912,
"meta": {},
"name": "testServerAcc",
"nics": [
    {
        "boot_order": null,
        "firewall_policy": null,
        "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
        },
        "ip_v6_conf": null,
        "mac": "22:b8:8c:17:fe:19",
        "model": "virtio",
        "runtime": {
            "interface_type": "public",
            "io": {
                "bytes_recv": 0,
                "bytes_sent": 0,
                "packets_recv": 0,
                "packets_sent": 0
            },
            "ip_v4": {
                "resource_uri": "/api/2.0/ips/94.26.101.149/",
                "uuid": "94.26.101.149"
            },
            "ip_v6": null
        },
        "vlan": null
    }
],
"owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/4e31777b-92b5-4633-9f31-c28443a63cfd/",
"runtime": {
    "active_since": "2015-03-19T13:52:51+00:00",
    "nics": [
        {
            "interface_type": "public",
            "io": {

```

```

        "bytes_recv": 0,
        "bytes_sent": 0,
        "packets_recv": 0,
        "packets_sent": 0
      },
      "ip_v4": {
        "resource_uri": "/api/2.0/ips/94.26.101.149/",
        "uuid": "94.26.101.149"
      },
      "ip_v6": null,
      "mac": "22:b8:8c:17:fe:19"
    }
  ],
  "smp": 1,
  "status": "running",
  "tags": [],
  "uuid": "4e31777b-92b5-4633-9f31-c28443a63cfd",
  "vnc_password": "testserver"
}

```

## 12.11 Server Actions

### 12.11.1 Start

**POST /servers/{uuid}/action/?do=start**

Starts a server with specific UUID.

#### Status Codes

- **202** – Action accepted, execution is proceeding.

#### Example request:

```

POST /api/2.0/servers/d0ae4a09-13d5-4af2-aa12-56935035adef/action/?do=start HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{}

```

#### Example response:

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "start",
  "result": "success",
  "uuid": "05221547-3036-44c4-9418-0f0239992459"
}

```

**Warning:** Servers have some default network restrictions, applied depending on your user state. Please refer to the *default restrictions* section the Firewall policies documentation

### 12.11.2 Stop

**POST /servers/{uuid}/action/?do=stop**

Stops a server with specific UUID. This action is equivalent to pulling the power cord of a physical server. For more graceful shutdown see *ACPI Shutdown*.

**Status Codes**

- 202 – Action accepted, execution is proceeding.

**Example request:**

```
POST /api/2.0/servers/d0ae4a09-13d5-4af2-aa12-56935035adef/action/?do=stop HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{}
```

**Example response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "stop",
  "result": "success",
  "uuid": "05221547-3036-44c4-9418-0f0239992459"
}
```

### 12.11.3 ACPI Shutdown

**POST /servers/{uuid}/action/?do=shutdown**

Sends an ACPI shutdowns to a server with specific UUID for a minute. If the VM OS handles ACPI shutdown events (equivalent to pressing the power button), it will shutdown gracefully. As some operating systems don't always handle single ACPI event the shutdown is sent every second for a minute. While the shutdown is initiated, the server is put into status *stopping* to prevent interfering actions. If after a minute the server has not powered off during this minute the status is returned to *running* to allow the user to *Stop* it. If the server shuts down successfully during the one minute period it will be switched to *stopped* status.

**Status Codes**

- 202 – Action accepted, execution is proceeding.

**Example request:**

```
POST /api/2.0/servers/d79eeec6-9cc5-4131-9f04-36961c267a74/action/?do=shutdown HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{}
```

**Example response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "shutdown",
  "result": "success",
}
```

```

    "uuid": "d79ecec6-9cc5-4131-9f04-36961c267a74"
  }

```

### 12.11.4 Start in a separate availability group

It is possible to hint the system which servers are preferred to run on separate hardware host. See *Starting Servers in a Different Availability Group (Start Avoid)*.

### 12.11.5 Open Serial Console Connection

#### POST /servers/{uuid}/action/?do=open\_console

Each server has a virtual serial device, which is tunneled to a TCP socket. The serial device is seen as /dev/ttyS0 or COM1 on most operating systems. If your OS supports it, you can configure a serial console on this virtual serial port, which might be more convenient to use than VNC, as it generally uses less bandwidth and allows you to copy-paste in the virtual terminal.

#### Status Codes

- **202** – Action accepted, execution is proceeding.

#### Example request:

```

POST /api/2.0/servers/e27eacc3-0f20-4c1f-9f7d-eac705bf2d02/action/?do=open_console HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{}

```

#### Example response:

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "open_console",
  "console_url": "csconsole://direct.wdc.cloudsigma.com:43835",
  "result": "success",
  "uuid": "7a3a67e0-93e4-46db-a4a2-c0f886987dc0"
}

```

The return object contains `console_url` formatted as `csconsole://<cs-domain>:<port>`. You can connect to it using telnet:

```
telnet direct.zrh.clousigma.com 12345
```

Before being connected to the actual serial console, the server's `vnc_password` is required to prevent unauthorized access.

Most telnet clients start in line mode, which usually interferes with standard unix shells and programs, so they need to be set to character mode. It is advisable to enter your password in line mode and then change to character mode. Refer to your telnet client manual. On some clients that is done by pressing `ctrl+] (^)` and then entering “mode character” at the prompt.

## 12.11.6 Close Serial Console Connection

**POST** /servers/{uuid}/action/?do=close\_console

Closes a VNC tunnel to a server with specific UUID.

### Status Codes

- **202** – Action accepted, execution is proceeding.

### Example request:

```
POST /api/2.0/servers/e27eacc3-0f20-4c1f-9f7d-eac705bf2d02/action/?do=close_console HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{}
```

### Example response:

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "close_console",
  "result": "success",
  "uuid": "7a3a67e0-93e4-46db-a4a2-c0f886987dc0"
}
```

## 12.11.7 Cloning

**POST** /servers/{uuid}/action/?do=clone

**statuscode 202** Action accepted, execution is proceeding.

Clones a server. Does cascading clone of server drives, i.e. all disk drives attached to the server are cloned and attached to the new server. CDROM drives attached to the clone source are attached to the clone. IPs of the cloned server are set to DHCP. All other properties of the clone are equal to the original.

The optional body can contain a name attribute, which will be the name of the newly-cloned server and/or random\_vnc\_password boolean attribute which if set will generate a new vnc password for the new server.

### Example clone source server:

```
{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [],
```



```

"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/ee11b9d1-e837-4f27-91a4-d1ae4c621bd1/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "ee11b9d1-e837-4f27-91a4-d1ae4c621bd1",
"vnc_password": "testserver"
}

```

**Example clone request:**

```

POST /api/2.0/servers/ee11b9d1-e837-4f27-91a4-d1ae4c621bd1/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

{
  "name": "test_cloned_server_name",
  "random_vnc_password": true
}

```

**Example clone response:**

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [
    {
      "resource_uri": "/api/2.0/jobs/559a2a76-df4a-4c0d-8449-979576b2c354/",
      "uuid": "559a2a76-df4a-4c0d-8449-979576b2c354"
    }
  ],
  "mem": 536870912,
  "meta": {},
  "name": "test_cloned_server_name",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],

```

```
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/2d69b07c-c7a3-4e25-88d2-c7055217e1fb/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "2d69b07c-c7a3-4e25-88d2-c7055217e1fb",
"vnc_password": "QR5coR4V"
}
```

---

**Note:** The name of the cloned drive will be changed using the clone naming strategy set in the profile. See [Clone naming](#) for more information

---

### 12.11.8 Cloning with Drives on Different Storage (Avoid)

It is possible to hint the system which drives are preferred to be on separate physical storage host. See *Creating Drives in a Different Availability Group (Create/Clone Avoid)*. I

## 12.12 Server NIC Configurations

The network interfaces are configured in the “nics” attribute. For more information on configuring network interfaces check [Server Network Interfaces](#) section.

Here is an example of defining a network interface with a dynamically assigned IP (for brevity only the “nics” attribute of the definitions is shown):

```
PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "nics": [
    {
      "vlan": "10619300-edda-42ba-91e0-7e3df0689d00"
    }
  ]
}
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:39:8a:48:33:36",
      "model": "virtio",
      "runtime": null,
      "vlan": {
```

```
    "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
    "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
  }
]
}
```

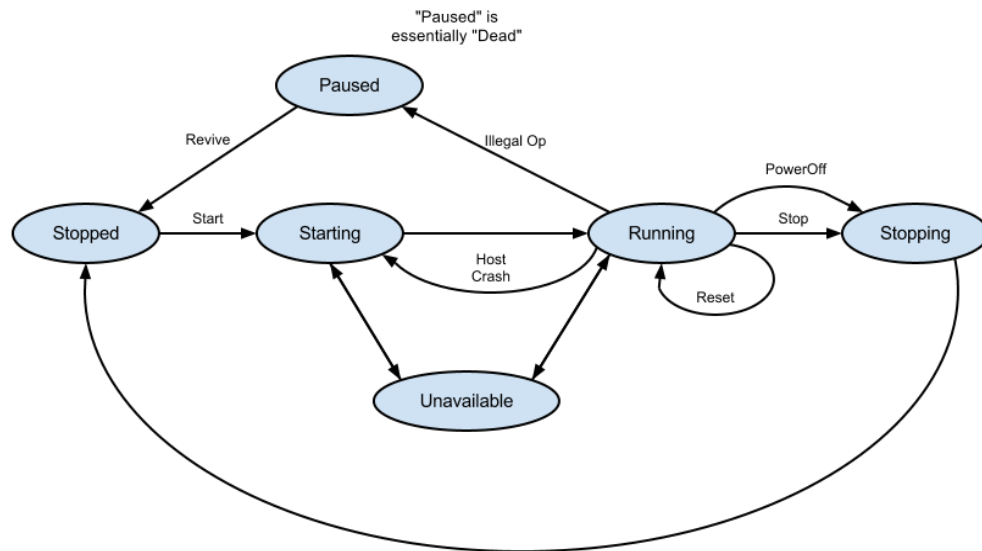
## 12.13 Availability groups

It is possible to query which servers share common hardware hosts. See *Server availability groups*.

## 12.14 Public keys

The `pubkeys` attribute contains a list of `keypairs` references. The attached pubkeys are available in the `server context`, and can be used by scripts inside the VM, such as `cloudinit`, to set the public keys automatically. See the *attaching keys to a server* section.

## 12.15 Server State Diagram



## 12.16 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "allowed_detail_http_methods": [
    "get",
    "put",
    "delete"
  ],
  "allowed_list_http_methods": [
    "get",
    "put",
    "delete",
    "post"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "context": {
      "default": true,

```

```

    "help_text": "Enable guest context serial device",
    "readonly": false,
    "required": false,
    "type": "boolean"
  },
  "cpu": {
    "default": null,
    "help_text": "Server's CPU Clock speed measured in MHz",
    "readonly": false,
    "required": true,
    "type": "integer"
  },
  "cpu_model": {
    "choices": [
      "kvm64"
    ],
    "default": null,
    "help_text": "Choose the virtual CPU model, for mitigating compatibility issues between t",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "cpu_type": {
    "choices": [
      "amd",
      "intel",
      "sparc_t4",
      "sparc_t5"
    ],
    "default": "amd",
    "help_text": "Specify the CPU type of the host on which this virtual server should run",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "cpus_instead_of_cores": {
    "default": false,
    "help_text": "Expose server SMPs as separate CPUs, instead of cores of a single CPU.",
    "readonly": false,
    "required": false,
    "type": "boolean"
  },
  "drives": {
    "default": [],
    "fields": {
      "boot_order": {
        "default": null,
        "help_text": "Drive boot order",
        "readonly": false,
        "required": false,
        "type": "integer"
      },
      "dev_channel": {
        "default": null,
        "help_text": "Device channel in format {controller:unit} ex. 0:1, 0:2, etc. Keep",
        "readonly": false,
        "required": true,
        "type": "string"
      }
    }
  }
}

```

```
    },
    "device": {
      "choices": [
        "ide",
        "virtio"
      ],
      "default": null,
      "help_text": "Device emulation type",
      "readonly": false,
      "required": true,
      "type": "string"
    },
    "drive": {
      "default": null,
      "help_text": "Drive UUID",
      "readonly": false,
      "required": true,
      "type": "related"
    },
    "runtime": {
      "default": "No default provided.",
      "fields": {
        "io": {
          "default": null,
          "fields": {
            "bytes_read": {
              "default": 0,
              "help_text": "Integer data. Ex: 2673",
              "readonly": false,
              "required": true,
              "type": "integer"
            },
            "bytes_written": {
              "default": 0,
              "help_text": "Integer data. Ex: 2673",
              "readonly": false,
              "required": true,
              "type": "integer"
            },
            "count_flush": {
              "default": 0,
              "help_text": "Integer data. Ex: 2673",
              "readonly": false,
              "required": true,
              "type": "integer"
            },
            "count_read": {
              "default": 0,
              "help_text": "Integer data. Ex: 2673",
              "readonly": false,
              "required": true,
              "type": "integer"
            },
            "count_written": {
              "default": 0,
              "help_text": "Integer data. Ex: 2673",
              "readonly": false,
              "required": true,
            }
          }
        }
      }
    }
  }
}
```

```

        "type": "integer"
    },
    "total_time_ns_flush": {
        "default": 0,
        "help_text": "Integer data. Ex: 2673",
        "readonly": false,
        "required": true,
        "type": "integer"
    },
    "total_time_ns_read": {
        "default": 0,
        "help_text": "Integer data. Ex: 2673",
        "readonly": false,
        "required": true,
        "type": "integer"
    },
    "total_time_ns_write": {
        "default": 0,
        "help_text": "Integer data. Ex: 2673",
        "readonly": false,
        "required": true,
        "type": "integer"
    }
},
"help_text": "A single related resource. Can be either a URI or set of ne
"readonly": false,
"required": false,
"type": "related"
}
},
"help_text": "Attached drive's runtime information",
"readonly": true,
"required": false,
"type": "related"
}
},
"help_text": "List of attached Drives to server",
"readonly": false,
"required": false,
"type": "related"
},
"enable_numa": {
    "default": false,
    "help_text": "Expose NUMA topology to the server.",
    "readonly": false,
    "required": false,
    "type": "boolean"
},
"grantees": {
    "default": "No default provided.",
    "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
    "readonly": false,
    "required": false,
    "type": "list"
},
"hv_relaxed": {
    "default": false,
    "help_text": "Improve performance of Windows servers.",

```

```

    "readonly": false,
    "required": false,
    "type": "boolean"
  },
  "hv_tsc": {
    "default": false,
    "help_text": "Improves performance of Windows servers with the trade off that the servers",
    "readonly": false,
    "required": false,
    "type": "boolean"
  },
  "hypervisor": {
    "choices": [
      "kvm",
      "solaris-kz"
    ],
    "default": "kvm",
    "help_text": "Specify hypervisor on which this server should run",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "jobs": {
    "default": "No default provided.",
    "help_text": "Background jobs related to this resource",
    "readonly": true,
    "required": true,
    "type": "related"
  },
  "mem": {
    "default": null,
    "help_text": "Server's Random Access Memory measured in bytes",
    "readonly": false,
    "required": true,
    "type": "integer"
  },
  "meta": {
    "default": {},
    "help_text": "User assigned meta information for this server",
    "readonly": false,
    "required": false,
    "type": "dict"
  },
  "name": {
    "default": null,
    "help_text": "Human readable name of server",
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "nics": {
    "default": [],
    "fields": {
      "boot_order": {
        "default": null,
        "help_text": "Device boot order",
        "readonly": false,
        "required": false,

```



```

    "type": "integer"
  },
  "firewall_policy": {
    "default": null,
    "help_text": "Firewall policy",
    "readonly": false,
    "required": false,
    "type": "related"
  },
  "ip_v4_conf": {
    "default": null,
    "fields": {
      "conf": {
        "choices": [
          "dhcp",
          "static",
          "manual"
        ],
        "default": "dhcp",
        "help_text": "Configuration type",
        "readonly": false,
        "required": true,
        "type": "string"
      },
      "ip": {
        "default": null,
        "help_text": "An IP address reference. Only used in 'static' IP configur",
        "readonly": false,
        "required": false,
        "type": "related"
      }
    },
    "help_text": "Public IPv4 configuration",
    "readonly": false,
    "required": false,
    "type": "related"
  },
  "ip_v6_conf": {
    "default": null,
    "fields": {
      "conf": {
        "choices": [
          "dhcp",
          "static",
          "manual"
        ],
        "default": "dhcp",
        "help_text": "Configuration type",
        "readonly": false,
        "required": true,
        "type": "string"
      },
      "ip": {
        "default": null,
        "help_text": "An IP address reference. Only used in 'static' IP configur",
        "readonly": false,
        "required": false,
        "type": "related"
      }
    }
  }
}

```

```

    },
    "help_text": "Public IPv6 configuration",
    "readonly": false,
    "required": false,
    "type": "related"
  },
  "mac": {
    "default": null,
    "help_text": "MAC address of the server NIC",
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "model": {
    "choices": [
      "ne2k_isa",
      "i82551",
      "i82557b",
      "i82559er",
      "ne2k_pci",
      "pcnet",
      "rtl8139",
      "e1000",
      "virtio"
    ],
    "default": null,
    "help_text": "Model of NIC",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "runtime": {
    "default": "No default provided.",
    "fields": {
      "interface_type": {
        "choices": [
          "public",
          "private"
        ],
        "default": null,
        "help_text": "Type of interface",
        "readonly": false,
        "required": true,
        "type": "string"
      },
      "io": {
        "default": null,
        "fields": {
          "bytes_recv": {
            "default": 0,
            "help_text": "Bytes received on this interface",
            "readonly": false,
            "required": false,
            "type": "integer"
          },
          "bytes_sent": {
            "default": 0,

```

```

        "help_text": "Packets received on this interface",
        "readonly": false,
        "required": false,
        "type": "integer"
    },
    "packets_rcv": {
        "default": 0,
        "help_text": "Bytes sent from this interface",
        "readonly": false,
        "required": false,
        "type": "integer"
    },
    "packets_sent": {
        "default": 0,
        "help_text": "Packets sent from this interface",
        "readonly": false,
        "required": false,
        "type": "integer"
    }
},
"help_text": "NIC runtime Input and Output data",
"readonly": false,
"required": false,
"type": "related"
},
"ip_v4": {
    "default": null,
    "help_text": "Public IPv4 configuration",
    "readonly": false,
    "required": false,
    "type": "related"
},
"ip_v6": {
    "default": null,
    "help_text": "Public IPv6 configuration",
    "readonly": false,
    "required": false,
    "type": "string"
}
},
"help_text": "NIC runtime information",
"readonly": true,
"required": false,
"type": "related"
},
"vlan": {
    "default": null,
    "help_text": "UUID of the private VLAN",
    "readonly": false,
    "required": false,
    "type": "related"
}
},
"help_text": "The list of nics attached to this server",
"readonly": false,
"required": false,
"type": "related"
},

```

```

"owner": {
  "default": null,
  "help_text": "UUID of the server owner",
  "readonly": true,
  "required": true,
  "type": "related"
},
"permissions": {
  "default": "No default provided.",
  "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
  "readonly": false,
  "required": false,
  "type": "list"
},
"pubkeys": {
  "default": [],
  "help_text": "List of SSH keys for that server",
  "readonly": false,
  "required": false,
  "type": "related"
},
"requirements": {
  "default": [],
  "help_text": "A collection of special requirements for this server",
  "readonly": false,
  "required": false,
  "type": "list"
},
"resource_uri": {
  "default": "No default provided.",
  "help_text": "Unicode string data. Ex: \"Hello World\"",
  "readonly": true,
  "required": true,
  "type": "string"
},
"runtime": {
  "default": "No default provided.",
  "fields": {
    "active_since": {
      "default": "No default provided.",
      "help_text": "Datetime object representing the exact time the guest was started.",
      "readonly": false,
      "required": true,
      "type": "string"
    },
    "nics": {
      "default": [],
      "fields": {
        "interface_type": {
          "choices": [
            "public",
            "private"
          ],
          "default": null,
          "help_text": "Type of interface",
          "readonly": false,
          "required": true,
          "type": "string"
        }
      }
    }
  }
}

```

```

    },
    "io": {
      "default": null,
      "fields": {
        "bytes_recv": {
          "default": 0,
          "help_text": "Bytes received on this interface",
          "readonly": false,
          "required": false,
          "type": "integer"
        },
        "bytes_sent": {
          "default": 0,
          "help_text": "Packets received on this interface",
          "readonly": false,
          "required": false,
          "type": "integer"
        },
        "packets_recv": {
          "default": 0,
          "help_text": "Bytes sent from this interface",
          "readonly": false,
          "required": false,
          "type": "integer"
        },
        "packets_sent": {
          "default": 0,
          "help_text": "Packets sent from this interface",
          "readonly": false,
          "required": false,
          "type": "integer"
        }
      },
      "help_text": "NIC runtime Input and Output data",
      "readonly": false,
      "required": false,
      "type": "related"
    },
    "ip_v4": {
      "default": null,
      "help_text": "Public IPv4 configuration",
      "readonly": false,
      "required": false,
      "type": "related"
    },
    "ip_v6": {
      "default": null,
      "help_text": "Public IPv6 configuration",
      "readonly": false,
      "required": false,
      "type": "string"
    },
    "mac": {
      "default": null,
      "help_text": "MAC address of this NIC",
      "readonly": false,
      "required": false,
      "type": "string"
    }
  }
}

```

```

        },
        "help_text": "The list of this server's NICs runtime",
        "readonly": false,
        "required": true,
        "type": "related"
    }
},
"help_text": "Runtime information of the guest",
"readonly": true,
"required": false,
"type": "related"
},
"smp": {
    "default": null,
    "help_text": "Symmetric Multiprocessing (SMP) i.e. number of CPU cores",
    "readonly": false,
    "required": false,
    "type": "integer"
},
"status": {
    "default": "No default provided.",
    "help_text": "Status of the guest.",
    "readonly": true,
    "required": false,
    "type": "string"
},
"tags": {
    "default": "No default provided.",
    "help_text": "Many related resources. Can be either a list of URIs or list of individual
",
    "readonly": false,
    "required": false,
    "type": "related"
},
"uuid": {
    "default": null,
    "help_text": "UUID of server",
    "readonly": true,
    "required": true,
    "type": "string"
},
"vnc_password": {
    "default": null,
    "help_text": "VNC Password to connect to server",
    "readonly": false,
    "required": true,
    "type": "string"
}
},
"filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
}
}

```

## 13.1 Device channel

Device channel is used to specify the controller number and unit number for each attached drive. This is used so every time you reboot your virtual machine, the drive remains on the same place in your guest OS ( ex: /dev/sdc ) You specify the channel in the following format - {controller}:{unit} with the following limits for ide and virtio device types:

- ide - 0:0, 0:1, 1:0, 1:1 ( total of 4 drives, max 2 units per controller, i.e 0-1)
- virtio - 0:0, ..., 0:5, ..., 1:0, etc ( total of 1024 drives, max 6 units per controller i.e 0-5)

## 13.2 Open VNC Tunnel

**POST /servers/{uuid}/action/?do=open\_vnc**

Server's console (virtual keyboard, mouse, and display) is exposed to the user through the VNC protocol. The `open_vnc` call opens a VNC tunnel to the server. The returned object contains a `vnc_url` specifying the endpoint to which to connect the VNC client. The password for the VNC connection is specified in the `vnc_password` field on the server definition. Note that the tunnel is not closed until reboot, so if you prefer you can close is using the `close_vnc` action.

### Status Codes

- **202** – Action accepted, execution is proceeding.

**Note:** VNC URL will be different each time you close/open the tunnel.

### Example request:

```
POST /api/2.0/servers/42cb8991-a39a-4ed3-b549-efd6a1dedd48/action/?do=open_vnc HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop

{}
```

### Example response:

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8
```

```
{
  "action": "open_vnc",
  "result": "success",
  "uuid": "80751bc7-37cc-48c1-bb08-fd04b46090bf",
  "vnc_url": "vnc://direct.lvs.cloudsigma.com:42714"
}
```

## 13.3 Close VNC Tunnel

**POST /servers/{uuid}/action/?do=close\_vnc**

Closes a VNC tunnel to a server with specific UUID.

### Status Codes

- **202** – Action accepted, execution is proceeding.

### Example request:

```
POST /api/2.0/servers/42cb8991-a39a-4ed3-b549-efd6a1dedd48/action/?do=close_vnc HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{}
```

### Example response:

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "close_vnc",
  "result": "success",
  "uuid": "80751bc7-37cc-48c1-bb08-fd04b46090bf"
}
```

### 13.3.1 Advanced settings

On every server configuration there are a few advanced options you can setup.

```
{
  "cpus_instead_of_cores": false,
  "enable_numa": false,
  "hv_relaxed": false,
  "hv_tsc": false
}
```

- **cpus\_instead\_of\_cores:**

- Type: true/false
- Description: selects whether the SMP is exposed as cores of a single CPU or separate CPUs. This should be set to `false` for Windows, because there are license requirements for multiple CPUs.

- **enable\_numa:**

- Type: true/false



- Description: This option exposes the NUMA/CPU topology of the hypervisor to the virtual machine. It boosts performance for NUMA aware applications. The option should be set to `true` for servers with SMP bigger than 6, since this is the number of cores we have per NUMA node on the hypervisor. If set to `true`, `cpus_instead_of_cores` should also be set to `true` for Linux, because some Linux distributions do not support multiple NUMA nodes on multiple CPU cores, but only on multiple CPUs.

- **hv\_relaxed**

- Type: `true/false`
- Description: Relax constraints on timers. This improves the behavior of VMs running Windows.

- **hv\_tsc:**

- Type: `true/false`
- Description: Enables more precise timers for Windows. This boost performance for timer specific code.

**Warning:** `hv_relaxed` and `hv_tsc` should be set to `false` for VMs running Linux



---

## Solaris Kernel Zone Servers

---

### 14.1 Hypervisor specific notes

Solaris kernel zones require at least one bootable drive to be attached and it will only try to boot from drives that have a *bootindex* value. Additionally, they do not support booting over the network.

Due to their nature, they do not support different drivers for network interfaces or drives. Additionally, the drive channel is ignored and the order of drives in the definition is passed to the guest.

### 14.2 Example

**Example request:**

```
POST /api/2.0/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "cpu": 1000,
      "cpu_type": "intel",
      "drives": [
        {
          "boot_order": 1,
          "dev_channel": "0:0",
          "device": "virtio",
          "drive": "4756666c-3755-4a55-9848-07f9bb403ba4"
        }
      ],
      "hypervisor": "solaris-kz",
      "mem": 1073741824,
      "name": "test_skzserver",
      "nics": [
        {
          "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
          },
          "model": "virtio"
        }
      ]
    }
  ]
}
```

```

    ],
    "vnc_password": "testskzserver"
  }
]
}

```

**Example response:**

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

```

```

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "intel",
      "cpus_instead_of_cores": false,
      "drives": [
        {
          "boot_order": 1,
          "dev_channel": "0:0",
          "device": "virtio",
          "drive": {
            "resource_uri": "/api/2.0/drives/4756666c-3755-4a55-9848-07f9bb403ba4/",
            "uuid": "4756666c-3755-4a55-9848-07f9bb403ba4"
          }
        },
        {
          "runtime": null
        }
      ],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "solaris-kz",
      "jobs": [],
      "mem": 1073741824,
      "meta": {},
      "name": "test_skzserver",
      "nics": [
        {
          "boot_order": null,
          "firewall_policy": null,
          "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
          },
          "ip_v6_conf": null,
          "mac": "22:ec:5c:9b:18:e1",
          "model": "virtio",
          "runtime": null,
          "vlan": null
        }
      ],
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      }
    }
  ],
}

```

```
    "permissions": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/0dcd3592-702a-4fd0-9b69-0b2407f95222/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "0dcd3592-702a-4fd0-9b69-0b2407f95222",
    "vnc_password": "testskzserver"
  }
]
}
```



---

## Keypairs (SSH keys)

---

The `keypairs` resource can be used to store ssh keys, for use with your servers. You have the choice whether to store only the public key or the full public-private key keypair. Keys attached to a server appear in the `server context`, and for OS images, which support cloudinit, they can also be automatically added to `authorized_keys` on a reboot. If you omit the public and private keys when creating a keypair, a new `rsa` keypair will be automatically generated for you. Having the private key in your profile will allow for using a web-based ssh client. It is also useful if your OS does not have key generation tools installed.

If the user has turned on two-factor authentication, the `keypairs` resource is protected with one time password. In order to make key management for servers easier (and not requiring OTP), there is `pubkeys` resource, which is a read-only version of the `keypairs` resource. The `pubkeys` objects are identical to `keypairs` except for the fact that they do not contain the private key, and have a `has_private_key` attribute instead of `private_key`, which indicates whether the private key was set.

### 15.1 Creating a keypair

#### POST `/keypairs/`

You have three choices when creating a keypair:

- Provide both private and public key
- Provide only a public key, in which case the private key will remain empty
- Provide no public, neither private key, in which case a new pair will be generated for you

Here is an example of providing both pairs:

```
POST /api/2.0/keypairs/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "name": "test_pub",
      "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIICXwIBAAKCAIEAuU+9enw6UwtDPW+82mLpkEK\n",
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQC5T716fDpTC0M9b7zaYumQQqK0ufV2sJa4u\n"
    }
  ]
}
```

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "fingerprint": "79:20:0b:49:72:11:b1:bc:df:73:94:09:3d:f8:90:71",
      "grantees": [],
      "meta": {},
      "name": "test_pub",
      "permissions": [],
      "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIICXwIBAAKCAIEAuU+9enw6UwtDPW+82mLpkEK\n",
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGC5T716fDpTC0M9b7zaYumQQk0UfV2sJa4u\n",
      "resource_uri": "/api/2.0/keypairs/fdd6fbba-644b-49d8-9324-ff6589179da3/",
      "tags": [],
      "uuid": "fdd6fbba-644b-49d8-9324-ff6589179da3"
    }
  ]
}
```

Here is an example of providing only a public key:

```
POST /api/2.0/keypairs/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "name": "test_another_pub",
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDFGtYDl+/Oua9uBXqwcbE84QUBBbDdMMzaZ\n"
    }
  ]
}
```

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "fingerprint": "e8:ee:43:72:38:09:6d:1e:8e:46:9e:76:80:a3:0a:01",
      "grantees": [],
      "meta": {},
      "name": "test_another_pub",
      "permissions": [],
      "private_key": null,
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDFGtYDl+/Oua9uBXqwcbE84QUBBbDdMMzaZ\n",
      "resource_uri": "/api/2.0/keypairs/6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244/",
      "tags": [],
      "uuid": "6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244"
    }
  ]
}
```

Here is an example of creating an autogenerated pair:

```
POST /api/2.0/keypairs/ HTTP/1.1
Content-Type: application/json
```



```
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop
```

```
{
  "objects": [
    {
      "name": "test_name"
    }
  ]
}
```

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8
```

```
{
  "objects": [
    {
      "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
      "grantees": [],
      "meta": {},
      "name": "test_name",
      "permissions": [],
      "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpwIBAAKCAQEAs4068mFSGTm025oanVSpty\n"public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAzjTryYVIZObTbmqdVKmK3JmOL/ZLcDSNE\n"resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-eald326862bd/",
      "tags": [],
      "uuid": "b4fa47cf-f929-4dde-b77a-eald326862bd"
    }
  ]
}
```

## 15.2 Listing, Getting, Updating, Deleting

List keypairs:

**GET /keypairs/**

```
GET /api/2.0/keypairs/?limit=0 HTTP/1.1
```

```
Content-Type: application/json
```

```
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "fingerprint": "8c:71:a2:f0:bc:a4:45:66:a8:59:77:6d:80:d5:a0:89",
      "grantees": [],
      "meta": {},
      "name": "ala",
      "permissions": [],
    }
  ]
}
```

```

    "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEqQIBAAKCAQEAvROcpJ/OT5iZUzfRydsJI4z
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAC9E5ykn/RPmJlTN9HJ2wkjJMJu5AB8YfcGX
    "resource_uri": "/api/2.0/keypairs/186106ac-afb5-40e5-a0de-6f0feba5a3d5/",
    "tags": [],
    "uuid": "186106ac-afb5-40e5-a0de-6f0feba5a3d5"
  },
  {
    "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
    "grantees": [],
    "meta": {},
    "name": "test_name",
    "permissions": [],
    "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpwIBAAKCAQEAs4068mFSGTm025oanVSpityZ
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQACzjTryYVIZObTbmhqdvKmk3JmOL/ZLcDSNE
    "resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/",
    "tags": [],
    "uuid": "b4fa47cf-f929-4dde-b77a-ea1d326862bd"
  }
]
}

```

Get a single keypair:

**GET /keypairs/{uuid}/**

```

GET /api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW9lIGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
  "grantees": [],
  "meta": {},
  "name": "test_name",
  "permissions": [],
  "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpwIBAAKCAQEAs4068mFSGTm025oanVSpityZji/2S3A
  "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQACzjTryYVIZObTbmhqdvKmk3JmOL/ZLcDSNElbWS7jtx
  "resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/",
  "tags": [],
  "uuid": "b4fa47cf-f929-4dde-b77a-ea1d326862bd"
}

```

Update a keypair:

**PUT /keypairs/{uuid}/**

```

PUT /api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW9lIGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
  "grantees": [],
  "meta": {},
  "name": "new_name",
  "permissions": [],
  "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpwIBAAKCAQEAs4068mFSGTm025oanVSpityZji/2S3A

```

```

"public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAzjTryYVIZObTbmhqdvKmkK3JmOL/ZLcDSNElbWS7jtX",
"resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/",
"tags": [],
"uuid": "b4fa47cf-f929-4dde-b77a-ea1d326862bd"
}

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
  "grantees": [],
  "meta": {},
  "name": "new_name",
  "permissions": [],
  "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpwIBAAKCAQEAs4068mFSGTm025oanVSpityZji/2S3A",
  "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAzjTryYVIZObTbmhqdvKmkK3JmOL/ZLcDSNElbWS7jtX",
  "resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/",
  "tags": [],
  "uuid": "b4fa47cf-f929-4dde-b77a-ea1d326862bd"
}

```

Delete a keypair:

**DELETE** /keypairs/{uuid}/

```

DELETE /api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8

```

## 15.3 Pubkeys resource

In order to access just the public keys without the need for OTP, you can use the `pubkeys` resource. Instead of a private key it contains an attribute `has_private_key` which indicates whether the private key was set.

For example creating an autogenerated keypair:

```

POST /api/2.0/keypairs/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "name": "test_name"
    }
  ]
}

```

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [

```

```

    {
      "fingerprint": "99:1e:71:ea:d1:43:80:55:14:ca:27:5c:64:69:3b:10",
      "grantees": [],
      "meta": {},
      "name": "test_name",
      "permissions": [],
      "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEPwIBAAKCAQEAs4068mFSGTm025oanVSpityj\n",
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAzjTryYVIZObTbmhqdvKmkK3JmOL/ZLcDSNE\n",
      "resource_uri": "/api/2.0/keypairs/b4fa47cf-f929-4dde-b77a-ea1d326862bd/",
      "tags": [],
      "uuid": "b4fa47cf-f929-4dde-b77a-ea1d326862bd"
    }
  ]
}

```

Results in a corresponding pubkeys object with `has_private_key`, which is `true`:

```

GET /api/2.0/pubkeys/fdd6fbba-644b-49d8-9324-ff6589179da3/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "fingerprint": "79:20:0b:49:72:11:b1:bc:df:73:94:09:3d:f8:90:71",
  "grantees": [],
  "has_private_key": true,
  "meta": {},
  "name": "test_pub",
  "permissions": [],
  "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQAgQC5T716fDpTC0M9b7zaYumQQqK0ufV2sJa4u9Z2F14J8\n",
  "resource_uri": "/api/2.0/pubkeys/fdd6fbba-644b-49d8-9324-ff6589179da3/",
  "tags": [],
  "uuid": "fdd6fbba-644b-49d8-9324-ff6589179da3"
}

```

Creating a keypair with only a public key:

```

POST /api/2.0/keypairs/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

{
  "objects": [
    {
      "name": "test_another_pub",
      "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDFGtYDl+/Oua9uBXqwcbe84QUBBbDdMMzaZ\n"
    }
  ]
}

```

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "fingerprint": "e8:ee:43:72:38:09:6d:1e:8e:46:9e:76:80:a3:0a:01",

```

```

    "grantees": [],
    "meta": {},
    "name": "test_another_pub",
    "permissions": [],
    "private_key": null,
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDFGtYD1+/Oua9uBXqwcB84QUBBbDdMMzaZ6MAGg1Bm",
    "resource_uri": "/api/2.0/keypairs/6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244/",
    "tags": [],
    "uuid": "6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244"
  }
]
}

```

Results in a corresponding pubkeys object with `has_private_key`, which is *false*:

```

GET /api/2.0/pubkeys/6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "fingerprint": "e8:ee:43:72:38:09:6d:1e:8e:46:9e:76:80:a3:0a:01",
  "grantees": [],
  "has_private_key": false,
  "meta": {},
  "name": "test_another_pub",
  "permissions": [],
  "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDFGtYD1+/Oua9uBXqwcB84QUBBbDdMMzaZ6MAGg1Bm",
  "resource_uri": "/api/2.0/pubkeys/6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244/",
  "tags": [],
  "uuid": "6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244"
}

```

## 15.4 Attaching pubkeys to a server

You can attach the keys to a server definition on the `pubkeys` attribute. They are made available to the VM OS via the server context.

Here is an example of doing that using the keys created in the above section:

```

POST /api/2.0/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "cpu": 1000,
      "cpu_type": "amd",
      "drives": [],
      "hypervisor": "kvm",
      "mem": 1073741824,
      "name": "test_srv_test_pubkeys",
      "nics": [

```

```

    {
      "ip_v4_conf": {
        "conf": "dhcp"
      },
      "model": "virtio"
    }
  ],
  "pubkeys": [
    "fdd6fbba-644b-49d8-9324-ff6589179da3",
    "6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244"
  ],
  "vnc_password": "7b08b0f03aa840ff"
}
]
}

```

HTTP/1.1 201 CREATED  
Content-Type: application/json; charset=utf-8

```

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 1073741824,
      "meta": {},
      "name": "test_srv_test_pubkeys",
      "nics": [
        {
          "boot_order": null,
          "firewall_policy": null,
          "ip_v4_conf": {
            "conf": "dhcp",
            "ip": null
          },
          "ip_v6_conf": null,
          "mac": "22:30:3d:8a:b6:59",
          "model": "virtio",
          "runtime": null,
          "vlan": null
        }
      ],
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "permissions": [],
      "pubkeys": [

```

```
    {
      "resource_uri": "/api/2.0/pubkeys/fdd6fbba-644b-49d8-9324-ff6589179da3/",
      "uuid": "fdd6fbba-644b-49d8-9324-ff6589179da3"
    },
    {
      "resource_uri": "/api/2.0/pubkeys/6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244/",
      "uuid": "6d7db550-d1c5-4e3b-9c0a-e83f6a2b8244"
    }
  ],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/f400243b-7005-4222-b319-dff0a376c4ea/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "f400243b-7005-4222-b319-dff0a376c4ea",
  "vnc_password": "7b08b0f03aa840ff"
}
]
```





---

## Server Context

---

Server context is a way for the VM to get information on the way it was set-up, i.e. get it's definition. Server context is communicated over a virtual serial port device, which on UNIX-like operating system would usually appear as `/dev/ttyS1` and on Windows as `COM2`. The serial port device for server context is the second serial device attached to the VM, because some UNIX operating systems configure a serial console on the first serial port.

Having the server definition accessible by the VM can be useful in various ways. For example it is possible to easily determine from within the VM, which network interfaces are connected to public and which to private network. Another use is to pass some data to initial VM setup scripts, like setting the hostname to the VM name or passing ssh public keys through server metadata.

At first sight, it might be confusing with the presence of both 'server context' and 'server metadata'. 'server metadata' is really a subset of 'server context'. The 'server metadata' itself is a key-value store for user-defined data on a server definition. The 'server context' on the other hand is one step above. It includes the full server definition, as well as the server metadata, along with attached drives definitions.

### 16.1 Context schema

The server context has almost the same schema as the `/server/<uuid>/detail/` API request schema. It differs in that it lacks owner, subscriptions, status, and runtime information. The other difference is that the drives attributes are expanded to the corresponding `/drive/<uuid>/detail/` which also lacks owner and runtime information. There is also a `global_context` attribute, which contains context available on all servers (see [drive edit](#)).

### 16.2 Setting up the virtual serial port

The virtual serial port device is not connected to a hardware device on the other side, so setting serial port hardware settings, such as baud rate and parity bits, does not affect the actual communication. However on Unix-like operating systems it may be necessary to set up the virtual terminal connected to the serial device. In general it is advisable to use the terminal in raw mode so that all characters are received uninterpreted. It is also important to not echo back received responses, because they may fill up the receive buffer, which may eject pending requests.

To set-up the terminal to raw mode on most unix systems one needs to the following command:

```
stty -F /dev/ttyS1 raw -echo
```

It is also possible to use `cooked mode` terminal for checking data on command line using standard utilities such as `echo`, `read`, and `cat`. As all responses are followed by newline and an `End of Transmission` character (usually represented as `^D` or `"\0x04"`), so setting the terminal to cooked mode would make it interpret the EOT character

as an **End-Of-File** condition, which makes it possible to use `read` and `cat` on the terminal device file (`/dev/ttyS1`) to receive the response. To set up cooked mode use the following command:

```
stty -F /dev/ttyS1 cooked -echo
```

If the default EOF character is different on your terminal it may be necessary to change it using:

```
stty -F /dev/ttyS1 cooked -echo eol ^D
```

## 16.3 Server Context Protocol

### 16.3.1 Requesting the complete server context

There is a simple protocol to retrieve the server context from the serial device. To request the whole server context one needs to send two newlines enclosed between inequality signs (aka pointy brackets, angle brackets). The newline can be either CRLF or just LF. In most programming languages the string to send will look like "`<\n\n>`".

The resulting response is a single-line json string representing the definition of the VM followed by newline (line feed character) and an **End of Transmission** character (usually represented as `^D` or "`\0x04`"). On Unix-like operating systems, if the terminal is set to cooked mode it is possible that the EOT character is interpreted as End-Of-File and is not present in the response.

The example below is for a server with the following definition:

```
GET /api/2.0/servers/e0fcf2ae-020e-45e1-bf69-982b17da4b6a/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

### 16.3.2 Request the complete server context using python

The best way to access the context is to use a serial port communication library from your favourite programming language. Below is an example using the Python programming language and the `pySerial` library:

```
#!/bin/env python

# This will work on python 2.6 and python 2.7

import serial; # pySerial module is called 'serial'

s = serial.Serial("/dev/ttyS1") # initialize a serial connection to '/dev/ttyS1'
s.write("<\n\n") # write an empty request to get the full context

context_str_raw = s.readline() # read one line, which is the whole context as there are no newlines
# Take the context string and remove any starting/trailing newlines and \x04 symbols
context_str = context_str_raw.strip("\x04\n")
print context_str # print the context to stdout
```

Here the same code, as a one-liner, which can be executed directly in bash, or another shell:

```
python -c 'import serial; s = serial.Serial("/dev/ttyS1");s.write("<\n\n"); print s.readline().strip'
```

#### Example:

```
python -c 'import serial; s = serial.Serial("/dev/ttyS1");s.write("<\n\n"); print s.readline().strip'
```

Result:

```
{"cpus_instead_of_cores": false, "enable_numa": false, "meta": {"ssh_public_key": "ssh-rsa AAAAB3NzaC...
```

### 16.3.3 Request the complete server context using bash

It is also possible to issue the request using just standard commands such as `read`, `echo`, and `cat`. Unfortunately that method is prone to errors because it breaks if there are escaped json values, such as "value contains quote: `\`", so it is highly recommended to use a serial communication library, such as the python example above. Below is an example of making a request, reading the result, and printing it on Linux in the bash shell:

```
#!/bin/bash

# set the terminal to cooked mode:
stty -F /dev/ttyS1 cooked -echo eol ^D
# use -e to parse newline escapes, and -n to remove the trailing newline:
echo -en "<\n\n>" > /dev/ttyS1
# read with timeout of 3 seconds and print the value which is put in the variable READVALUE
read -t 3 READVALUE < /dev/ttyS1 && echo $READVALUE
```

#### Example:

Request command. Including a flushing read before the actual request with `echo`:

```
v=$(read -t 13 READVALUE < /dev/ttyS1 && echo $READVALUE & sleep 1; echo -en "<\n\n>" > /dev/ttyS1; v
```

Result:

```
{"cpus_instead_of_cores": false, "enable_numa": false, "meta": {"ssh_public_key": "ssh-rsa AAAAB3NzaC...
```

### 16.3.4 Requesting a partial server context or a single value

To request a part of the definition json one can provide a path in the request. The path contains strings or integers separated by a forward slash (`/`). To request only the part of the json which is the NICs definitions one can request the path `/nics`. To request an element from a list value one can use an index in the path. Note that counting starts from 0. For example to get the definition of the first network interface one can use the following path `/nics/0`.

If the value of pointed to the path is a leaf value (it does not contain a json object or alist), it is returned without the surrounding quotes so requesting `<\nname\n>` from a server named "myserver" would return:

```
myserver\n\n0xd
```

and *NOT*:

```
"myserver"\n\n0xd
```

Be advised that the returned strings won't contain surrounding quotes but ASCII control characters will be backslash escaped. For example line-feed will become `\n`, carriage-return will become `\r`, and tab will become `\t`. Also there is no way to represent null json values so this will be converted to an empty string. Make sure that you parse the escaped characters if you need the original unescaped text in your scripts. An easy way to do it on UNIX-like OS is to use `echo -e $READVALUE`.

#### Examples:

```
python -c 'import serial; s = serial.Serial("/dev/ttyS1");s.write("<\nname\n>"); print s.readline()..
```

Result:

```
test_srv_test_guest_context
```

## 16.4 Passing information to the VM

The most suitable place to store information for passing to the VM through the context interface is the `server meta` field, or `drive meta`. Check [Objects' metadata field](#) for more information on editing the `meta` field.

For example in the server definition from above examples, the meta looks like:

```
{
  "ssh_public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCy4XpmD3kEfrZ+LCwFh3Xmqrk7rSiDu8v+ZCTO"
}
```

One can retrieve the `ssh_public_key` from the `meta` from within the VM using:

```
python -c 'import serial; s = serial.Serial("/dev/ttyS1");s.write("<\n/meta/ssh_public_key\n>"); print'
```

Result:

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCy4XpmD3kEfrZ+LCwFh3Xmqrk7rSiDu8v+ZCTOA3v1Njmy/ZOc3vy9Zr+IhWPI
```

Note that there isn't anything special about the `ssh_public_key` attribute of the metadata. It can be stored under any other key in the server metadata, as long as client software is aware where to look for it. It is also possible to store the key in one of the attached drives' meta.

## 16.5 Global context

Global context can be used to hold server context information common to all user's servers. Like `meta` field on servers, it can store arbitrary key-value pairs, but as the name suggests it is global for the user account, and the same for all servers.

Global context is centrally managed at the `/global_context/` API url. Within the VM context it resides in the `global_context` attribute of the server definition.

### 16.5.1 Get or update global context

**GET** `/global_context/`

**POST** `/global_context/`

**Example:**

Add a value to the global context.

```
POST /api/2.0/global_context/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "new_global_key": "new_global_val"
}
```

The resulting global context is:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "new_global_key": "new_global_val"
}
```

Using the server from examples above, we can check the context from the server shell:

Request command:

```
python -c 'import serial; s = serial.Serial("/dev/ttyS1");s.write("<\n\n"); print s.readline().strip'
```

Result:

```
{"uuid": "e83c79b3-ef07-4b8e-968e-dff5c386a053", "requirements": [], "name": "test_server_renamed", '}
```

Notice how the value of the `global_context` changed:

```
{
  "global_context": {
    "new_global_key": "new_global_val"
  }
}
```



---

## Server Network Interfaces

---

### 17.1 Private and Public Network Interfaces

There are three configurations for any one NIC that determines how that NIC behaves. Not all combinations of configuration are valid:

- `vlan`: Private Network
- `ip_v4_conf`: Public IP v4 Network, either static, DHCP, or manually assigned.
- `ip_v6_conf`: Public IP v6 Network, either static, DHCP, or manually assigned.

Configurations			Result
vlan	ip_v4_conf	ip_v6_conf	
True	True	True	Error: Cannot assign all configs on a NIC
True	True	False	Error: Cannot assign both Private and Public on a NIC
True	False	True	Error: Cannot assign both Private and Public on a NIC
True	False	False	Private network assigned
False	True	True	Both IP v4 and v6 assigned
False	True	False	Only IP v4 assigned
False	False	True	Only IP v6 assigned
False	False	False	No config assigned

### 17.2 IP Assignment for Public Interfaces

Assignment of IPs on private network interface is up to the user.

For public network interfaces it is possible to configure the way the address is assigned by setting the “conf” attribute on the `ip_v4_conf` or `ip_v6_conf` object:

“**dhcp**” The address is chosen by the system at boot time and assigned through DHCP. On each reboot the VM may get a different address. It is an error to specify the IP address for “conf”: “dhcp”. It is possible to get the currently assigned dynamic IP of a NIC from the *server runtime* of a running server.

```
{
  "ip_v4_conf": {
    "conf": "dhcp"
  }
}
```

**“static”** The address is chosen and specified by the user. It is assigned to the NIC through DHCP and does not change between reboots. The “ip” attribute is mandatory and an IP address can be assigned from the addresses owned by the user.

```
{
  "ip_v4_conf": {
    "conf": "static",
    "ip": "94.26.101.182"
  }
}
```

**“manual”** There is no address specified for the NIC, and the user has to specify the IP address from within the VM. When this setting is used, the NIC is allowed to use all IPs for which the user has subscription. This “conf” can be used to assign multiple IPs to the same NIC.

```
{
  "ip_v4_conf": {
    "conf": "manual"
  }
}
```

---

**Note:** The cloud firewall does not allow traffic to/from IPs which are not owned or not assigned to the VM. The only exception is for “manual” conf where the VM is allowed to use any of the IPs which are owned by the user (the user has a subscriptions for them).

---

## 17.3 MAC Addresses

Newly created NICs have their mac address randomly generated.

---

**Note:** All traffic from a MAC address different from the assigned by the system is stopped by the cloud firewall, so users should no attempt to change their MACs from within their VM.

---

In order to update a NIC definition, the definition should have its “mac” attribute filled in. If on “nics” list update a MAC address disappears from the list, the corresponding NIC is deleted. If a MAC appears in the new list, the corresponding nic is updated, and if no MAC is specified on a NIC, a new NIC is created. It is an error to attempt to specify a MAC address which was not previously in the “nics” list.

The order of NICs in the “nics” attribute is important, because it is also the order in which nics are presented to the VM. It is possible to rearrange NICs by rearranging their orded in the “nics” list.

## 17.4 NIC Models

The “model” attribute specifies the model of the emulated network card. It is recommended to use virtio, whenever possible (when drivers for virtio are available for the VM operating system).



Model	Bus	Speed	Description
e1000	PCI	1Gb/s	Intel Gigabit Ethernet
i82551	?	?	?
i82557b	?	?	?
i82559er	?	?	?
ne2k_pci	PCI	10Mb/s	NE2000
pcnet	?	?	?
rtl8139	?	10/100Mb/s	Realtek Fast Ethernet
virtio	PCI	1Gb/s	Virtual High Performance Ethernet card (see Virtio)

Reference: [Wikibooks QEMU/Devices/Network](#).

## 17.5 NIC Runtime

When a server is running, the server definition provides information on the currently assigned dynamic IP and the data traffic made through the NIC. See *server runtime* for more details.

## 17.6 Examples

### Example 1 - Private Network assigned to server:

Definition with all other values default:

```
PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "vlan": "10619300-edda-42ba-91e0-7e3df0689d00"
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
}
```

```

"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

**Result:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:39:8a:48:33:36",
      "model": "virtio",
      "runtime": null,
      "vlan": {
        "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
        "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
      }
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",

```

```

    "vnc_password": "testserver"
  }

```

**Example 2 - Dynamic IP v4 (DHCP) assigned to NIC with e1000 model:**

Definition with model set to 'e1000':

```

PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "ip_v4_conf": {
        "conf": "dhcp"
      },
      "model": "e1000"
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
  "vnc_password": "testserver"
}

```

Result:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,

```

```

"cpu_model": null,
"cpu_type": "amd",
"cpus_instead_of_cores": false,
"drives": [],
"enable_numa": false,
"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 536870912,
"meta": {},
"name": "testServerAcc",
"nics": [
  {
    "boot_order": null,
    "firewall_policy": null,
    "ip_v4_conf": {
      "conf": "dhcp",
      "ip": null
    },
    "ip_v6_conf": null,
    "mac": "22:76:35:14:21:7b",
    "model": "e1000",
    "runtime": null,
    "vlan": null
  }
],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

### Example 3 - Update nics:

Here is an example of a server with two nics:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,

```

```

"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 536870912,
"meta": {},
"name": "testServerAcc",
"nics": [
  {
    "boot_order": null,
    "firewall_policy": null,
    "ip_v4_conf": {
      "conf": "dhcp",
      "ip": null
    },
    "ip_v6_conf": null,
    "mac": "22:cd:d0:81:97:c8",
    "model": "e1000",
    "runtime": null,
    "vlan": null
  },
  {
    "boot_order": null,
    "firewall_policy": null,
    "ip_v4_conf": null,
    "ip_v6_conf": null,
    "mac": "22:25:57:2a:dc:cc",
    "model": "virtio",
    "runtime": null,
    "vlan": {
      "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
      "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
    }
  }
],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

In order to change the IP configuration of the NIC the definitions should have a MAC specified. Notice that in order to not delete the other NIC both NICs should be put in the request:

```

PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0ID0p

```

```

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": {
        "conf": "static",
        "ip": "94.26.101.182"
      },
      "ip_v6_conf": null,
      "mac": "22:cd:d0:81:97:c8",
      "model": "e1000",
      "runtime": null,
      "vlan": null
    },
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:25:57:2a:dc:cc",
      "model": "virtio",
      "runtime": null,
      "vlan": {
        "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
        "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
      }
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
  "vnc_password": "testserver"
}

```

}

The result is:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": {
        "conf": "static",
        "ip": {
          "resource_uri": "/api/2.0/ips/94.26.101.182/",
          "uuid": "94.26.101.182"
        }
      }
    },
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:cd:d0:81:97:c8",
      "model": "e1000",
      "runtime": null,
      "vlan": null
    },
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:25:57:2a:dc:cc",
      "model": "virtio",
      "runtime": null,
      "vlan": {
        "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
        "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
      }
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],

```

```

"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

**Example 4 - Rearrange nics:**

In order to rearrange the NICs of the server definition from *Example 3*, the definition should just be updated with different order of NICs (NICs are recognized by their MAC):

```

PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:25:57:2a:dc:cc",
      "model": "virtio",
      "runtime": null,
      "vlan": {
        "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
        "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
      }
    },
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": {
        "conf": "static",
        "ip": {
          "resource_uri": "/api/2.0/ips/94.26.101.182/",
          "uuid": "94.26.101.182"
        }
      }
    }
  ]
}

```



```

    },
    "ip_v6_conf": null,
    "mac": "22:cd:d0:81:97:c8",
    "model": "e1000",
    "runtime": null,
    "vlan": null
  }
],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

The resulting “nics” are:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": null,
      "ip_v6_conf": null,
      "mac": "22:25:57:2a:dc:cc",
      "model": "virtio",
      "runtime": null,
      "vlan": {
        "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
        "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
      }
    }
  ],
}

```

```

    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": {
        "conf": "static",
        "ip": {
          "resource_uri": "/api/2.0/ips/94.26.101.182/",
          "uuid": "94.26.101.182"
        }
      },
      "ip_v6_conf": null,
      "mac": "22:cd:d0:81:97:c8",
      "model": "e1000",
      "runtime": null,
      "vlan": null
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
  "vnc_password": "testserver"
}

```

Notice that the private and public NICs changed order compared to *Example 3*.

#### Example 5 - Delete a NIC and change type of the other:

In order to change a NIC from private to public just remove the “vlan” field and “ip\_v4\_conf” field. This can also be combined with deletion of the other interface. Using the NICs from *Example 4* here is how to delete the public NIC and change the private NIC to public:

```

PUT /api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,

```

```

"meta": {},
"name": "testServerAcc",
"nics": [
  {
    "ip_v4_conf": {
      "conf": "dhcp"
    },
    "mac": "22:25:57:2a:dc:cc"
  }
],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
"vnc_password": "testserver"
}

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

```

```

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "testServerAcc",
  "nics": [
    {
      "boot_order": null,
      "firewall_policy": null,
      "ip_v4_conf": {
        "conf": "dhcp",
        "ip": null
      },
      "ip_v6_conf": null,
      "mac": "22:25:57:2a:dc:cc",
      "model": "virtio",
      "runtime": null,
      "vlan": null
    }
  ]
}

```

```
    }
  ],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/3b3616df-16dc-4a49-bfca-5c2192e1f089/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "3b3616df-16dc-4a49-bfca-5c2192e1f089",
  "vnc_password": "testserver"
}
```

Notice that the NIC has the same MAC as the private NIC from *Example 4*, but is configured with DHCP.

## 18.1 VLAN

## 18.2 Allowed HTTP methods

Method	Description
GET	get / list VLANs
PUT	edit VLANs meta

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

## 18.3 Listing

### GET /vlans/

Gets the list of VLANs to which the authenticated user has access.

**statuscode 200** no error

### Example request:

```
GET /api/2.0/vlans/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "owner": {
```

```

        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/",
    "uuid": "96537817-f4b6-496b-a861-e74192d3ccb0"
}
]
}

```

## 18.4 Detailed listing

**GET** /vlans/detail/

statuscode 200 no error

**Example request:**

```

GET /api/2.0/vlans/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "bottom_vlan_tag": null,
      "grantees": [],
      "meta": {},
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
      "servers": [],
      "subscription": {
        "id": 12,
        "resource_uri": "/api/2.0/subscriptions/12/"
      },
      "tags": [],
      "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
    }
  ]
}

```

## 18.5 Get single VLAN

**GET** `/vlans/ (uuid: vlan_uuid) /`

**statuscode 200** no error

**Example request:**

```
GET /api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "bottom_vlan_tag": null,
  "grantees": [],
  "meta": {},
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
  "servers": [],
  "subscription": {
    "id": 12,
    "resource_uri": "/api/2.0/subscriptions/12/"
  },
  "tags": [],
  "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
}
```

## 18.6 Creating

New VLANs are created by buying a subscription. See Subscriptions.

## 18.7 Editing

Currently only VLAN meta field can be edited.

**PUT** `/vlans/ (uuid: vlan_uuid) /`

**statuscode 200** no error

**Example request:**

```
PUT /api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "meta": {
```

```
    "custom_field": "some custom data",
    "name": "my vlan"
  }
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "bottom_vlan_tag": null,
  "grantees": [],
  "meta": {
    "custom_field": "some custom data",
    "name": "my vlan"
  },
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/vlans/10619300-edda-42ba-91e0-7e3df0689d00/",
  "servers": [],
  "subscription": {
    "id": 12,
    "resource_uri": "/api/2.0/subscriptions/12/"
  },
  "tags": [],
  "uuid": "10619300-edda-42ba-91e0-7e3df0689d00"
}
```

## 18.8 Metadata

It is possible to add arbitrary key-value data to a VLAN definition. See [Objects' metadata field](#) for more information.

## 18.9 Deleting

Not applicable - The VLAN will disappear when the subscription for it expires.

## 18.10 Attaching To servers

A VLAN can be attached to multiple servers. See [Server Network Interfaces](#) for more information on using VLANs in NIC configurations.

### 18.10.1 IPs

The IP object, contains the actual IP in it's `uuid` attribute.



The list of IPs includes the IPs that are owned (subscribed to) by the user, and the IPs which are dynamically assigned to user's servers. The owned IP's are differentiated by dynamically received IPs by the fact that they have a subscription attached to them (their `subscription` attribute is not empty).

The detailed listing includes more information about the IP object, such as netmask, nameservers, and gateway which will be set on the NIC. The `netmask` value is in [CIDR notation](#) (/24 for a 255.255.255.0 mask). The `nameservers` attribute contains a list of DNS servers, which will be assigned through DHCP, and the `gateway` attribute contains the IP of the default gateway for the current IP.

## 18.11 Allowed HTTP methods

Method	Description
GET	get / list IPs
PUT	edit IP metadata

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

## 18.12 Listing

### GET /ips/

Gets the list of IPSs to which the authenticated user has access.

**statuscode 200** no error

#### Example request:

```
GET /api/2.0/ips/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/ips/185.12.6.183/",
      "server": null,
      "uuid": "185.12.6.183"
    }
  ]
}
```

## 18.13 Detailed listing

**GET** /ips/detail/

statuscode 200 no error

**Example request:**

```
GET /api/2.0/ips/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "gateway": "185.12.6.1",
      "grantees": [],
      "meta": {},
      "nameservers": [
        "69.194.139.62",
        "178.22.66.167",
        "178.22.71.56"
      ],
      "netmask": 24,
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "permissions": [],
      "resource_uri": "/api/2.0/ips/185.12.6.183/",
      "server": null,
      "subscription": {
        "id": 7273,
        "resource_uri": "/api/2.0/subscriptions/7273/"
      },
      "tags": [],
      "uuid": "185.12.6.183"
    }
  ]
}
```

## 18.14 Get single IP

**GET** /ips/ (uuid: ip\_uuid) /

statuscode 200 no error

**Example request:**

```
GET /api/2.0/ips/185.12.6.183/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "gateway": "185.12.6.1",
  "grantees": [],
  "meta": {},
  "nameservers": [
    "69.194.139.62",
    "178.22.66.167",
    "178.22.71.56"
  ],
  "netmask": 24,
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/ips/185.12.6.183/",
  "server": null,
  "subscription": {
    "id": 7273,
    "resource_uri": "/api/2.0/subscriptions/7273/"
  },
  "tags": [],
  "uuid": "185.12.6.183"
}
```

## 18.15 Creating

New IPs are created by buying a subscription. See Subscriptions.

## 18.16 Editing

Currently only IP meta field can be edited.

**PUT** /ips/ (uuid: *ip\_uuid*) /

statuscode 200 no error

**Example request:**

```
PUT /api/2.0/ips/185.12.6.183/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "meta": {
```

```
    "custom_field": "some custom data",
    "name": "my ip"
  }
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "gateway": "185.12.6.1",
  "grantees": [],
  "meta": {
    "custom_field": "some custom data",
    "name": "my ip"
  },
  "nameservers": [
    "69.194.139.62",
    "178.22.66.167",
    "178.22.71.56"
  ],
  "netmask": 24,
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/ips/185.12.6.183/",
  "server": null,
  "subscription": {
    "id": 7273,
    "resource_uri": "/api/2.0/subscriptions/7273/"
  },
  "tags": [],
  "uuid": "185.12.6.183"
}
```

## 18.17 Metadata

It is possible to add arbitrary key-value data to an IP definition. See [Objects' metadata field](#) for more information.

## 18.18 Deleting

Not applicable - The IP will disappear when the subscription for it expires.

## 18.19 Attaching To servers

An IP can be attached to a single server. To check whether IP is currently attached to a server look at the attribute on the object in the detailed listing or on single object retrieval. If `server` is empty, then the IP is not attached to a server and can be used for `static` IP configuration. See [Server Network Interfaces](#) for more information on using IPs in NIC configurations.

## 18.20 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "put"
  ],
  "allowed_list_http_methods": "get",
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "bottom_vlan_tag": {
      "default": null,
      "help_text": "Integer data. Ex: 2673",
      "readonly": true,
      "required": false,
      "type": "integer"
    },
    "grantees": {
      "default": "No default provided.",
      "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
      "readonly": false,
      "required": false,
      "type": "list"
    },
    "meta": {
      "default": {},
      "help_text": "User defined meta information",
      "readonly": false,
      "required": false,
      "type": "dict"
    },
    "owner": {
      "default": null,
      "help_text": "VLAN owner",
      "readonly": true,
      "required": false,
      "type": "related"
    },
    "permissions": {
      "default": "No default provided.",
      "help_text": "A list of data. Ex: ['abc', 26.73, 8]",
      "readonly": false,
      "required": false,
      "type": "list"
    },
    "resource_uri": {
      "default": "No default provided.",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "servers": {
      "default": [],

```

```
    "help_text": "Servers in this VLAN",
    "readonly": true,
    "required": false,
    "type": "related"
  },
  "subscription": {
    "default": null,
    "help_text": "Subscription related to this VLAN",
    "readonly": true,
    "required": false,
    "type": "related"
  },
  "tags": {
    "default": "No default provided.",
    "help_text": "Many related resources. Can be either a list of URIs or list of individual",
    "readonly": false,
    "required": false,
    "type": "related"
  },
  "uuid": {
    "default": null,
    "help_text": "VLAN UUID",
    "readonly": true,
    "required": true,
    "type": "string"
  }
},
"filtering": {
  "name": "exact",
  "name__contains": "exact",
  "tag": "exact",
  "uuid": "exact"
}
}
```

---

## Firewall Policies

---

### 19.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 19.2 Listing

#### GET /fwpolicies/

Gets the list of firewall policies to which the authenticated user has access.

##### Parameters

- **fields** – A set of field names specifying the returned fields

##### Status Codes

- **200** – no error

##### Example request:

```
GET /api/2.0/fwppolicies/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

##### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "meta": {},
```

```

        "name": null,
        "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "resource_uri": "/api/2.0/fwpolices/1973b795-343c-421b-bd97-fa7471fc6491/",
        "uuid": "1973b795-343c-421b-bd97-fa7471fc6491"
    },
    {
        "meta": {},
        "name": "My awesome policy",
        "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "resource_uri": "/api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/",
        "uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
    }
]
}

```

## 19.3 Detailed listing

### GET /fwpolices/detail/

Gets a detailed list of firewall policies to which the authenticated user has access.

#### Status Codes

- 200 – no error

#### Example request:

```

GET /api/2.0/fwpolices/detail/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "meta": {},
      "name": null,
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/fwpolices/1973b795-343c-421b-bd97-fa7471fc6491/",
      "rules": [],

```



```

"servers": [],
"tags": [],
"uuid": "1973b795-343c-421b-bd97-fa7471fc6491"
},
{
  "meta": {},
  "name": "My awesome policy",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/",
  "rules": [
    {
      "action": "drop",
      "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
      "direction": "out",
      "dst_ip": "23.0.0.0/32",
      "dst_port": null,
      "ip_proto": null,
      "src_ip": null,
      "src_port": null
    },
    {
      "action": "accept",
      "comment": "Allow SSH traffic to the VM from our office in Dubai",
      "direction": "in",
      "dst_ip": null,
      "dst_port": "22",
      "ip_proto": "tcp",
      "src_ip": "172.66.32.0/24",
      "src_port": null
    },
    {
      "action": "drop",
      "comment": "Drop all other SSH traffic to the VM",
      "direction": "in",
      "dst_ip": null,
      "dst_port": "22",
      "ip_proto": "tcp",
      "src_ip": null,
      "src_port": null
    },
    {
      "action": "drop",
      "comment": "Drop all UDP traffic to the VM, not originating from 172.66.32.5",
      "direction": "in",
      "dst_ip": null,
      "dst_port": null,
      "ip_proto": "udp",
      "src_ip": "!172.66.32.55/32",
      "src_port": null
    },
    {
      "action": "drop",
      "comment": "Drop any traffic, to the VM with destination port not between 1-
      "direction": "in",
      "dst_ip": null,

```

```

        "dst_port": "!1:1024",
        "ip_proto": "tcp",
        "src_ip": null,
        "src_port": null
      }
    ],
    "servers": [],
    "tags": [],
    "uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
  }
]
}

```

## 19.4 Create

### POST /fwpolicies/

Creates a firewall policy.

#### Status Codes

- 201 – no error

#### Example request - minimal:

```

POST /api/2.0/fwpolices/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {}
  ]
}

```

#### Example response - minimal:

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "meta": {},
      "name": null,
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/fwpolices/1973b795-343c-421b-bd97-fa7471fc6491/",
      "rules": [],
      "servers": [],
      "tags": [],
      "uuid": "1973b795-343c-421b-bd97-fa7471fc6491"
    }
  ]
}

```

This is the minimal data required to create a policy. It is blank one ( does not contain any rules ), but you can use it to attach it to a couple of servers and edit it later to match your needs.

#### Example request - full:

```
POST /api/2.0/fwpolices/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "name": "My awesome policy",
      "rules": [
        {
          "action": "drop",
          "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
          "direction": "out",
          "dst_ip": "23"
        },
        {
          "action": "accept",
          "comment": "Allow SSH traffic to the VM from our office in Dubai",
          "direction": "in",
          "dst_port": "22",
          "ip_proto": "tcp",
          "src_ip": "172.66.32.0/24"
        },
        {
          "action": "drop",
          "comment": "Drop all other SSH traffic to the VM",
          "direction": "in",
          "dst_port": "22",
          "ip_proto": "tcp"
        },
        {
          "action": "drop",
          "comment": "Drop all UDP traffic to the VM, not originating from 172.66.32.55",
          "direction": "in",
          "ip_proto": "udp",
          "src_ip": "!172.66.32.55"
        },
        {
          "action": "drop",
          "comment": "Drop any traffic, to the VM with destination port not between 1-1024",
          "direction": "in",
          "dst_port": "!1:1024",
          "ip_proto": "tcp"
        }
      ]
    }
  ]
}
```

#### Example response - full:

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8
```

```

{
  "objects": [
    {
      "meta": {},
      "name": "My awesome policy",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/",
      "rules": [
        {
          "action": "drop",
          "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
          "direction": "out",
          "dst_ip": "23.0.0.0/32",
          "dst_port": null,
          "ip_proto": null,
          "src_ip": null,
          "src_port": null
        },
        {
          "action": "accept",
          "comment": "Allow SSH traffic to the VM from our office in Dubai",
          "direction": "in",
          "dst_ip": null,
          "dst_port": "22",
          "ip_proto": "tcp",
          "src_ip": "172.66.32.0/24",
          "src_port": null
        },
        {
          "action": "drop",
          "comment": "Drop all other SSH traffic to the VM",
          "direction": "in",
          "dst_ip": null,
          "dst_port": "22",
          "ip_proto": "tcp",
          "src_ip": null,
          "src_port": null
        },
        {
          "action": "drop",
          "comment": "Drop all UDP traffic to the VM, not originating from 172.66.32.55",
          "direction": "in",
          "dst_ip": null,
          "dst_port": null,
          "ip_proto": "udp",
          "src_ip": "!172.66.32.55/32",
          "src_port": null
        },
        {
          "action": "drop",
          "comment": "Drop any traffic, to the VM with destination port not between 1-1024",
          "direction": "in",
          "dst_ip": null,
          "dst_port": "!1:1024",
          "ip_proto": "tcp",

```

```

        "src_ip": null,
        "src_port": null
      }
    ],
    "servers": [],
    "tags": [],
    "uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
  }
]
}

```

This is a more useful firewall policy. The rules are applied in the order they are stated.

---

#### Note:

- The IP and port fields support "!" prefix, which specifies "NOT" ( ex. "!192.168.1.1" ).
  - You can specify port ranges with ":" ( ex. "1:1024" or "!1:1024" )
  - The IP fields support subnet definition using the CIDR notation ( ex. "192.168.1.1/24" )
- 

## 19.5 Editing

**PUT** /fwpolicies/{uuid}/

Update an existing firewall policy

**Warning:** Changes are applied every 30 seconds to all running servers with nics that have the policy attached.

#### Status Codes

- 200 – no error

#### Example policy:

```

{
  "meta": {},
  "name": "My awesome policy",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/fwppolicies/ffc71b41-4ce8-4eda-98f8-24c1bd808928/",
  "rules": [
    {
      "action": "drop",
      "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
      "direction": "out",
      "dst_ip": "23.0.0.0/32",
      "dst_port": null,
      "ip_proto": null,
      "src_ip": null,
      "src_port": null
    },
    {
      "action": "accept",

```

```

        "comment": "Allow SSH traffic to the VM from our office in Dubai",
        "direction": "in",
        "dst_ip": null,
        "dst_port": "22",
        "ip_proto": "tcp",
        "src_ip": "172.66.32.0/24",
        "src_port": null
    },
    {
        "action": "drop",
        "comment": "Drop all other SSH traffic to the VM",
        "direction": "in",
        "dst_ip": null,
        "dst_port": "22",
        "ip_proto": "tcp",
        "src_ip": null,
        "src_port": null
    },
    {
        "action": "drop",
        "comment": "Drop all UDP traffic to the VM, not originating from 172.66.32.55",
        "direction": "in",
        "dst_ip": null,
        "dst_port": null,
        "ip_proto": "udp",
        "src_ip": "!172.66.32.55/32",
        "src_port": null
    },
    {
        "action": "drop",
        "comment": "Drop any traffic, to the VM with destination port not between 1-1024",
        "direction": "in",
        "dst_ip": null,
        "dst_port": "!1:1024",
        "ip_proto": "tcp",
        "src_ip": null,
        "src_port": null
    }
],
"servers": [],
"tags": [],
"uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
}

```

**Update request:**

```

PUT /api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "meta": {},
  "name": "My awesome policy",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/"
}

```

```

    "rules": [
      {
        "action": "drop",
        "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
        "direction": "out",
        "dst_ip": "23.0.0.0/32",
        "dst_port": null,
        "ip_proto": null,
        "src_ip": null,
        "src_port": null
      }
    ],
    "servers": [],
    "tags": [],
    "uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
  }

```

**Update response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {},
  "name": "My awesome policy",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/",
  "rules": [
    {
      "action": "drop",
      "comment": "Drop traffic from the VM to IP address 23.0.0.0/32",
      "direction": "out",
      "dst_ip": "23.0.0.0/32",
      "dst_port": null,
      "ip_proto": null,
      "src_ip": null,
      "src_port": null
    }
  ],
  "servers": [],
  "tags": [],
  "uuid": "ffc71b41-4ce8-4eda-98f8-24c1bd808928"
}

```

## 19.6 Delete

**DELETE** /fwpolices/{uuid}/

Delete a firewall policy

**Warning:** Only policies attached to servers in status **stopped** can be deleted.**Status Codes**

- **204** – no content, object is deleted

**Example request:**

```
DELETE /api/2.0/fwpolices/ffc71b41-4ce8-4eda-98f8-24c1bd808928/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZ1IG10IDop
```

**Example response:**

```
HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8
```

## 19.7 Attach policy to a server

Attaching a policy is done by specifying the policy *uuid* in the field *firewall\_policy* on the server's NIC, using the *create* or *edit* server calls

```
{
  "cpu": 1000,
  "mem": 536870912,
  "name": "FirewalledServer",
  "nics": [
    {
      "firewall_policy": "abb98bcb-2d3c-4758-b59c-3094b54b5c9e",
      "ip_v4_conf": {
        "conf": "dhcp",
        "ip": null
      },
      "model": "virtio"
    }
  ],
  "vnc_password": "testserver"
}
```

**Warning:** Firewall policies are only applied when attached to your server's public network interfaces.

## 19.8 Default network restrictions

Depending on your account's current state, the following network restrictions are applied to the public interfaces of your running servers:

- **regular** - for *REGULAR* users:

**Running servers have limits set on originating broadcast and multicast traffic:**

- broadcast - limited to 5 packets/second with burst of 100
- multicast - limited to 10 packets/second with burst of 100

- **no\_outgoing\_email** - for new *REGULAR* users: Same as **regular**, but users cannot send emails from running servers.
- **trial** - for *TRIAL* users: Applies **regular** restrictions plus running servers cannot open communication channels to ports 22, 23, 25, 7777, 43594, 43595 and 25565



- **guest - for GUEST and NEW users:** Applies **regular** restrictions plus running servers can only send ICMP requests, request a DHCP IP, query a DNS server and send requests to TCP port 80 and 443 ( usually HTTP and HTTPS )

Please contact support if any of these restrictions breaks your workflow. You can check your effective network restrictions via the **network\_restrictions** field on the *user profile*

**Note:** When converting from one user type to another, restrictions are automatically adjusted - no need to powercycle your running servers.

## 19.9 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "put",
    "delete"
  ],
  "allowed_list_http_methods": [
    "get",
    "put",
    "delete",
    "post"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "meta": {
      "default": {},
      "help_text": "User assigned meta information for this policy",
      "readonly": false,
      "required": false,
      "type": "dict"
    },
    "name": {
      "default": null,
      "help_text": "Human readable name of the firewall policy",
      "readonly": false,
      "required": false,
      "type": "string"
    },
    "owner": {
      "default": null,
      "help_text": "Owner of the policy",
      "readonly": true,
      "required": false,
      "type": "related"
    },
    "resource_uri": {
      "default": "No default provided.",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "readonly": true,

```

```
        "required": true,
        "type": "string"
    },
    "rules": {
        "default": [],
        "fields": {
            "action": {
                "choices": [
                    "drop",
                    "accept"
                ],
                "default": null,
                "help_text": "Action to be taken",
                "readonly": false,
                "required": true,
                "type": "string"
            },
            "comment": {
                "default": null,
                "help_text": "Optional rule comment",
                "readonly": false,
                "required": false,
                "type": "string"
            },
            "direction": {
                "choices": [
                    "in",
                    "out",
                    "both"
                ],
                "default": null,
                "help_text": "Packet direction",
                "readonly": false,
                "required": true,
                "type": "string"
            },
            "dst_ip": {
                "default": null,
                "help_text": "Destination IP address",
                "readonly": false,
                "required": false,
                "type": "string"
            },
            "dst_port": {
                "default": null,
                "help_text": "Destination port",
                "readonly": false,
                "required": false,
                "type": "string"
            },
            "ip_proto": {
                "choices": [
                    "tcp",
                    "udp"
                ],
                "default": null,
                "help_text": "IP protocol",
                "readonly": false,
```

```

        "required": false,
        "type": "string"
    },
    "src_ip": {
        "default": null,
        "help_text": "Source IP address",
        "readonly": false,
        "required": false,
        "type": "string"
    },
    "src_port": {
        "default": null,
        "help_text": "Source port",
        "readonly": false,
        "required": false,
        "type": "string"
    }
},
"help_text": "List of rules to be applied for this policy",
"readonly": false,
"required": false,
"type": "related"
},
"servers": {
    "default": [],
    "help_text": "Servers which have nics with this policy applied",
    "readonly": true,
    "required": false,
    "type": "related"
},
"tags": {
    "default": "No default provided.",
    "help_text": "Many related resources. Can be either a list of URIs or list of indivi
    "readonly": false,
    "required": false,
    "type": "related"
},
"uuid": {
    "default": null,
    "help_text": "UUID of the policy",
    "readonly": true,
    "required": true,
    "type": "string"
}
},
"filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
}
}

```



## 20.1 Allowed HTTP methods

Method	Description
GET	get / list object/s
POST	create new object/s
PUT	update / modify object/s
DELETE	delete object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

## 20.2 Listing

**GET** /tags/

Gets the list of tags to which the authenticated user has access.

**statuscode 200** no error

**Example request:**

```
GET /api/2.0/tags/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDpp
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 2
  },
  "objects": [
    {
      "meta": {},
      "name": "MyGroupOfThings",
```

```

    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/tags/7b102579-e850-47cf-adf9-9c1a499b08f8/",
    "resources": [],
    "uuid": "7b102579-e850-47cf-adf9-9c1a499b08f8"
  },
  {
    "meta": {},
    "name": "TagCreatedWithResource",
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "resource_uri": "/api/2.0/tags/c91f7742-e3b9-4794-a178-f0831ee1d3d2/",
    "resources": [
      {
        "owner": {
          "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
          "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "res_type": "vlans",
        "resource_uri": "/api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/",
        "uuid": "96537817-f4b6-496b-a861-e74192d3ccb0"
      },
      {
        "owner": {
          "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
          "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "res_type": "drives",
        "resource_uri": "/api/2.0/drives/08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd/",
        "uuid": "08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd"
      },
      {
        "owner": {
          "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
          "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "res_type": "servers",
        "resource_uri": "/api/2.0/servers/cdeca2cf-4628-4169-8a3a-ceed9ea3a/",
        "uuid": "cdeca2cf-4628-4169-8a3a-ceed9ea3a"
      },
      {
        "owner": {
          "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
          "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },
        "res_type": "servers",
        "resource_uri": "/api/2.0/servers/f52db291-f754-4434-acac-77268cbac94f/",
        "uuid": "f52db291-f754-4434-acac-77268cbac94f"
      },
      {
        "owner": {
          "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
          "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
        },

```

```

        "res_type": "ips",
        "resource_uri": "/api/2.0/ips/185.12.6.183/",
        "uuid": "185.12.6.183"
      },
    ],
    "uuid": "c91f7742-e3b9-4794-a178-f0831ee1d3d2"
  }
}

```

## 20.3 List single tag

**GET** /tag/ (uuid: tag\_uuid) /

Gets detailed information for tag identified by *tag\_uuid*.

**statuscode 200** no error

**Example request:**

```

GET /api/2.0/tags/c66a2113-be9b-4157-93ac-fb8c0e82087c/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcncZlIGl0IDop

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {},
  "name": "TagCreatedWithResource",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/tags/c91f7742-e3b9-4794-a178-f0831ee1d3d2/",
  "resources": [
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "res_type": "vlans",
      "resource_uri": "/api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/",
      "uuid": "96537817-f4b6-496b-a861-e74192d3ccb0"
    },
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "res_type": "drives",
      "resource_uri": "/api/2.0/drives/08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd/",
      "uuid": "08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd"
    },
    {

```

```

    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "servers",
    "resource_uri": "/api/2.0/servers/cdeca2cf-4628-4169-8a3a-ceedd9ea3a/",
    "uuid": "cdeca2cf-4628-4169-8a3a-ceedd9ea3a"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "servers",
    "resource_uri": "/api/2.0/servers/f52db291-f754-4434-acac-77268cbac94f/",
    "uuid": "f52db291-f754-4434-acac-77268cbac94f"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "ips",
    "resource_uri": "/api/2.0/ips/185.12.6.183/",
    "uuid": "185.12.6.183"
  }
],
"uuid": "c91f7742-e3b9-4794-a178-f0831ee1d3d2"
}

```

## 20.4 Creating

### POST /tags/

Creates a new tag or multiple tags.

**statuscode 201** object created

#### Example request:

```

POST /api/2.0/tags/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "name": "MyGroupOfThings"
    }
  ]
}

```

#### Example response:

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

```



```
{
  "objects": [
    {
      "meta": {},
      "name": "MyGroupOfThings",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/tags/7b102579-e850-47cf-adf9-9c1a499b08f8/",
      "resources": [],
      "uuid": "7b102579-e850-47cf-adf9-9c1a499b08f8"
    }
  ]
}
```

It is possible to add resources to a tag at creation time. Just specify their UUIDs the *resources* list:

#### Example request:

```
POST /api/2.0/tags/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

```
{
  "objects": [
    {
      "name": "TagCreatedWithResource",
      "resources": [
        "401d5ba4-6544-47ef-bf61-54baf59d871",
        "3576136a-0a7e-4ece-8050-f2e408fbca96",
        "9214aa22-10db-4aff-92f2-779a043b13c7",
        "94.26.101.182",
        "10619300-edda-42ba-91e0-7e3df0689d00"
      ]
    }
  ]
}
```

#### Example response:

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "meta": {},
      "name": "TagCreatedWithResource",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": "/api/2.0/tags/c91f7742-e3b9-4794-a178-f0831ee1d3d2/",
      "resources": [
        {
          "owner": {
            "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
            "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
          }
        }
      ]
    }
  ]
}
```

```

    },
    "res_type": "vlans",
    "resource_uri": "/api/2.0/vlans/96537817-f4b6-496b-a861-e74192d3ccb0/",
    "uuid": "96537817-f4b6-496b-a861-e74192d3ccb0"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "drives",
    "resource_uri": "/api/2.0/drives/08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd/",
    "uuid": "08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "servers",
    "resource_uri": "/api/2.0/servers/cdeca2cf-4628-4169-8a3a-ceed9ea3a/",
    "uuid": "cdeca2cf-4628-4169-8a3a-ceed9ea3a"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "servers",
    "resource_uri": "/api/2.0/servers/f52db291-f754-4434-acac-77268cbac94f/",
    "uuid": "f52db291-f754-4434-acac-77268cbac94f"
  },
  {
    "owner": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "res_type": "ips",
    "resource_uri": "/api/2.0/ips/185.12.6.183/",
    "uuid": "185.12.6.183"
  }
],
"uuid": "c91f7742-e3b9-4794-a178-f0831ee1d3d2"
}
]
}

```

## 20.5 Editing

**PUT** /tags/{uuid}/

Edits a tag. It is possible to add or remove resources to a tag by replacing the *resources* list with a new one:

**statuscode 200** no error

**Example request:**

```

PUT /api/2.0/tags/c66a2113-be9b-4157-93ac-fb8c0e82087c/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "name": "TagCreatedWithResource",
  "resources": [
    "a15d7e36-a392-4328-9cb1-616c9107eb26",
    "9214aa22-10db-4aff-92f2-779a043b13c7"
  ]
}

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {},
  "name": "TagCreatedWithResource",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "resource_uri": "/api/2.0/tags/c91f7742-e3b9-4794-a178-f0831ee1d3d2/",
  "resources": [
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "res_type": "drives",
      "resource_uri": "/api/2.0/drives/08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd/",
      "uuid": "08b9874a-4b2c-4c33-a06e-bed5e0bfa6fd"
    },
    {
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "res_type": "snapshots",
      "resource_uri": "/api/2.0/snapshots/00fc1dd8-893b-4b51-b859-8d5f1ef0cf7f/",
      "uuid": "00fc1dd8-893b-4b51-b859-8d5f1ef0cf7f"
    }
  ],
  "uuid": "c91f7742-e3b9-4794-a178-f0831ee1d3d2"
}

```

It is also possible to edit the tags on the resource itself by replacing the *tags* list. For example here is how to add a tag from a server:

**Example request:**

```

PUT /api/2.0/servers/3576136a-0a7e-4ece-8050-f2e408fbca96/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "context": true,

```

```

"cpu": 1000,
"cpu_model": null,
"cpu_type": "amd",
"cpus_instead_of_cores": false,
"drives": [],
"enable_numa": false,
"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 536870912,
"meta": {},
"name": "test_server2",
"nics": [],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/3576136a-0a7e-4ece-8050-f2e408fbca96/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [
  "00f4ea87-891c-4ee9-a28f-21e25b96dd48",
  "c66a2113-be9b-4157-93ac-fb8c0e82087c"
],
"uuid": "3576136a-0a7e-4ece-8050-f2e408fbca96",
"vnc_password": "pass"
}

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {},
  "name": "test_server2",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  }
}

```

```

    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/3576136a-0a7e-4ece-8050-f2e408fbca96/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [
      {
        "resource_uri": "/api/2.0/tags/00f4ea87-891c-4ee9-a28f-21e25b96dd48/",
        "uuid": "00f4ea87-891c-4ee9-a28f-21e25b96dd48"
      },
      {
        "resource_uri": "/api/2.0/tags/c66a2113-be9b-4157-93ac-fb8c0e82087c/",
        "uuid": "c66a2113-be9b-4157-93ac-fb8c0e82087c"
      }
    ],
    "uuid": "3576136a-0a7e-4ece-8050-f2e408fbca96",
    "vnc_password": "pass"
  }
}

```

## 20.6 Deleting

**DELETE** /tags/{uuid}/

Deletes a single tag.

**statuscode 204** No content, object deletion started.

**Example request:**

```

DELETE /api/2.0/tags/00f4ea87-891c-4ee9-a28f-21e25b96dd48/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDdp

```

**Example response:**

```

HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8

```

## 20.7 Filter Servers, Drives, IPs or VLANs listing by tag

**GET** /tags/{uuid}/{resource\_type}/

Lists the objects of the given *resource\_type* which is one of 'servers', 'drives', 'ips', 'vlans'.

**statuscode 200** no error

**Example request:**

```

GET /api/2.0/tags/7b102579-e850-47cf-adf9-9c1a499b08f8/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDdp

```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "name": "test_server2",
      "owner": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "resource_uri": {
        "resource_uri": "/api/2.0/servers/cdeca2cf-4628-4169-8a3a-ceedd9ea3a/",
        "uuid": "cdeca2cf-4628-4169-8a3a-ceedd9ea3a"
      },
      "runtime": null,
      "status": "stopped",
      "uuid": "cdeca2cf-4628-4169-8a3a-ceedd9ea3a"
    }
  ]
}
```

---

## ACLs (Access Control Lists)

---

Access Control Lists (ACLs) can be used to grant permissions to another user to manage your resources. For example it is possible to permit another user to start or stop your servers or to allow another user to connect their servers to your private network (VLAN).

Permissions can be granted on servers, drives, network resources, and firewall policies. All of these resources support `LIST` and `EDIT` permissions, which respectively allow the grantee to see the resources when listing them and to edit resources. When a user is granted a `LIST` permission, this resource appears in the grantee's resource list. For example granting `LIST` on a drive will make it appear in the list with grantees drives, when they make a `GET` request to `/drives`. Own resources can be differentiated from granted resources, by the `owner` field.

Some resources have additional permissions. Drives have `ATTACH` permission which allows another user to use the drive on their server. IPs, VLANs, and Firewall policies have `ATTACH` which will allow another user to assign these network resource to NICs on their server. Servers have `START` and `STOP`, `OPEN_VNC` permissions which allow another user to start or stop the server, or to open the server console through VNC. Note that ACLs may contain permissions that are not directly applicable on some resources, for example it is possible to have `STOP` permission in an ACL on tag which refers only to drives. Drives and servers support `CLONE` permission, which allows cloning them to the grantee account. Note that in order to clone someone else's server, you need `CLONE` permission on both the owner's server, and on the attached non-cdrom drives. For cdrom drives, the user will need a `ATTACH` permission. The table below summarizes the permissions applicable to each resource:

Resource	Permissions
Server	<code>LIST EDIT CLONE START STOP OPEN_VNC</code>
Drive	<code>LIST EDIT CLONE ATTACH</code>
IP, VLAN, Firewall Policy	<code>LIST EDIT ATTACH</code>

ACLs are granted on tags, and apply for all the tagged resources. One ACL can be attached to multiple tags, and will apply to the set of all resources tagged by these tags. It is also possible to have multiple ACLs on a tag, in which case the permissions on the tagged resources are the combination of all ACLs rules.

Each ACL can have one or more grantee users. Each ACL object has a list of rules, which specify what permission are given by the ACL.

Permissions are not transferable to third parties, i.e. if you grant permission to someone, they can't grant it to a third user. Only owners can grant permissions.

## 21.1 Allowed HTTP methods

Method	Description
GET	get / list object/s
POST	create new object/s
PUT	update / modify object/s
DELETE	delete object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

## 21.2 Listing

### GET /acls/

Gets the list of ACLs defined by the authenticated user.

**statusCode 200** no error

#### Example request:

```
GET /api/2.0/acls/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 3
  },
  "objects": [
    {
      "grantees": [
        {
          "email": "user2@example.com",
          "resource_uri": {
            "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
            "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
          },
          "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
        }
      ],
      "meta": {},
      "name": "shared_acl",
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "resource_uri": "/api/2.0/acls/d29837e8-27ea-46e8-8b46-843d0df50a82/",
      "rules": [
```



```

    {
      "permission": "ATTACH"
    },
    {
      "permission": "OPEN_VNC"
    },
    {
      "permission": "LIST"
    },
    {
      "permission": "EDIT"
    },
    {
      "permission": "DELETE"
    },
    {
      "permission": "START"
    },
    {
      "permission": "STOP"
    },
    {
      "permission": "CLONE"
    }
  ],
  "tags": [],
  "uuid": "d29837e8-27ea-46e8-8b46-843d0df50a82"
},
{
  "grantees": [
    {
      "email": "user2@example.com",
      "resource_uri": {
        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
      },
      "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
    }
  ],
  "meta": {},
  "name": "shared_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "resource_uri": "/api/2.0/acls/58aa5d82-e890-44db-8cb8-fe3a2f159320/",
  "rules": [
    {
      "permission": "ATTACH"
    },
    {
      "permission": "OPEN_VNC"
    },
    {
      "permission": "LIST"
    },
    {
      "permission": "EDIT"
    }
  ]
}

```

```

    },
    {
      "permission": "DELETE"
    },
    {
      "permission": "START"
    },
    {
      "permission": "STOP"
    },
    {
      "permission": "CLONE"
    }
  ],
  "tags": [],
  "uuid": "58aa5d82-e890-44db-8cb8-fe3a2f159320"
},
{
  "grantees": [],
  "meta": {},
  "name": "test_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
  },
  "resource_uri": "/api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/",
  "rules": [],
  "tags": [],
  "uuid": "adf048e8-5445-47cf-a09c-fc3cfb2c823f"
}
]
}

```

## 21.3 List Single ACL

**GET** `/acls/(uuid: acl_uuid) /`

Gets detailed information for an ACL identified by `acl_uuid`.

**statuscode 200** no error

**Example request:**

```

GET /api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "grantees": [
    {
      "email": "user@example.com",
      "resource_uri": {

```

```

        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
}
],
"meta": {},
"name": "test_acl",
"owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
},
"resource_uri": "/api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/",
"rules": [
    {
        "permission": "LIST"
    },
    {
        "permission": "EDIT"
    }
],
"tags": [
    {
        "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
        "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    },
    {
        "resource_uri": "/api/2.0/tags/5a9e6f2b-7927-4f30-88b5-0cc939208549/",
        "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
    }
],
"uuid": "adf048e8-5445-47cf-a09c-fc3cfb2c823f"
}

```

## 21.4 Creating

### POST /acls/

Creates a new ACL.

**statusCode 201** object created

#### Example request:

```

POST /api/2.0/acls/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "grantees": [],
      "name": "test_acl",
      "rules": [],
      "tags": []
    }
  ]
}

```

```
]
}
```

**Example response:**

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "grantees": [],
      "meta": {},
      "name": "test_acl",
      "owner": {
        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
      },
      "resource_uri": "/api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/",
      "rules": [],
      "tags": [],
      "uuid": "adf048e8-5445-47cf-a09c-fc3cfb2c823f"
    }
  ]
}
```

It is possible to define the grantees, tags and rules at creation time. Just specify their UUIDs the *grantees* list:

**Example request:**

```
POST /api/2.0/acls/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "grantees": [
        {
          "email": "user@example.com",
          "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
        }
      ],
      "name": "test_with_grantees",
      "rules": [
        {
          "permission": "LIST"
        },
        {
          "permission": "EDIT"
        }
      ],
      "tags": [
        {
          "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
        },
        {
          "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
        }
      ]
    }
  ]
}
```

```

    ]
  }
]
}

```

**Example response:**

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "grantees": [
        {
          "email": "user@example.com",
          "resource_uri": {
            "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
            "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
          },
          "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
        }
      ],
      "meta": {},
      "name": "test_with_grantees",
      "owner": {
        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
      },
      "resource_uri": "/api/2.0/acls/49134280-55ed-4f4e-815c-85c6dd3ab322/",
      "rules": [
        {
          "permission": "LIST"
        },
        {
          "permission": "EDIT"
        }
      ],
      "tags": [
        {
          "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
          "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
        },
        {
          "resource_uri": "/api/2.0/tags/5a9e6f2b-7927-4f30-88b5-0cc939208549/",
          "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
        }
      ],
      "uuid": "49134280-55ed-4f4e-815c-85c6dd3ab322"
    }
  ]
}

```

## 21.5 Editing

**PUT /acls/{uuid}/**

Edits an ACL.

**statusCode 200** no error

**Example request:**

```
PUT /api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "grantees": [
    {
      "email": "user@example.com",
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    }
  ],
  "meta": {},
  "name": "test_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
  },
  "resource_uri": "/api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/",
  "rules": [
    {
      "permission": "LIST"
    },
    {
      "permission": "EDIT"
    }
  ],
  "tags": [
    {
      "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    },
    {
      "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
    }
  ],
  "uuid": "adf048e8-5445-47cf-a09c-fc3cfb2c823f"
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "grantees": [
    {
      "email": "user@example.com",
      "resource_uri": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      },
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    }
  ],
  "meta": {},
```

```

"name": "test_acl",
"owner": {
  "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
  "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
},
"resource_uri": "/api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/",
"rules": [
  {
    "permission": "LIST"
  },
  {
    "permission": "EDIT"
  }
],
"tags": [
  {
    "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
    "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
  },
  {
    "resource_uri": "/api/2.0/tags/5a9e6f2b-7927-4f30-88b5-0cc939208549/",
    "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
  }
],
"uuid": "adf048e8-5445-47cf-a09c-fc3cfb2c823f"
}

```

## 21.6 Deleting

**DELETE** /acls/{uuid}/

Deletes a single ACL.

**statuscode 204** No content, object deletion started.

**Example request:**

```

DELETE /api/2.0/acls/adf048e8-5445-47cf-a09c-fc3cfb2c823f/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

**Example response:**

```

HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8

```

## 21.7 Full Example of Sharing a Resource

First let's create a tag which will be shared with another user:

**Request:**

```

POST /api/2.0/tags/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```
{
  "objects": [
    {
      "name": "test_TagOne"
    }
  ]
}
```

**Response:**

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "meta": {},
      "name": "test_TagOne",
      "owner": {
        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
      },
      "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
      "resources": [],
      "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    }
  ]
}
```

Let's create a drive tagged with the new tag:

**Request:**

```
POST /api/2.0/drives/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "media": "disk",
      "name": "test_drive_acl",
      "size": 2147483648,
      "tags": [
        "6d302107-fc0b-433a-99b1-9f2d3692eefc"
      ]
    }
  ]
}
```

**Response:**

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],

```



```

    "allow_multimount": false,
    "grantees": [],
    "jobs": [],
    "licenses": [],
    "media": "disk",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_acl",
    "owner": {
      "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
      "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 2147483648,
    "snapshots": [],
    "status": "creating",
    "storage_type": "dssd",
    "tags": [
      {
        "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
        "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
      }
    ],
    "uuid": "ac5ca635-d119-4dda-b27a-fa5a69fc17da"
  }
]
}

```

It is also possible to tag an existing drive. Since there is no ACL on the tag, the `grantees` attribute of the drive is empty.

Now let's add the tag to an ACL. Notice that we may add several tags to the ACL:

**Request:**

```

POST /api/2.0/acls/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "grantees": [
        {
          "email": "user@example.com",
          "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
        }
      ],
      "name": "test_with_grantees",
      "rules": [
        {
          "permission": "LIST"
        }
      ]
    }
  ]
}

```

```

    {
      "permission": "EDIT"
    }
  ],
  "tags": [
    {
      "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    },
    {
      "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
    }
  ]
}
]
}

```

**Response:**

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "grantees": [
        {
          "email": "user@example.com",
          "resource_uri": {
            "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
            "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
          },
          "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
        }
      ],
      "meta": {},
      "name": "test_with_grantees",
      "owner": {
        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
      },
      "resource_uri": "/api/2.0/acls/49134280-55ed-4f4e-815c-85c6dd3ab322/",
      "rules": [
        {
          "permission": "LIST"
        },
        {
          "permission": "EDIT"
        }
      ],
      "tags": [
        {
          "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
          "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
        },
        {
          "resource_uri": "/api/2.0/tags/5a9e6f2b-7927-4f30-88b5-0cc939208549/",
          "uuid": "5a9e6f2b-7927-4f30-88b5-0cc939208549"
        }
      ]
    }
  ],
}

```

```

    "uuid": "49134280-55ed-4f4e-815c-85c6dd3ab322"
  }
]
}

```

If we get the drive definition we will see the grantee in the grantees attribute:

```

GET /api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [
    {
      "permissions": [
        "EDIT",
        "LIST"
      ],
      "user": {
        "email": null,
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      }
    }
  ],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 2147483648,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [
    {
      "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
      "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    }
  ],
  "uuid": "ac5ca635-d119-4dda-b27a-fa5a69fc17da"
}

```

```
}

```

Since there is an ACL on the the tag all resources created with this tag will be shared. For example if we create a server with the same tag, we see that it also shows grantees:

```
POST /api/2.0/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "objects": [
    {
      "cpu": 1000,
      "mem": 536870912,
      "name": "test_server",
      "tags": [
        "6d302107-fc0b-433a-99b1-9f2d3692eefc"
      ],
      "vnc_password": "pass"
    }
  ]
}
```

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [],
      "enable_numa": false,
      "grantees": [
        {
          "permissions": [
            "EDIT",
            "LIST"
          ],
          "user": {
            "email": "user@example.com",
            "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
            "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
          }
        }
      ],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 536870912,
      "meta": {},
      "name": "test_server",
      "nics": [],
      "owner": {
```

```

        "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
        "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/e97f8858-4c59-476f-b7e6-08ec2ec85582/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [
        {
            "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
            "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
        }
    ],
    "uuid": "e97f8858-4c59-476f-b7e6-08ec2ec85582",
    "vnc_password": "pass"
}
]
}

```

## 21.8 Permissions on Resources Attached to a Server

When updating another user's server, the attached resources, such as drives, IPs, VLANs, or firewall policies, should be available for the server owner. This means that either the attached resource should be owned by the server owner, or the owner should be given ATTACH permission on the attached resource. For example if user A shares a server with EDIT permission to user B, and user B wants to attach their drive on the server, user B will have to grant ATTACH permission on the drive, so that the owner of the server is able to start it. Trying to attach a drive, on which there is no permission for the owner of the server will result in an error.

## 21.9 Recognizing Shared Resources and What Permissions Are Given on Them

### 21.9.1 Finding out which resources were shared with you

Resources shared with you appear in the resource list along with your own resources. In order to differentiate between owner, and shared with you resources you have to look at the `owner` field. If the user is the same as you, the resource is yours. Non-owned resource have their respective owner uuid in the `owner` field. The examples in the next two subsections show the same drive from the view point of permission grantor and grantee. Notice how `owner` is the same.

### 21.9.2 Finding what permissions are granted to you on a resource

While it is possible to follow the ACL-tag-resource graph to find out what are the resulting permissions on a resource, it hard to do so in a simple script. That is why each resource has `permissions` field, which shows the effective permissions the current user has on the resource. The `permissions` field is empty if the owner is the same as the current user.

For example if you get the definition of a drive shared by another user with you:

```
GET /api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDdp
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
  },
  "permissions": [
    "EDIT",
    "LIST"
  ],
  "resource_uri": "/api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 2147483648,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [],
  "uuid": "ac5ca635-d119-4dda-b27a-fa5a69fc17da"
}
```

The definition includes non-empty permissions attribute:

```
{
  "permissions": [
    "EDIT",
    "LIST"
  ]
}
```

In the next subsection there is an example of the same drive but from the view point of the drive owner.

### 21.9.3 Finding what permissions you have granted on a resource

As is the case with finding out what permissions are given to the current user, it also hard to find out, to find out what is granted to other users, as users may be granted different permissions through several ACLs referring to different tags. Therefore each resource has read-only field `grantees`. Each object of the `grantees` list contains a references to the grantee user, and a list of the permissions granted to them.

For example if you get the definition of your drive shared with another user:

```
GET /api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0ID0p
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [
    {
      "permissions": [
        "EDIT",
        "LIST"
      ],
      "user": {
        "email": null,
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      }
    }
  ],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_acl",
  "owner": {
    "resource_uri": "/api/2.0/user/3516e556-eb0e-4f0c-bf95-8b642194b8fd/",
    "uuid": "3516e556-eb0e-4f0c-bf95-8b642194b8fd"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/ac5ca635-d119-4dda-b27a-fa5a69fc17da/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 2147483648,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [
    {
      "resource_uri": "/api/2.0/tags/6d302107-fc0b-433a-99b1-9f2d3692eefc/",
      "uuid": "6d302107-fc0b-433a-99b1-9f2d3692eefc"
    }
  ],
  "uuid": "ac5ca635-d119-4dda-b27a-fa5a69fc17da"
}
```

The definition includes non-empty grantees attribute:

```
{
  "grantees": [
    {
```

```

    "permissions": [
      "EDIT",
      "LIST"
    ],
    "user": {
      "email": null,
      "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    }
  }
}

```

In the previous subsection there is an example of the same drive definition but from the view point of the permissions grantee.

## 21.10 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "put",
    "delete"
  ],
  "allowed_list_http_methods": [
    "get",
    "put",
    "post",
    "delete"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "grantees": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Many related resources. Can be either a list of URIs or list of individual.",
      "nullable": true,
      "readonly": false,
      "type": "related",
      "unique": false
    },
    "meta": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
      "nullable": false,
      "readonly": false,
      "type": "dict",
      "unique": false
    },
    "name": {
      "blank": false,

```



```

    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "owner": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "A single related resource. Can be either a URI or set of nested resource da",
    "nullable": false,
    "readonly": true,
    "type": "related",
    "unique": false
  },
  "resource_uri": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "rules": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "ACL rules",
    "nullable": true,
    "readonly": false,
    "type": "related",
    "unique": false
  },
  "tags": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Many related resources. Can be either a list of URIs or list of individual",
    "nullable": true,
    "readonly": false,
    "type": "related",
    "unique": false
  },
  "uuid": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  }
}
}

```



---

## Jobs

---

Jobs are used to track progress of long running tasks. A good example for a long running task is cloning of drives and servers. Depending on the current cloud resource usage and the users preferences ( *Creating Drives in a Different Availability Group (Create/Clone Avoid)* ), a drive clone operation can take a while.

**Currently, the operations that create a job for tracking are:**

- Drive cloning
- Server cloning

## 22.1 How it works

### 22.1.1 Drive cloning

After successfully starting a cloning operation via the API, you will receive the definition of the newly created drive. All drives have a **jobs** field, containing references to the all the long running tasks executed on them. The destination, since it is a newly created drive, references only 1 job - the currently running one. The source might contain more jobs, depending on how many times it was cloned. **History of completed jobs is kept for 3 days.** Older jobs are discarded.

**Example clone request:**

```
POST /api/2.0/drives/5d537d3f-22ea-4967-9ec0-32e837a8b390/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "affinities": [],
  "media": "cdrom",
  "name": "test_drive_y",
  "size": 1207959631,
  "storage_type": "dssd"
}
```

**Example clone response:**

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "affinities": [],
```

```

    "allow_multimount": false,
    "grantees": [],
    "jobs": [
      {
        "resource_uri": "/api/2.0/jobs/8b00acbb-889b-44a5-8a8d-dc3617a6145d/",
        "uuid": "8b00acbb-889b-44a5-8a8d-dc3617a6145d"
      }
    ],
    "licenses": [],
    "media": "cdrom",
    "meta": {},
    "mounted_on": [],
    "name": "test_drive_y",
    "owner": {
      "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
      "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
    },
    "permissions": [],
    "resource_uri": "/api/2.0/drives/03cb7ca7-ca07-4380-9071-c19260fbec59/",
    "runtime": {
      "is_snapshotable": true,
      "snapshots_allocated_size": 0,
      "storage_type": "dssd"
    },
    "size": 1207975936,
    "snapshots": [],
    "status": "cloning_dst",
    "storage_type": "dssd",
    "tags": [],
    "uuid": "03cb7ca7-ca07-4380-9071-c19260fbec59"
  }
]
}

```

Using the the **jobs** field we could examine how is our cloning operation doing:

#### Example request:

```

GET /api/2.0/jobs/6c809fa7-f797-4d0f-bbfb-b1b9ba737dda/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "children": [],
  "created": "2014-06-05T09:45:08.003595+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-05T09:45:12.941760+00:00",
  "operation": "drive_clone",
  "resource_uri": "/api/2.0/jobs/6c809fa7-f797-4d0f-bbfb-b1b9ba737dda/",
  "resources": [
    "/api/2.0/drives/842e4c44-75a2-4d81-b812-9bc63d3be11e/",
    "/api/2.0/drives/963e3f37-572a-4e40-b70f-06f093ea7eb5/"
  ]
}

```

```

    ],
    "state": "success",
    "uuid": "6c809fa7-f797-4d0f-bbfb-b1b9ba737dda"
  }

```

The interesting field here is **data.progress**. 100 means the job has finished.

## 22.1.2 Server cloning

Cloning a server is a bit more complex. Since servers generally contain drives, drives must also be cloned. That is why **jobs support sub-jobs**. When you send a clone server request, you receive the definition of the newly created server. It also has a **jobs** field containing the definitions of jobs and sub-jobs.

### Example clone request:

```

POST /api/2.0/servers/ee11b9d1-e837-4f27-91a4-d1ae4c621bd1/action/?do=clone HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "name": "test_cloned_server_name",
  "random_vnc_password": true
}

```

### Example clone response:

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 1000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [
    {
      "resource_uri": "/api/2.0/jobs/559a2a76-df4a-4c0d-8449-979576b2c354/",
      "uuid": "559a2a76-df4a-4c0d-8449-979576b2c354"
    }
  ],
  "mem": 536870912,
  "meta": {},
  "name": "test_cloned_server_name",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],

```

```

    "resource_uri": "/api/2.0/servers/2d69b07c-c7a3-4e25-88d2-c7055217e1fb/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "2d69b07c-c7a3-4e25-88d2-c7055217e1fb",
    "vnc_password": "QR5coR4V"
}

```

Each job has **children** field with containing its sub-jobs. Note that each sub-job contains a **children** field, too. Meaning that a sub-job could have a sub-jobs, too.

**Example request:**

```

GET /api/2.0/jobs/4e1944be-a078-4ead-9d19-5f8823a84d42/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "children": [
    {
      "children": [],
      "created": "2014-06-05T09:50:06.771415+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-05T09:50:12.817209+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/5cf1a9e0-c019-4022-9ca5-08af64fa5105/",
      "resources": [
        "/api/2.0/drives/4f41610b-b73b-49f0-a7c8-2e5cd110eb31/",
        "/api/2.0/drives/ea0b214-7f8c-446d-9d6b-1c106fcd9aba/"
      ],
      "state": "success",
      "uuid": "5cf1a9e0-c019-4022-9ca5-08af64fa5105"
    }
  ],
  "created": "2014-06-05T09:50:06.436976+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-05T09:50:12.726357+00:00",
  "operation": "server_clone",
  "resource_uri": "/api/2.0/jobs/4e1944be-a078-4ead-9d19-5f8823a84d42/",
  "resources": [
    "/api/2.0/servers/3ee19ba9-fd1a-435b-9dbf-559d188fba90/",
    "/api/2.0/servers/810850e5-593b-4c21-af9e-a7cadac5b79c/"
  ],
  "state": "success",
  "uuid": "4e1944be-a078-4ead-9d19-5f8823a84d42"
}

```

### 22.1.3 List all jobs

All jobs can be listed and examined quite easily.

**Example request:**

```
GET /api/2.0/jobs/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
    "total_count": 500
  },
  "objects": [
    {
      "children": [],
      "created": "2014-06-05T00:27:12.890638+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-05T00:27:17.537618+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/654b3d26-0b4a-41ff-b166-741adc9fcc61/",
      "resources": [],
      "state": "success",
      "uuid": "654b3d26-0b4a-41ff-b166-741adc9fcc61"
    },
    {
      "children": [],
      "created": "2014-06-04T13:48:30.146021+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-04T13:48:30.182588+00:00",
      "operation": "server_clone",
      "resource_uri": "/api/2.0/jobs/2bb2929e-75e0-47ea-a7ef-88ae5c205bca/",
      "resources": [],
      "state": "success",
      "uuid": "2bb2929e-75e0-47ea-a7ef-88ae5c205bca"
    },
    {
      "children": [],
      "created": "2014-06-04T19:27:22.929792+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-04T19:27:28.194541+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/6d9eef6c-7b7b-412f-b0c8-b31acfa31b4b/",
      "resources": [],
      "state": "success",
    }
  ]
}
```

```

        "uuid": "6d9eef6c-7b7b-412f-b0c8-b31acfa31b4b"
    },
    {
        "children": [],
        "created": "2014-06-05T05:20:06.808650+00:00",
        "data": {
            "progress": 100
        },
        "last_modified": "2014-06-05T05:20:07.714198+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/f6f9423d-e239-48bf-b3e1-7eef57f41df5/",
        "resources": [
            "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/"
        ],
        "state": "success",
        "uuid": "f6f9423d-e239-48bf-b3e1-7eef57f41df5"
    },
    {
        "children": [],
        "created": "2014-06-04T09:44:52.922093+00:00",
        "data": {
            "progress": 100
        },
        "last_modified": "2014-06-04T09:44:59.151935+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/51f17911-5db7-414a-b291-6a26d99c7af4/",
        "resources": [],
        "state": "success",
        "uuid": "51f17911-5db7-414a-b291-6a26d99c7af4"
    },
    {
        "children": [],
        "created": "2014-06-05T08:27:17.837077+00:00",
        "data": {
            "progress": 100
        },
        "last_modified": "2014-06-05T08:27:22.451556+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/98be68fd-bc5b-42fd-ba42-2a197e7ad7bb/",
        "resources": [],
        "state": "success",
        "uuid": "98be68fd-bc5b-42fd-ba42-2a197e7ad7bb"
    },
    {
        "children": [],
        "created": "2014-06-04T10:37:08.377980+00:00",
        "data": {
            "progress": 100
        },
        "last_modified": "2014-06-04T10:37:09.264198+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/b18335fd-5c38-43a0-a6ad-5e4150609317/",
        "resources": [
            "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/"
        ],
        "state": "success",
        "uuid": "b18335fd-5c38-43a0-a6ad-5e4150609317"
    },

```



```

{
  "children": [],
  "created": "2014-06-04T14:47:51.859179+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-04T14:47:52.695159+00:00",
  "operation": "drive_clone",
  "resource_uri": "/api/2.0/jobs/ad1d412b-c51a-4cca-8ff9-81f5976471dd/",
  "resources": [
    "/api/2.0/drives/b9a2e66c-81d1-4de3-aac0-b6f2bde806f1/"
  ],
  "state": "success",
  "uuid": "ad1d412b-c51a-4cca-8ff9-81f5976471dd"
},
{
  "children": [],
  "created": "2014-06-04T12:08:35.939653+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-04T12:08:42.703768+00:00",
  "operation": "drive_clone",
  "resource_uri": "/api/2.0/jobs/9df9bccb-7a7a-4dc3-afbe-65614ae68828/",
  "resources": [],
  "state": "success",
  "uuid": "9df9bccb-7a7a-4dc3-afbe-65614ae68828"
},
{
  "children": [],
  "created": "2014-06-04T14:54:38.461484+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-04T14:54:44.194807+00:00",
  "operation": "drive_clone",
  "resource_uri": "/api/2.0/jobs/a71f63ac-940c-4b1b-b536-d98b7ebcdd1f/",
  "resources": [],
  "state": "success",
  "uuid": "a71f63ac-940c-4b1b-b536-d98b7ebcdd1f"
},
{
  "children": [],
  "created": "2014-06-04T10:15:45.013901+00:00",
  "data": {
    "progress": 100
  },
  "last_modified": "2014-06-04T10:15:49.998849+00:00",
  "operation": "drive_clone",
  "resource_uri": "/api/2.0/jobs/b75498db-c630-4eae-9d4c-545b55c9f80c/",
  "resources": [],
  "state": "success",
  "uuid": "b75498db-c630-4eae-9d4c-545b55c9f80c"
},
{
  "children": [],
  "created": "2014-06-04T18:23:05.924797+00:00",
  "data": {

```

```

        "progress": 100
    },
    "last_modified": "2014-06-04T18:23:07.201011+00:00",
    "operation": "drive_clone",
    "resource_uri": "/api/2.0/jobs/5ca591ad-4973-486f-865e-f649924ec8a9/",
    "resources": [],
    "state": "success",
    "uuid": "5ca591ad-4973-486f-865e-f649924ec8a9"
},
{
    "children": [],
    "created": "2014-06-04T13:22:41.878643+00:00",
    "data": {
        "progress": 100
    },
    "last_modified": "2014-06-04T13:22:43.423951+00:00",
    "operation": "drive_clone",
    "resource_uri": "/api/2.0/jobs/1590cc04-a04d-47c6-aeaa-e686fba11480/",
    "resources": [],
    "state": "success",
    "uuid": "1590cc04-a04d-47c6-aeaa-e686fba11480"
},
{
    "children": [
        {
            "children": [],
            "created": "2014-06-04T09:22:19.895663+00:00",
            "data": {
                "progress": 100
            },
            "last_modified": "2014-06-04T09:22:21.182049+00:00",
            "operation": "drive_clone",
            "resource_uri": "/api/2.0/jobs/b3c8791a-7163-47fd-871d-ce7e74cdea22/",
            "resources": [],
            "state": "success",
            "uuid": "b3c8791a-7163-47fd-871d-ce7e74cdea22"
        }
    ],
    "created": "2014-06-04T09:22:19.229671+00:00",
    "data": {
        "progress": 100
    },
    "last_modified": "2014-06-04T09:22:21.090352+00:00",
    "operation": "server_clone",
    "resource_uri": "/api/2.0/jobs/2f9fb6cb-d879-4bfb-afaa-0e7e9e8c8171/",
    "resources": [],
    "state": "success",
    "uuid": "2f9fb6cb-d879-4bfb-afaa-0e7e9e8c8171"
},
{
    "children": [],
    "created": "2014-06-05T09:45:29.984652+00:00",
    "data": {
        "progress": 100
    },
    "last_modified": "2014-06-05T09:45:34.243982+00:00",
    "operation": "drive_clone",
    "resource_uri": "/api/2.0/jobs/a34a8179-f6c1-4a0c-8d96-f0d727017807/",

```

```

    "resources": [],
    "state": "success",
    "uuid": "a34a8179-f6c1-4a0c-8d96-f0d727017807"
  },
  {
    "children": [
      {
        "children": [],
        "created": "2014-06-05T07:22:35.318791+00:00",
        "data": {
          "progress": 100
        },
        "last_modified": "2014-06-05T07:22:36.437933+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/b548f9cc-9290-4c44-880a-688511964088/",
        "resources": [],
        "state": "success",
        "uuid": "b548f9cc-9290-4c44-880a-688511964088"
      }
    ],
    "created": "2014-06-05T07:22:34.982635+00:00",
    "data": {
      "progress": 100
    },
    "last_modified": "2014-06-05T07:22:36.341483+00:00",
    "operation": "server_clone",
    "resource_uri": "/api/2.0/jobs/b60c32a1-6c07-4ba0-bffa-ef7a5b51829b/",
    "resources": [],
    "state": "success",
    "uuid": "b60c32a1-6c07-4ba0-bffa-ef7a5b51829b"
  },
  {
    "children": [
      {
        "children": [],
        "created": "2014-06-04T13:49:17.336222+00:00",
        "data": {
          "progress": 100
        },
        "last_modified": "2014-06-04T13:49:22.411035+00:00",
        "operation": "drive_clone",
        "resource_uri": "/api/2.0/jobs/2f575e30-3a2c-45a2-bc46-0dd6e73ba5bb/",
        "resources": [],
        "state": "success",
        "uuid": "2f575e30-3a2c-45a2-bc46-0dd6e73ba5bb"
      }
    ],
    "created": "2014-06-04T13:49:16.986663+00:00",
    "data": {
      "progress": 100
    },
    "last_modified": "2014-06-04T13:49:22.312955+00:00",
    "operation": "server_clone",
    "resource_uri": "/api/2.0/jobs/f1deb190-bb8f-4bc2-8013-ca6f69e4f481/",
    "resources": [],
    "state": "success",
    "uuid": "f1deb190-bb8f-4bc2-8013-ca6f69e4f481"
  },

```

```

    {
      "children": [],
      "created": "2014-06-04T16:31:41.972433+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-04T16:31:49.636223+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/eb93dff-d457-471c-a812-f970c39aef65/",
      "resources": [],
      "state": "success",
      "uuid": "eb93dff-d457-471c-a812-f970c39aef65"
    },
    {
      "children": [],
      "created": "2014-06-05T06:22:43.214966+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-05T06:22:44.265751+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/4a616d17-8e57-4756-b186-211539405d8d/",
      "resources": [],
      "state": "success",
      "uuid": "4a616d17-8e57-4756-b186-211539405d8d"
    },
    {
      "children": [],
      "created": "2014-06-04T15:29:03.093430+00:00",
      "data": {
        "progress": 100
      },
      "last_modified": "2014-06-04T15:29:09.318627+00:00",
      "operation": "drive_clone",
      "resource_uri": "/api/2.0/jobs/68609b60-7f6f-4890-8940-b9e0c8d2af77/",
      "resources": [],
      "state": "success",
      "uuid": "68609b60-7f6f-4890-8940-b9e0c8d2af77"
    }
  ]
}

```

## 22.2 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,

```

```

"fields": {
  "children": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Background jobs, initiated by this job.",
    "nullable": true,
    "readonly": false,
    "type": "related",
    "unique": false
  },
  "created": {
    "blank": false,
    "default": "2014-06-05T09:46:41.793232+00:00",
    "help_text": "A date & time as a string. Ex: \"2010-11-10T03:07:43\"",
    "nullable": false,
    "readonly": false,
    "type": "datetime",
    "unique": false
  },
  "data": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Meta information related to this background job's execution.",
    "nullable": true,
    "readonly": false,
    "type": "object",
    "unique": false
  },
  "last_modified": {
    "blank": false,
    "default": "2014-06-05T09:46:41.793249+00:00",
    "help_text": "A date & time as a string. Ex: \"2010-11-10T03:07:43\"",
    "nullable": false,
    "readonly": false,
    "type": "datetime",
    "unique": false
  },
  "operation": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": true,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "resource_uri": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "resources": {
    "blank": false,
    "default": "No default provided.",

```

```
        "help_text": "Resources linked to this background job.",
        "nullable": true,
        "readonly": false,
        "type": "list",
        "unique": false
    },
    "state": {
        "blank": false,
        "default": "started",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "uuid": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": true
    }
},
"filtering": {
    "state": 1
},
"ordering": [
    "-last_modified"
]
}
```

---

## Objects' metadata field

---

Objects, such as servers, drives, IPs, and VLANs have a `meta` field. This field can be used to store arbitrary information in key-value form. There is no predefined structure for the `meta` attribute, only keys are limited to 32 characters, and values should be strings. The Web UI uses the `meta` to store drive and server descriptions.

Note that the whole `meta` is updated completely so all old key-value pairs should be present in new definition, when updating `meta`, unless they are to be deleted.

### 23.1 Server's metadata fields with special meaning

- `ssh_public_key` is filled with the contents of the “SSH Key” field from the server's properties section
- `cloudinit-user-data` if available (and `cloud-init` 0.7.5 or newer is installed on the server) this field should contain valid cloud-init user data, that will be taken into account from the cloud-init
- `base64_fields` contains comma-separated meta keys in the metadata that are encoded in base64. This feature is useful when a meta field has more than one lines of text. `cloud-init` (0.7.5 or newer) for example will automatically decode from base64 the contents of `cloudinit-user-data` if the name of the meta key is in `base64_fields`

### 23.2 Drive's metadata fields with special meaning

When drive is cloned from the library we copy its Metadata to the new drive's meta as:

- `os` - drive's operating system (e.g. GNU/Linux, BSD, Windows...)
- `arch` - the architecture of the OS (e.g. 32-bit or 64-bit)
- `distribution` - for GNU/Linux and BSD operating systems (e.g. Debian, Fedora, FreeBSD...)
- `version` - distribution's version (if any)
- `default_user` - used in pre-installed images in order to specify the default user in the installed OS
- `install_notes` - used if the image is not pre-installed
- `url` - URL to the official website of the OS
- `description` - description of what the drive contains
- `image_type` - type of the image on the drive (e.g. Live CD, Install CD, Pre-install)
- `category` - states what this image is most suitable for (e.g. dbserver, webserver, router, networking, ...)

- `paid` - this boolean field states if cloning the drive from the library is being charged
- `favorite` - this boolean field states if this drive is among the most popular library drives

These fields with special meaning could still be changed and deleted (even created if missing) just like every other metadata field. Their content don't change server/drive's behavior nor any one of them is required.

## 23.3 Examples

### Add meta to a drive:

To add meta to the following drive:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {},
  "mounted_on": [],
  "name": "test_drive_1",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 1073741824,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [],
  "uuid": "5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0"
}
```

one has to use update call:

```
PUT /api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
```



```

"meta": {
  "meta_key1": "value",
  "meta_key2": "value\nwith\nnew lines"
},
"mounted_on": [],
"name": "test_drive_1",
"owner": {
  "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
  "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
},
"permissions": [],
"resource_uri": "/api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/",
"runtime": {
  "is_snapshotable": true,
  "snapshots_allocated_size": 0,
  "storage_type": "dssd"
},
"size": 1073741824,
"snapshots": [],
"status": "unmounted",
"storage_type": "dssd",
"tags": [],
"uuid": "5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0"
}

```

Response is:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "affinities": [],
  "allow_multimount": false,
  "grantees": [],
  "jobs": [],
  "licenses": [],
  "media": "disk",
  "meta": {
    "meta_key1": "value",
    "meta_key2": "value\nwith\nnew lines"
  },
  "mounted_on": [],
  "name": "test_drive_1",
  "owner": {
    "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
    "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
  },
  "permissions": [],
  "resource_uri": "/api/2.0/drives/5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0/",
  "runtime": {
    "is_snapshotable": true,
    "snapshots_allocated_size": 0,
    "storage_type": "dssd"
  },
  "size": 1073741824,
  "snapshots": [],
  "status": "unmounted",
  "storage_type": "dssd",
  "tags": [],

```

```

"uuid": "5d3bb6d8-ce39-41e8-8742-2ba5af5ef2d0"
}

```

**Update server meta, by removing one key and adding another:**

Suppose a server is updated to have the following definition:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 2000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {
    "meta_key1": "value1",
    "meta_key2": "value2"
  },
  "name": "test_server_updated",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  },
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "0dacaaf7-1ba8-451d-b135-8848e76381ee",
  "vnc_password": "updated_password"
}

```

In order to remove *meta\_key1*, it is just skipped in the meta definition. Keeping *meta\_key2* with its value is achieved by redefining it, and new key *meta\_key3* is added by defining it:

```

PUT /api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "context": true,
  "cpu": 2000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,

```

```

"drives": [],
"enable_numa": false,
"grantees": [],
"hv_relaxed": false,
"hv_tsc": false,
"hypervisor": "kvm",
"jobs": [],
"mem": 536870912,
"meta": {
  "meta_key2": "value2",
  "meta_key3": "value3"
},
"name": "test_server_updated",
"nics": [],
"owner": {
  "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
  "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
},
"permissions": [],
"pubkeys": [],
"requirements": [],
"resource_uri": "/api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/",
"runtime": null,
"smp": 1,
"status": "stopped",
"tags": [],
"uuid": "0dacaaf7-1ba8-451d-b135-8848e76381ee",
"vnc_password": "updated_password"
}

```

The final result is:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "context": true,
  "cpu": 2000,
  "cpu_model": null,
  "cpu_type": "amd",
  "cpus_instead_of_cores": false,
  "drives": [],
  "enable_numa": false,
  "grantees": [],
  "hv_relaxed": false,
  "hv_tsc": false,
  "hypervisor": "kvm",
  "jobs": [],
  "mem": 536870912,
  "meta": {
    "meta_key2": "value2",
    "meta_key3": "value3"
  },
  "name": "test_server_updated",
  "nics": [],
  "owner": {
    "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
    "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
  }
}

```

```
},
  "permissions": [],
  "pubkeys": [],
  "requirements": [],
  "resource_uri": "/api/2.0/servers/0dacaaf7-1ba8-451d-b135-8848e76381ee/",
  "runtime": null,
  "smp": 1,
  "status": "stopped",
  "tags": [],
  "uuid": "0dacaaf7-1ba8-451d-b135-8848e76381ee",
  "vnc_password": "updated_password"
}
```

---

## Availability Grouping and Avoid

---

Resources requested by user are usually allocated to maximize performance. However this can lead to a situation, where user's servers or drives share the same compute or storage host. This may be undesirable if the user attempts to build, a redundant setup, as in the unlikely event of hardware failure, servers sharing the same failed compute host will crash at the same time, and drives sharing the same failed storage host will become unavailable at the same time.

To improve the robustness of redundant setups, it is possible to hint the system, which resources are preferred to be on separated physical hosts. This is achieved through the *Avoid* functionality for starting servers, and for creating/cloning drives.

To check the grouping of running servers on compute hosts, or the grouping of drives on storage hosts, one can use the corresponding `availability_groups` API calls.

### 24.1 Checking Availability Groups for Drives and Servers

The `availability_groups` call returns which resources are grouped on the same physical host.

#### 24.1.1 Server availability groups

**GET** `/servers/availability_groups/`

**statuscode 200** no error

Returns which running servers share same physical computes host. Returns an array containing arrays. Each inner array holds the UUIDs of servers which reside on same physical host. Non-running servers are not in the array as they are on any host.

**GET** `/servers/availability_groups/{uuid}/`

**statuscode 200** no error

Queries which other servers share same physical host with the given one. Returns an array holding server UUIDs. The response includes also the UUID of the queried server. If the queried server is not running, the array will be empty.

#### 24.1.2 Drives availability groups

**GET** `/drives/availability_groups/`

**statuscode 200** no error

Returns which drives share same physical storage host. Returns an array containing arrays. Each inner array holds the UUIDs of drives which reside on same physical host.

**GET** /drives/availability\_groups/{uuid}/

statuscode 200 no error

Queries which other drives share same physical storage host with the given one. Returns an array holding drives UUIDs. The response includes also the UUID of the queried drive.

### 24.1.3 Examples

**Example request - servers availability:**

```
GET /2.0/servers/availability_groups/ HTTP/1.1
```

**Example response - servers availability:**

```
HTTP/1.0 200 OK
Content-Type: application/json; charset=utf-8

[
  [
    "313e73a4-592f-48cf-81c4-a6c079d005a5",
    "e035a488-8587-4a15-ab25-9b7343236bc9"
  ],
  [
    "313e73a4-592f-48cf-81c4-a6c079d005a5",
    "e035a488-8587-4a15-ab25-9b7343236bc9"
  ]
]
```

**Example request - single-server availability:**

```
GET /2.0/servers/availability_groups/313e73a4-592f-48cf-81c4-a6c079d005a5/ HTTP/1.1
```

**Example response - single-server availability:**

```
HTTP/1.0 200 OK
Content-Type: application/json; charset=utf-8

[
  "313e73a4-592f-48cf-81c4-a6c079d005a5",
  "e035a488-8587-4a15-ab25-9b7343236bc9"
]
```

## 24.2 General Notes on Avoid Functionality

Avoid functionality is **best effort**. This means that requests containing avoid will succeed even if the avoid can not be satisfied and the requested resource ends in the same availability group as an avoid resource.

The **order of the avoid argument UUIDs also specifies the order of preference to avoid**. This means that avoid requests are satisfied from left to right, and if it is not possible to satisfy the full avoid list, only part of the avoid list will be satisfied and it will consist of UUIDs from the left part of the list. For example if there are only three hosts which can satisfy a request, and there are three avoid resources on these hosts, the newly request resource, will end up on the same host as the avoid resource which appears last in the list.

Avoid functionality may incur **performance penalty**. Specifying avoid for drives cloning and servers cloning, as it also clones attached drives, usually slows down significantly the clone operation, as the drive data has to be moved over the network between storage hosts.

## 24.3 Starting Servers in a Different Availability Group (Start Avoid)

```
POST /servers/{uuid}/action/?do=start&avoid={<server1_uuid>, <server2_uuid>, ...}
```

**statuscode 202** Action accepted, execution is proceeding.

Starts a server with specific UUID attempting to run it on a different physical infrastructure host from the other servers specified in the *avoid* argument which is a single server UUID or a comma-separated list of server UUIDs. This way the server specified by *uuid* may be run in a distinct availability group from the other listed servers.

Note that it might not always be possible to run a server in a different availability group, therefore the order of the *avoid* list also signifies the priority of avoiding other servers.

**Example request:**

```
POST /2.0/servers/2767d839-3a9d-4bd5-983b-676d1307438f/action/?do=start&avoid=bb1d5184-ebcc-4f33-867
```

## 24.4 Creating Drives in a Different Availability Group (Create/Clone Avoid)

```
POST /drives/{uuid}/action/?do=clone&avoid={<server_or_drive_uuid1>, <server_or_drive_uuid2>
```

**statuscode 202** Action accepted, execution is proceeding.

```
POST /drives/?avoid={<server_or_drive_uuid1>, <server_or_drive_uuid2>, ...}
```

**statuscode 201** object created

```
POST /servers/{server_uuid}/action/?do=clone&avoid={<server_or_drive_uuid1>, <server_or_drive_uuid2>
```

**statuscode 202** Action accepted, execution is proceeding.

It is possible to hint the system which drives are preferred to be on separate physical storage hosts. Avoid can be specified on all drive creation operations: create, clone drive, and clone server. The value of the *avoid* GET parameter may contain a single or a comma-separated list of drive or server UUIDs. If a server uuid is in the *avoid* parameter, this is interpreted as avoiding all the drives attached to the server.

Note that it might not always be create a drive in a different availability group, therefore the order of the *avoid* list also signifies the priority of avoiding other drives. Since it is not possible to specify the order of drives attached to a server, if a drive from a server needs to be avoided with high priority, it may be specified in addition to the server UUID. For example `avoid={important_to_avoid_drive_uuid}, {server_uuid_to_which_drive_is_attached}`.

## 24.5 Recipe for Creating a Redundant Server Backed by Separate Infrastructure

The best way to create a clone of server that does not share hardware with the original is to clone the origin server with avoiding itself, and to start the clone with avoiding the origing:

```
POST /2.0/servers/2767d839-3a9d-4bd5-983b-676d1307438f/action/?do=clone&avoid=2767d839-3a9d-4bd5-983b-676d1307438f
```

If the created server uuid is *bb1d5184-ebcc-4f33-867e-db654eb2d17e*:

```
POST /2.0/servers/bb1d5184-ebcc-4f33-867e-db654eb2d17e/action/?do=start&avoid=2767d839-3a9d-4bd5-983b-676d1307438f
```



---

## Subscriptions

---

### 25.1 Statuses

Every subscription has a status associated with it:

- **active**: A subscription that is currently being used, either because the current time is between its start or end date or because it was the subscription for depletable resources (traffic) that is currently being used.
- **inactive**: A subscription that is not currently being used, either because its not active yet or because there is another depletable resource (traffic) subscription being used.
- **expired**: A subscription that has either expired or that has been depleted.

### 25.2 Listing

**GET /subscriptions/**

Gets the list of subscriptions of the user.

**param status** filters only subscriptions in that status. Can be one of *active*, *inactive*, *expired*, *all*, *notexpired*. Default is *all*.

**param resource** a list (comma separated) of resources. One or more of: *dssd*, *cpu*, *mem*, *tx*, *ip*, *vlan*.

**statuscode 200** no error

**Example request:**

```
GET /api/2.0/subscriptions/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
```

```
    "total_count": 5
  },
  "objects": [
    {
      "amount": "32212254720",
      "auto_renew": true,
      "descendants": [],
      "discount_amount": null,
      "discount_percent": null,
      "discounts": null,
      "end_time": "2015-08-26T12:00:00+00:00",
      "free_tier": false,
      "id": "14",
      "period": "365 days, 2:45:57.487493",
      "price": "0E-20",
      "remaining": "32212254720",
      "resource": "dssd",
      "resource_uri": "/api/2.0/subscriptions/14/",
      "start_time": "2014-08-26T09:14:02.512507+00:00",
      "status": "active",
      "subscribed_object": null,
      "uuid": "e067df3c-35c5-4327-927e-2ee52b6f796a",
      "was_billed": true
    },
    {
      "amount": "1",
      "auto_renew": true,
      "descendants": [],
      "discount_amount": null,
      "discount_percent": null,
      "discounts": null,
      "end_time": "2015-08-26T12:00:00+00:00",
      "free_tier": false,
      "id": "13",
      "period": "365 days, 2:46:06.019766",
      "price": "0E-20",
      "remaining": "1",
      "resource": "ip",
      "resource_uri": "/api/2.0/subscriptions/13/",
      "start_time": "2014-08-26T09:13:53.980234+00:00",
      "status": "active",
      "subscribed_object": "94.26.101.195",
      "uuid": "aa442254-08fa-4d36-b511-47d4aa3a303b",
      "was_billed": true
    },
    {
      "amount": "1",
      "auto_renew": true,
      "descendants": [],
      "discount_amount": null,
      "discount_percent": null,
      "discounts": null,
      "end_time": "2015-08-26T12:00:00+00:00",
      "free_tier": false,
      "id": "12",
      "period": "365 days, 2:46:12.563258",
      "price": "0E-20",
      "remaining": "1",
```

```

    "resource": "vlan",
    "resource_uri": "/api/2.0/subscriptions/12/",
    "start_time": "2014-08-26T09:13:47.436742+00:00",
    "status": "active",
    "subscribed_object": "10619300-edda-42ba-91e0-7e3df0689d00",
    "uuid": "e31585fb-6c3f-422d-a51e-395fd53fd2e5",
    "was_billed": true
  },
  {
    "amount": "17179869184",
    "auto_renew": true,
    "descendants": [],
    "discount_amount": null,
    "discount_percent": null,
    "discounts": null,
    "end_time": "2015-08-26T12:00:00+00:00",
    "free_tier": false,
    "id": "10",
    "period": "365 days, 2:46:54.269604",
    "price": "0E-20",
    "remaining": "17179869184",
    "resource": "mem",
    "resource_uri": "/api/2.0/subscriptions/10/",
    "start_time": "2014-08-26T09:13:05.730396+00:00",
    "status": "active",
    "subscribed_object": null,
    "uuid": "5830f712-6eef-4732-9dbd-6a9f3b1fcb2f",
    "was_billed": true
  },
  {
    "amount": "10000",
    "auto_renew": true,
    "descendants": [],
    "discount_amount": null,
    "discount_percent": null,
    "discounts": null,
    "end_time": "2015-08-26T12:00:00+00:00",
    "free_tier": false,
    "id": "9",
    "period": "365 days, 2:47:23.682426",
    "price": "0E-20",
    "remaining": "10000",
    "resource": "cpu",
    "resource_uri": "/api/2.0/subscriptions/9/",
    "start_time": "2014-08-26T09:12:36.317574+00:00",
    "status": "active",
    "subscribed_object": null,
    "uuid": "664fb99b-f8cc-4e85-8764-ef3215767682",
    "was_billed": true
  }
],
"price": "0E-20"
}

```

## 25.3 Subscription duration

There are three parameters that determine the subscription's duration. All times are in UTC. Not all combinations are valid:

- `start_time`: In ISO 8601 format. Defaults to the current time.
- `end_time`: In ISO 8601 format.
- `period`: Free form text describing the period. Ex: '2 months 1 week'.

Inputs			Result
start_time	end_time	period	
True	True	True	Error: Ambiguous.
True	True	False	Between start_time and end_time.
True	False	True	Period from start_time.
True	False	False	Error: Not specific enough.
False	True	True	Period until end_time.
False	True	False	From now until end_time.
False	False	True	Period from now.
False	False	False	Error: Not specific enough.

## 25.4 Creating

**POST** `/subscriptions/`

### Status Codes

- **201** – object created

Creates a new subscription. There is a limit of 500 subscriptions that can be purchased in one request.

The resource can be a *license* or one of: `dssd` (`hdd` is an alias for this, but is being deprecated), `cpu`, `mem`, `tx`, `ip`, `vlan`.

When buying `tx`, the time parameters are ignored.

Trying to purchase a subscription for IP or VLAN with an amount bigger than one will generate several subscriptions of that type.

Subscription times are rounded to noon UTC, using the following rules:

- End time is always rounded to the next noon.
- Start time is rounded to the maximum between the current time and the previous noon. This means that subscriptions bought for now do start now, but subscriptions for the future start at the previous noon.

**Warning:** Subscriptions are mostly immutable for the customer. The only parameter that can be changed is the auto renew.

**Example request:**

```
POST /api/2.0/subscriptions/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDpp

{
  "objects": [
    {
```

```

    "amount": 30000,
    "period": "1 month",
    "resource": "dssd"
  }
]
}

```

**Example response:**

```

HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "amount": "30000",
      "auto_renew": true,
      "descendants": [],
      "discount_amount": "0",
      "discount_percent": "0",
      "end_time": "2013-04-22T12:00:00+00:00",
      "id": "28",
      "period": "31 days, 1:31:53.888650",
      "price": "0.000003839842975139617919921875",
      "remaining": "30000",
      "resource": "dssd",
      "resource_uri": "/api/2.0/subscriptions/28/",
      "start_time": "2013-03-22T10:28:06.111350+00:00",
      "status": "active",
      "subscribed_object": null,
      "uuid": "f622f364-bccf-4a36-a1ce-632a81640ad4"
    }
  ],
  "price": "0.000003839842975139617919921875"
}

```

## 25.5 Extending

**POST /subscriptions/{id}/action/?do=extend****Status Codes**

- 200 – no error

Extends the subscription. An extended subscription is actually just another subscription that is linked to the original. If a period or an end\_time are specified in the request, they are used. If neither are specified, the creation length of the subscription is used.

A caveat to this is that a subscription created initially with an end\_time, the exact interval is used. Subscriptions that are created with a period have the period parsed again in the context of the new start\_time. An example would be a subscription created on the 1st of February with a period of '1 month' will be extended for 31 days, but one that was created with an end date of 1st of March will be extended for 28 days.

If the specified subscription has actually been extended, it traverses and extends the last subscription in the chain.

## 25.6 Autorenewing

**POST** /subscriptions/{id}/action/?do=auto\_renew

Toggles the autorenew flag of the subscription. Optionally, the value can be specified in the request.

### Status Codes

- 200 – no error

### 25.6.1 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "post"
  ],
  "allowed_list_http_methods": [
    "get",
    "post"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "amount": {
      "blank": false,
      "default": 1,
      "help_text": "Subscription amount",
      "nullable": false,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "auto_renew": {
      "blank": false,
      "default": true,
      "help_text": "States if the subscription will auto renew on expire",
      "nullable": false,
      "readonly": false,
      "type": "boolean",
      "unique": false
    },
    "descendants": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Subscriptions that have been extended from the current one",
      "nullable": true,
      "readonly": true,
      "type": "related",
      "unique": false
    },
    "discount_amount": {
      "blank": true,
      "default": "No default provided.",
      "help_text": "Amount of discount",
```

```

        "nullable": true,
        "readonly": false,
        "type": "decimal",
        "unique": false
    },
    "discount_percent": {
        "blank": true,
        "default": "No default provided.",
        "help_text": "Percent of discount",
        "nullable": true,
        "readonly": false,
        "type": "decimal",
        "unique": false
    },
    "discounts": {
        "blank": true,
        "default": "No default provided.",
        "help_text": "All discounts for this subscription",
        "nullable": true,
        "readonly": true,
        "type": "dict",
        "unique": false
    },
    "end_time": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "End time of subscription",
        "nullable": true,
        "readonly": false,
        "type": "datetime",
        "unique": false
    },
    "free_tier": {
        "blank": false,
        "default": false,
        "help_text": "Boolean data. Ex: True",
        "nullable": false,
        "readonly": false,
        "type": "boolean",
        "unique": false
    },
    "id": {
        "blank": false,
        "default": "",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": true
    },
    "period": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Duration of the subscription",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": false
    }

```

```
    },
    "price": {
      "blank": false,
      "default": 0,
      "help_text": "Subscription price",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    },
    "remaining": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Amount remaining",
      "nullable": true,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "resource": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Name of resource associated with the subscription",
      "nullable": false,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "resource_uri": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "nullable": false,
      "readonly": true,
      "type": "string",
      "unique": false
    },
    "start_time": {
      "blank": false,
      "default": "2015-03-19T13:55:01.236421+00:00",
      "help_text": "Start time of subscription",
      "nullable": false,
      "readonly": false,
      "type": "datetime",
      "unique": false
    },
    "status": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Status of the subscription",
      "nullable": false,
      "readonly": true,
      "type": "string",
      "unique": false
    },
    "subscribed_object": {
      "blank": false,
      "default": "No default provided.",
```



```

        "help_text": "Subscribed object - the target of this subscription, if applicable",
        "nullable": true,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "uuid": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": true,
        "readonly": false,
        "type": "string",
        "unique": true
    },
    "was_billed": {
        "blank": false,
        "default": false,
        "help_text": "Boolean data. Ex: True",
        "nullable": false,
        "readonly": false,
        "type": "boolean",
        "unique": false
    }
},
"filtering": {
    "subscribed_object": [
        "exact"
    ]
}
}

```

## 25.7 Grouped subscriptions

### GET /groupedsubscriptions/

Returns only the first subscriptions from a chain of extended subscriptions. The extensions are listed in the 'descendants' attribute and the end\_time is that of the last subscription in the chain.

#### Status Codes

- 200 – no error

## 25.8 Calculator

### POST /subscriptioncalculator/

Returns the price of the subscriptions POSTed in the same format as the normal subscriptions.

#### Status Codes

- 200 – no error

#### Example request:

```

POST /api/2.0/subscriptioncalculator/ HTTP/1.1
Content-Type: application/json

```

```
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "amount": 10000000000,
      "period": "1 month",
      "resource": "dssd"
    }
  ]
}
```

**Example response:**

```
HTTP/1.1 200 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "amount": "10000000000",
      "discount_amount": "0E-24",
      "discount_percent": "0",
      "discounts": {},
      "end_time": "2015-04-20T12:00:00+00:00",
      "free_tier": false,
      "period": "31 days, 22:04:59.904871",
      "price": "1.010484993457794189453125",
      "resource": "dssd",
      "start_time": "2015-03-19T13:55:00.095129+00:00",
      "was_billed": true
    }
  ],
  "price": "1.010484993457794189453125"
}
```

Similarly, the price of extending a subscription can be calculated.

**Example request:**

```
POST /api/2.0/subscriptioncalculator/7272/action/?do=extend HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "amount": "32212254720",
  "discount_amount": "9.6075000000000000",
  "discount_percent": "0.2500000000",
  "discounts": {
    "period": "0.2500000000"
  },
  "end_time": "2016-08-26T12:00:00+00:00",
  "free_tier": false,
}
```

```
"period": "366 days, 0:00:00",  
"price": "28.8225000000000000000000",  
"resource": "dssd",  
"start_time": "2015-08-26T12:00:00+00:00",  
"was_billed": true  
}
```



---

## Accounts

---

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 26.1 General

The accounts API supports the following actions

### 26.2 Create account

**POST** `/accounts/action/?do=create`

Creates an account on the system. In case of succes, the user has to check his email for a confirmation link, which will ask him to create a password for the account.

#### Status Codes

- **200** – no error

#### Parameters

- **email** – The email of the account to be created
- **promo** – Promo code for initial subscriptions and demo server (optional)

#### Example request:

```
POST /api/2.0/accounts/action/?do=create HTTP/1.1
Content-Type: application/json

{
  "email": "john_doe+42@cloudsigma.com",
  "promo": null
}
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "success": true,
  "uuid": "ba8cce4c-9809-4389-a41e-2f9faabf87e9"
}
```

## 26.3 Login/Logout

### POST /accounts/action/?do=login

Login to the system using cookie auth

#### Status Codes

- 200 – no error
- 401 – unauthorized

#### Example request:

```
POST /accounts/action/?do=login HTTP/1.1
Host: api.cloudsigma.com
Accept: application/json
```

Request body

```
{
  'username': '123@asd.com',
  'password': 'parola'
}
```

**Response:** *Empty*

### POST /accounts/action/?do=logout

Logout from the system when using cookie auth

#### Status Codes

- 200 – no error

#### Example request:

```
POST /accounts/action/?do=logout HTTP/1.1
Host: api.cloudsigma.com
Accept: application/json
```

Request body

```
{}
```

**Response:** *Empty*

### POST /accounts/action/?do=check\_login

Check if you are logged in the system

#### Status Codes

- 200 – no error

**Example request:**

```
POST /accounts/action/?do=check_login HTTP/1.1
Host: api.cloudsigma.com
Accept: application/json
```

**Request body**

```
{ }
```

**Response:** *Empty*





---

## Audit logs

---

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 27.1 General

Audit logs are used to track changes made on your resources, either by you or by other parties, like CloudSigma staff or people that have permission to access you resources.

Querying is done as follows:

**GET** /logs/

#### Status Codes

- 200 – no error

```
GET /api/2.0/logs/?limit=5 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 5,
    "offset": 0,
    "total_count": 3193934
  },
  "objects": [
    {
      "action": "delete",
      "actor": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "category": "Servers",
      "details": "",
      "error_message": "",
      "error_point": null,
      "error_type": null,

```

```

    "success": true,
    "timestamp": "2014-06-05 09:41:29.378194+00:00",
    "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
  },
  {
    "action": "stop",
    "actor": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "category": "Servers",
    "details": "",
    "error_message": "",
    "error_point": null,
    "error_type": null,
    "success": true,
    "timestamp": "2014-06-05 09:41:26.864672+00:00",
    "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
  },
  {
    "action": "stop_send",
    "actor": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "category": "Servers",
    "details": "",
    "error_message": "",
    "error_point": null,
    "error_type": null,
    "success": true,
    "timestamp": "2014-06-05 09:41:24.811553+00:00",
    "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
  },
  {
    "action": "boot",
    "actor": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "category": "Servers",
    "details": "",
    "error_message": "",
    "error_point": null,
    "error_type": null,
    "success": true,
    "timestamp": "2014-06-05 09:40:48.789732+00:00",
    "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
  },
  {
    "action": "start_send",
    "actor": {
      "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
      "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
    },
    "category": "Servers",
    "details": "",
    "error_message": "",

```

```

        "error_point": null,
        "error_type": null,
        "success": true,
        "timestamp": "2014-06-05 09:40:47.897876+00:00",
        "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
    }
]
}

```

## 27.2 Actions

Actions give information about the operation that created the log. They go in a few categories.

- **General actions - related to most resource types like servers, drives and snapshots:**
  - **create:** During resource creation
  - **update:** During resource update
  - **delete:** During resource deletion
  - **change\_owner:** The ownership of the resource has changed. Currently only CloudSigma staff can change ownership of a resource.
  - **clone\_src:** Resource is used as a cloning source
  - **clone\_dst:** Resource is a cloning destination - the newly cloned drive.
- **Drive specific actions - these only relate to drives:**
  - **move:** Drive is moved to another physical storage. Only staff members can move drives.
  - **convert\_to\_library:** Drive is converted to a library drive. Only staff members can convert drives.
  - **converted\_from\_library:** Drive is converted to a regular drive from a library drive. Only staff members can convert drives.
  - **init\_upload:** Drive upload is initialized.
- **Server specific actions - these only relate to servers:**
  - **start\_send:** An attempt to start a server
  - **boot:** The result of a start operation.
  - **stop\_send:** An attempt to stop a server.
  - **stop:** The result of a stop operation
  - **open\_vnc:** Open VNC channel to a server
  - **close\_vnc:** Close VNC channel to a server
  - **shutdown ACPI\_send:** An ACPI shutdown request is send to the server.
  - **heal:** Server got healed, because its recorded state did not match the physical infrastructure. For example, a server is marked as unavailable, but it is actually running fine.

## 27.3 Errors

If the field **success** is marked as **False**, that means that an error occurred during the operation. The error details are saved in the following fields:

- **error\_type** - States the type of the error
- **error\_point** - Points to cause of the error and is mainly used for validation errors
- **error\_message** - Human readable message associated with the error

## 27.4 Example

The following example will show all the logged information during a server's lifecycle.

First we create a server:

```
POST /api/2.0/servers/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "cpu": 1000,
      "mem": 536870912,
      "name": "test_server",
      "vnc_password": "testserver"
    }
  ]
}
```

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "context": true,
      "cpu": 1000,
      "cpu_model": null,
      "cpu_type": "amd",
      "cpus_instead_of_cores": false,
      "drives": [],
      "enable_numa": false,
      "grantees": [],
      "hv_relaxed": false,
      "hv_tsc": false,
      "hypervisor": "kvm",
      "jobs": [],
      "mem": 536870912,
      "meta": {},
      "name": "test_server",
      "nics": [],
      "owner": {
        "resource_uri": "/api/2.0/user/c2fc9982-cf2e-434a-bf63-e22a27b39f00/",
        "uuid": "c2fc9982-cf2e-434a-bf63-e22a27b39f00"
      }
    }
  ]
}
```

```

    },
    "permissions": [],
    "pubkeys": [],
    "requirements": [],
    "resource_uri": "/api/2.0/servers/973a1039-8014-4622-9a6a-8caf21e08e7e/",
    "runtime": null,
    "smp": 1,
    "status": "stopped",
    "tags": [],
    "uuid": "973a1039-8014-4622-9a6a-8caf21e08e7e",
    "vnc_password": "testserver"
  }
]
}

```

Upon completion you will see the following log at the top of the audit log list:

```

GET /api/2.0/logs/?limit=1 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 1,
    "offset": 0,
    "total_count": 3193929
  },
  "objects": [
    {
      "action": "create",
      "actor": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "category": "Servers",
      "details": "{\"name\": \"test_server\", \"tags\": [], \"mem\": 536870912, \"smp\": 1",
      "error_message": "",
      "error_point": null,
      "error_type": null,
      "success": true,
      "timestamp": "2014-06-05 09:40:29.833850+00:00",
      "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
    }
  ]
}

```

- **action** states that we wanted to create a server
- **details** state the parameters of the create call
- **actor** states the user which executed the operation
- **success** is *true*, so the operation completed successfully.
- **uuid** matches the server's uuid

Then we start the server:

```
POST /api/2.0/servers/4002da8d-94d7-4093-ab7a-a78d976a9efc/action/?do=start HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{}
```

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "action": "start",
  "result": "success",
  "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
}
```

We check the logs again. We see that the action is **start\_send** and **success** is **true**:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 1,
    "offset": 0,
    "total_count": 3193930
  },
  "objects": [
    {
      "action": "start_send",
      "actor": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "category": "Servers",
      "details": "",
      "error_message": "",
      "error_point": null,
      "error_type": null,
      "success": true,
      "timestamp": "2014-06-05 09:40:47.897876+00:00",
      "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
    }
  ]
}
```

If the server is fully booted and operational, its status will change to **running**. If it failed to boot for some reason, the **error\_type**, **error\_point** and **error\_message** fields will explain why that happened. In this particular case, we had a successful start, so the audit log looks like this:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 1,
    "offset": 0,
    "total_count": 3193931
  },
  "objects": [
```

```

    {
      "action": "boot",
      "actor": {
        "resource_uri": "/api/2.0/user/5b4a69a3-8e78-4c45-a8ba-8b13f0895e23/",
        "uuid": "5b4a69a3-8e78-4c45-a8ba-8b13f0895e23"
      },
      "category": "Servers",
      "details": "",
      "error_message": "",
      "error_point": null,
      "error_type": null,
      "success": true,
      "timestamp": "2014-06-05 09:40:48.789732+00:00",
      "uuid": "4002da8d-94d7-4093-ab7a-a78d976a9efc"
    }
  ]
}

```

**The pattern is the same when stopping a server:**

- an audit log with action **stop\_send** is saved, representing the status of the request to stop a server.
- If that succeeded i.e. the request to stop a server is successfully send, you can expect a log with action **stop**, representing the status of the stop operation i.e. the server actually stopped.

**Note:** If you stop a server from inside, only a log entry with **stop** action will be added. This way, you can figure out if the server got stopped from the API or not:

- If there are 2 logs **stop\_send** and **stop**, it is stopped via an API request
- If only **stop** is present ( no **stop\_send** ), it means that the server is stopped by other means (stopped from inside, crashed, etc).

## 27.5 Schema

**GET /logs/schema/**

```

GET /api/2.0/logs/schema/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "action": {
      "default": null,
      "help_text": "Name of the executed action",

```

```
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "actor": {
    "default": null,
    "help_text": "User who executed action.",
    "readonly": false,
    "required": false,
    "type": "related"
  },
  "category": {
    "default": null,
    "help_text": "Category the action belongs to.",
    "readonly": false,
    "required": true,
    "type": "string"
  },
  "details": {
    "default": null,
    "help_text": "Details about the executed action.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "error_message": {
    "default": null,
    "help_text": "Error message, if applicable.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "error_point": {
    "default": null,
    "help_text": "The field that caused the error, if applicable.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "error_type": {
    "default": null,
    "help_text": "Type of error, if applicable.",
    "readonly": false,
    "required": false,
    "type": "string"
  },
  "success": {
    "default": true,
    "help_text": "Whether the action was successful.",
    "readonly": false,
    "required": true,
    "type": "boolean"
  },
  "timestamp": {
    "default": null,
    "help_text": "Time when entry was added.",
    "readonly": false,
    "required": true,
```



```
        "type": "string"
    },
    "uuid": {
        "default": null,
        "help_text": "The uuid of resource the action is executed on. Can be empty, meaning",
        "readonly": false,
        "required": false,
        "type": "string"
    }
},
"filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
}
}
```



## 28.1 Allowed HTTP methods

Method	Description
GET	get the profile object
PUT	update the profile object

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

## 28.2 Listing

### GET /profile/

Gets the user profile. Note that *profile* is a single object so the API does not return a list.

**statuscode 200** no error

#### Example request:

```
GET /api/2.0/profile/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDp
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "address": "Somewhere in time",
  "api_https_only": false,
  "autotopup_amount": "0E-16",
  "autotopup_threshold": "0E-16",
  "bank_reference": "jdoe123",
  "clone_naming": "COUNTER",
  "company": "",
  "country": "BG",
  "currency": "EUR",
  "email": "user@example.com",
  "first_name": "John",
```

```

"has_autotopup": false,
"has_tx_autotopup": false,
"invoicing": true,
"key_auth": false,
"language": "EN",
"last_name": "Doe",
"mailing_list": true,
"meta": {},
"my_notes": "2015-03-19 07:41:24.231684",
"network_restrictions": null,
"nickname": "",
"phone": "",
"postcode": "1000",
"reseller": "",
"signup_time": "2014-08-25T14:34:33.868186+00:00",
"state": "REGULAR",
"tax_name": null,
"tax_rate": null,
"title": "",
"town": "Sofia",
"tx_autotopup_amount": "0E-16",
"tx_autotopup_threshold": "0E-16",
"uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
"vat": ""
}

```

## 28.3 Editing

**PUT /profile/**

**statuscode 200** no error

Edits a user profile. (We want to change the company name for example)

**Example request:**

```

PUT /api/2.0/profile/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "address": "Somewhere in time",
  "api_https_only": false,
  "autotopup_amount": "0E-16",
  "autotopup_threshold": "0E-16",
  "bank_reference": "jdoe123",
  "clone_naming": "COUNTER",
  "company": "Newly Set Company Name",
  "country": "BG",
  "currency": "EUR",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "has_tx_autotopup": false,
  "invoicing": true,
  "key_auth": false,
  "language": "EN",

```

```

"last_name": "Doe",
"mailing_list": true,
"meta": {},
"my_notes": "2015-03-19 07:41:24.231684",
"network_restrictions": null,
"nickname": "",
"phone": "",
"postcode": "1000",
"reseller": "",
"signup_time": "2014-08-25T14:34:33.868186+00:00",
"state": "REGULAR",
"tax_name": null,
"tax_rate": null,
"title": "",
"town": "Sofia",
"tx_autotopup_amount": "0E-16",
"tx_autotopup_threshold": "0E-16",
"uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
"vat": ""
}

```

**Example response:**

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "address": "Somewhere in time",
  "api_https_only": false,
  "autotopup_amount": "0E-16",
  "autotopup_threshold": "0E-16",
  "bank_reference": "jdoe123",
  "clone_naming": "COUNTER",
  "company": "Newly Set Company Name",
  "country": "BG",
  "currency": "EUR",
  "email": "user@example.com",
  "first_name": "John",
  "has_autotopup": false,
  "has_tx_autotopup": false,
  "invoicing": true,
  "key_auth": false,
  "language": "EN",
  "last_name": "Doe",
  "mailing_list": true,
  "meta": {},
  "my_notes": "2015-03-19 07:41:24.231684",
  "network_restrictions": null,
  "nickname": "",
  "phone": "",
  "postcode": "1000",
  "reseller": "",
  "signup_time": "2014-08-25T14:34:33.868186+00:00",
  "state": "REGULAR",
  "tax_name": null,
  "tax_rate": null,
  "title": "",
  "town": "Sofia",
  "tx_autotopup_amount": "0E-16",

```

```

"tx_autotopup_threshold": "0E-16",
"uuid": "6f670b3c-a2e6-433f-aeab-b976b1cdaf03",
"vat": ""
}

```

## 28.4 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get",
    "put"
  ],
  "allowed_list_http_methods": [
    "get",
    "put"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "address": {
      "blank": false,
      "default": "",
      "help_text": "Unicode string data. Ex: \"Hello World\"",
      "nullable": false,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "api_https_only": {
      "blank": false,
      "default": false,
      "help_text": "Boolean data. Ex: True",
      "nullable": false,
      "readonly": false,
      "type": "boolean",
      "unique": false
    },
    "autotopup_amount": {
      "blank": false,
      "default": 0,
      "help_text": "Fixed precision numeric data. Ex: 26.73",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    },
    "autotopup_threshold": {
      "blank": false,
      "default": 0,
      "help_text": "Fixed precision numeric data. Ex: 26.73",
      "nullable": false,
      "readonly": false,
      "type": "decimal",

```

```

    "unique": false
  },
  "bank_reference": {
    "blank": true,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": true,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "clone_naming": {
    "blank": false,
    "default": "NONE",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "company": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "country": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "currency": {
    "blank": true,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": true,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "email": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "first_name": {
    "blank": false,

```

```
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "has_autotopup": {
    "blank": false,
    "default": false,
    "help_text": "Boolean data. Ex: True",
    "nullable": false,
    "readonly": false,
    "type": "boolean",
    "unique": false
  },
  "has_tx_autotopup": {
    "blank": false,
    "default": false,
    "help_text": "Boolean data. Ex: True",
    "nullable": false,
    "readonly": false,
    "type": "boolean",
    "unique": false
  },
  "invoicing": {
    "blank": false,
    "default": true,
    "help_text": "Boolean data. Ex: True",
    "nullable": false,
    "readonly": false,
    "type": "boolean",
    "unique": false
  },
  "key_auth": {
    "blank": false,
    "default": false,
    "help_text": "Boolean data. Ex: True",
    "nullable": false,
    "readonly": false,
    "type": "boolean",
    "unique": false
  },
  "language": {
    "blank": false,
    "default": "EN",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "last_name": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
```



```

        "type": "string",
        "unique": false
    },
    "mailing_list": {
        "blank": false,
        "default": true,
        "help_text": "Boolean data. Ex: True",
        "nullable": false,
        "readonly": false,
        "type": "boolean",
        "unique": false
    },
    "meta": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
        "nullable": false,
        "readonly": false,
        "type": "dict",
        "unique": false
    },
    "my_notes": {
        "blank": false,
        "default": "",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": true,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "network_restrictions": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": true,
        "readonly": true,
        "type": "string",
        "unique": false
    },
    "nickname": {
        "blank": false,
        "default": "",
        "help_text": "User nickname",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "phone": {
        "blank": false,
        "default": "",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "postcode": {

```

```

    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": true,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "reseller": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "signup_time": {
    "blank": false,
    "default": "2015-03-19T13:49:15.421660+00:00",
    "help_text": "A date & time as a string. Ex: \"2010-11-10T03:07:43\"",
    "nullable": false,
    "readonly": false,
    "type": "datetime",
    "unique": false
  },
  "state": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "tax_name": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": true,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "tax_rate": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Fixed precision numeric data. Ex: 26.73",
    "nullable": true,
    "readonly": true,
    "type": "decimal",
    "unique": false
  },
  "title": {
    "blank": false,
    "default": "",
    "help_text": "User title",
    "nullable": false,

```

```

    "readonly": false,
    "type": "string",
    "unique": false
  },
  "town": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "tx_autotopup_amount": {
    "blank": false,
    "default": 0,
    "help_text": "Fixed precision numeric data. Ex: 26.73",
    "nullable": false,
    "readonly": false,
    "type": "decimal",
    "unique": false
  },
  "tx_autotopup_threshold": {
    "blank": false,
    "default": 0,
    "help_text": "Fixed precision numeric data. Ex: 26.73",
    "nullable": false,
    "readonly": false,
    "type": "decimal",
    "unique": false
  },
  "uuid": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "vat": {
    "blank": false,
    "default": "",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  }
}

```



---

## Notification contacts

---

### 29.1 Listing

**GET** `/notification_contacts/`

Gets the list of contacts configured for the account.

**Status Codes**

- 200 – no error

**Example request:**

```
GET /api/2.0/notification_contacts/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 1
  },
  "objects": [
    {
      "email": "some_email_1@example.com",
      "main": true,
      "name": "Some Name",
      "phone": "",
      "resource_uri": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937",
      "uuid": "e13c4b8c-68c8-4163-bc00-2a43a86e5937"
    }
  ]
}
```

## 29.2 Creating

### POST /notification\_contacts/

Creates a new contact.

#### Status Codes

- 201 – object created

#### Example request:

```
POST /api/2.0/notification_contacts/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop

{
  "objects": [
    {
      "email": "some_email_2@example.com",
      "name": "Some Name 2",
      "phone": "+1 123 555 1234"
    }
  ]
}
```

#### Example response:

```
HTTP/1.1 201 CREATED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "email": "some_email_2@example.com",
      "main": null,
      "name": "Some Name 2",
      "phone": "+1123551234",
      "resource_uri": "/api/2.0/notification_contacts/0103f398-9f85-446a-a285-fe63cf9f0f28",
      "uuid": "0103f398-9f85-446a-a285-fe63cf9f0f28"
    }
  ]
}
```

## 29.3 Editing

### PUT /notification\_contacts/{uuid}/

Edits a notification contact. Note that changing the main user's email is not recommended, as if the account email changes, so will the main contact.

#### Status Codes

- 200 – no errors

#### Example request:

```
PUT /api/2.0/notification_contacts/0103f398-9f85-446a-a285-fe63cf9f0f28/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

```
{
  "email": "some_email_2@example.com",
  "name": "Some New Name"
}
```

**Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "email": "some_email_2@example.com",
  "main": null,
  "name": "Some New Name",
  "phone": "+11235551234",
  "pk": "0103f398-9f85-446a-a285-fe63cf9f0f28",
  "resource_uri": "/api/2.0/notification_contacts/0103f398-9f85-446a-a285-fe63cf9f0f28/",
  "uuid": "0103f398-9f85-446a-a285-fe63cf9f0f28"
}
```

## 29.4 Deleting

**DELETE /notification\_contacts/{uuid}/**

Delete a notification contact. Note that you cannot delete the main contact.

**Status Codes**

- 204 – no errors

**Example request:**

```
DELETE /api/2.0/notification_contacts/0103f398-9f85-446a-a285-fe63cf9f0f28/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.1 204 NO CONTENT
Content-Type: text/html; charset=utf-8
```





---

## Notification preferences

---

### 30.1 Listing

#### GET /notification\_preferences/

Gets the list of contacts configured for the account.

#### Status Codes

- 200 – no error

#### Example request:

```
GET /api/2.0/notification_preferences/?limit=0 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 22
  },
  "objects": [
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "trial_expire",
      "value": false
    },
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "payment_withheld",
      "value": false
    },
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "payment_failed",
```

```

    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "subscription_renewal_failure",
    "value": false
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "subscription_expire",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "out_of_money_soon",
    "value": false
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "stop_servers",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "subscription_renewal_success",
    "value": false
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "subscription_expire_soon",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "out_of_money_very_soon",
    "value": false
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "payment",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "drives_delete_soon",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",

```

```

        "medium": "email",
        "type": "subscription_renewal_very_soon",
        "value": true
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "new_account",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "reset_password",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "drives_delete",
        "value": true
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "random_upgrade",
        "value": true
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "trial_expire_soon",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "payment_cancelled",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "subscription_renewal_soon",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "subscription_expire_very_soon",
        "value": false
    },
    {
        "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
        "medium": "email",
        "type": "payment_approved",
        "value": true
    }
}

```

```
    ]
  }
```

## 30.2 Updating

### PUT /notification\_preferences/

Updates the specified preferences. Only the ones in the request are modified.

#### Status Codes

- 200 – no error

#### Example request:

```
PUT /api/2.0/notification_preferences/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

{
  "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
  "medium": "email",
  "type": "trial_expire",
  "value": true
}
```

#### Example response:

```
HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "trial_expire",
      "value": true
    }
  ]
}
```

Multiple objects can be specified in the request.

#### Example request:

```
PUT /api/2.0/notification_preferences/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

[
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "trial_expire",
    "value": false
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
```

```

    "medium": "email",
    "type": "payment_withheld",
    "value": true
  },
  {
    "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
    "medium": "email",
    "type": "payment_failed",
    "value": false
  }
]

```

**Example response:**

```

HTTP/1.1 202 ACCEPTED
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "trial_expire",
      "value": false
    },
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "payment_withheld",
      "value": true
    },
    {
      "contact": "/api/2.0/notification_contacts/e13c4b8c-68c8-4163-bc00-2a43a86e5937/",
      "medium": "email",
      "type": "payment_failed",
      "value": false
    }
  ]
}

```



## 31.1 Balance

### 31.1.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

### 31.1.2 Listing

#### **GET** /balance/

Get the balance and currency of the current account.

#### **Status Codes**

- 200 – no error

#### **Example request:**

```
GET /api/2.0/balance/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

#### **Example response:**

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "balance": "155367.99237092264288897986",
  "credit_limit": null,
  "currency": "EUR"
}
```

### 31.1.3 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "balance": {
      "default": "No default provided.",
      "help_text": "Amount of money in account",
      "readonly": true,
      "required": true,
      "type": "decimal"
    },
    "credit_limit": {
      "default": "No default provided.",
      "help_text": "Credit limit applied to the account, if present",
      "readonly": true,
      "required": true,
      "type": "string"
    },
    "currency": {
      "default": "No default provided.",
      "help_text": "Currency of the account",
      "readonly": true,
      "required": true,
      "type": "string"
    }
  },
  "filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
  }
}

```

## 31.2 Pricing

### 31.2.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics



## 31.2.2 Listing

### GET /pricing/

Gets the pricing information that are applicable to the cloud. Subscription prices use a burst level of 0.

#### Status Codes

- 200 – no error

#### Example request:

```
GET /api/2.0/pricing/?limit=5 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIG10IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "current": {
    "cpu": 20,
    "dssd": 1,
    "ip": 1,
    "mem": 17,
    "msft_7jq_00341": 1,
    "msft_7nq_00302": 1,
    "msft_p73_04837_core": 1,
    "msft_tfa_00523": 1,
    "sms": 1,
    "sparc_t4_cpu": 1,
    "sparc_t4_mem": 1,
    "ssd": 1,
    "tx": 1,
    "vlan": 1,
    "vlan_ecx": 1,
    "zadara": 1
  },
  "meta": {
    "limit": 5,
    "offset": 0,
    "total_count": 484
  },
  "next": {
    "cpu": 20,
    "dssd": 1,
    "ip": 1,
    "mem": 17,
    "msft_7jq_00341": 1,
    "msft_7nq_00302": 1,
    "msft_p73_04837_core": 1,
    "msft_tfa_00523": 1,
    "sms": 1,
    "sparc_t4_cpu": 1,
    "sparc_t4_mem": 1,
    "ssd": 1,
    "tx": 1,
    "vlan": 1,
    "vlan_ecx": 1,
```

```

    "zadara": 1
  },
  "objects": [
    {
      "currency": "GBP",
      "id": "656",
      "level": 1,
      "multiplier": 2783138807808000,
      "price": "0.18200000000000000000",
      "resource": "dssd",
      "unit": "GB/month"
    },
    {
      "currency": "EUR",
      "id": "636",
      "level": 1,
      "multiplier": 2783138807808000,
      "price": "0.21000000000000000000",
      "resource": "dssd",
      "unit": "GB/month"
    },
    {
      "currency": "USD",
      "id": "616",
      "level": 1,
      "multiplier": 2783138807808000,
      "price": "0.28000000000000000000",
      "resource": "dssd",
      "unit": "GB/month"
    },
    {
      "currency": "CHF",
      "id": "596",
      "level": 1,
      "multiplier": 2783138807808000,
      "price": "0.26600000000000000000",
      "resource": "dssd",
      "unit": "GB/month"
    },
    {
      "currency": "USD",
      "id": "307",
      "level": 0,
      "multiplier": 2783138807808000,
      "price": "0.14000000000000000000",
      "resource": "dssd",
      "unit": "GB/month"
    }
  ]
}

```

### 31.2.3 Burst levels

The current and future burst levels are provided in objects at the root of the response. The burst levels are calculated every 5 minutes based on the usage of the cloud and are applied 5 minutes later (when the next burst levels are calculated)

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "current": {
    "cpu": 20,
    "dssd": 1,
    "ip": 1,
    "mem": 17,
    "msft_7jq_00341": 1,
    "msft_7nq_00302": 1,
    "msft_p73_04837_core": 1,
    "msft_tfa_00523": 1,
    "sms": 1,
    "sparc_t4_cpu": 1,
    "sparc_t4_mem": 1,
    "ssd": 1,
    "tx": 1,
    "vlan": 1,
    "vlan_ecx": 1,
    "zadara": 1
  },
  "next": {
    "cpu": 20,
    "dssd": 1,
    "ip": 1,
    "mem": 17,
    "msft_7jq_00341": 1,
    "msft_7nq_00302": 1,
    "msft_p73_04837_core": 1,
    "msft_tfa_00523": 1,
    "sms": 1,
    "sparc_t4_cpu": 1,
    "sparc_t4_mem": 1,
    "ssd": 1,
    "tx": 1,
    "vlan": 1,
    "vlan_ecx": 1,
    "zadara": 1
  }
}
```

### 31.2.4 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
```

```
{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 0,
  "fields": {
```

```
"currency": {
  "blank": false,
  "default": "No default provided.",
  "help_text": "The currency of the price",
  "nullable": false,
  "readonly": true,
  "type": "string",
  "unique": false
},
"id": {
  "blank": false,
  "default": "",
  "help_text": "Unicode string data. Ex: \"Hello World\"",
  "nullable": false,
  "readonly": false,
  "type": "string",
  "unique": true
},
"level": {
  "blank": false,
  "default": 0,
  "help_text": "The burst level the price applies to",
  "nullable": false,
  "readonly": false,
  "type": "integer",
  "unique": false
},
"multiplier": {
  "blank": false,
  "default": "No default provided.",
  "help_text": "The multiplier applied to get the price of one unit per second, from t",
  "nullable": false,
  "readonly": true,
  "type": "integer",
  "unique": false
},
"price": {
  "blank": false,
  "default": "No default provided.",
  "help_text": "Price",
  "nullable": false,
  "readonly": false,
  "type": "decimal",
  "unique": false
},
"resource": {
  "blank": false,
  "default": "No default provided.",
  "help_text": "The resource the price applies to",
  "nullable": false,
  "readonly": true,
  "type": "string",
  "unique": false
},
"unit": {
  "blank": false,
  "default": "No default provided.",
  "help_text": "The unit of the price",
```

```

        "nullable": false,
        "readonly": true,
        "type": "string",
        "unique": false
    },
    "filtering": {
        "level": 1
    }
}

```

## 31.3 Discounts

### 31.3.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

### 31.3.2 Listing

#### GET /discount/

Get discount information.

**statuscode 200** no error

#### Example request:

```

GET /api/2.0/discount/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZ1IGl0IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  },
  "objects": [
    {
      "period": "3 months",
      "value": "0.0300000000"
    },
    {
      "period": "6 months",
      "value": "0.1000000000"
    }
  ]
}

```

```
    {
      "period": "1 year",
      "value": "0.2500000000"
    },
    {
      "period": "2 years",
      "value": "0.3500000000"
    },
    {
      "period": "3 years",
      "value": "0.4500000000"
    }
  ]
}
```

### 31.3.3 Schema

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 0,
  "fields": {
    "period": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "The minimum period for this discount",
      "nullable": true,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "value": {
      "blank": false,
      "default": 0,
      "help_text": "The value of the discount",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    }
  }
}
```

## 31.4 Transaction list

### 31.4.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

### 31.4.2 Listing

#### GET /ledger/

Get the transactions for the account.

**statuscode 200** no error

#### Example request:

```
GET /api/2.0/ledger/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

#### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
    "total_count": 98203
  },
  "objects": [
    {
      "amount": "0.00014583333333333333",
      "billing_cycle": 105157,
      "end": "469291.07488238102453490453",
      "human_interval": "5 minutes",
      "id": "39509304",
      "initial": "469291.07502821435786823786",
      "interval": 300,
      "poll_time": "2014-06-05T09:06:06.713945+00:00",
      "reason": "Burst: 4.50 GB of dssd for 5 minutes at 2014-06-05 09:06",
      "resource_amount": "4831838208",
      "time": "2014-06-05T09:08:47.992023+00:00"
    },
    {
      "amount": "0.0090831000000000000000",
      "billing_cycle": 105150,
      "end": "469291.07502821435786823786",
      "human_interval": "2 minutes",
      "id": "39506824",
      "initial": "469291.08411131435786823786",
      "interval": 137,
```

```

        "poll_time": "2014-06-05T08:31:06.610957+00:00",
        "reason": "Burst: 12.00 GHz of cpu for 2 minutes at 2014-06-05 08:31",
        "resource_amount": "12000",
        "time": "2014-06-05T08:33:48.047354+00:00"
    },
    {
        "amount": "0.0025573333333333333333333333333333",
        "billing_cycle": 105150,
        "end": "469291.08411131435786823786",
        "human_interval": "2 minutes",
        "id": "39506823",
        "initial": "469291.08666864769120157119",
        "interval": 137,
        "poll_time": "2014-06-05T08:31:06.610957+00:00",
        "reason": "Burst: 4.00 GB of mem for 2 minutes at 2014-06-05 08:31",
        "resource_amount": "4294967296",
        "time": "2014-06-05T08:33:48.036326+00:00"
    },
    {
        "amount": "0.00014534722222222222222222222222222",
        "billing_cycle": 105148,
        "end": "469291.08666864769120157119",
        "human_interval": "5 minutes",
        "id": "39506114",
        "initial": "469291.08681399491342379341",
        "interval": 299,
        "poll_time": "2014-06-05T08:21:06.603517+00:00",
        "reason": "Burst: 4.50 GB of dssd for 5 minutes at 2014-06-05 08:21",
        "resource_amount": "4831838208",
        "time": "2014-06-05T08:23:50.433096+00:00"
    },
    {
        "amount": "-55.45000000000000000000284217",
        "billing_cycle": null,
        "end": "469291.08681399491342379341",
        "human_interval": null,
        "id": "39505412",
        "initial": "469235.63681399491342095124",
        "interval": null,
        "poll_time": "2014-06-05T08:16:04.495196+00:00",
        "reason": "Payment through card - 9fddd858-ec89-11e3-8c3b-00259082dfa8",
        "resource_amount": "1",
        "time": "2014-06-05T08:16:04.495183+00:00"
    },
    {
        "amount": "-77.23000000000000000000397904",
        "billing_cycle": null,
        "end": "469235.63681399491342095124",
        "human_interval": null,
        "id": "39505411",
        "initial": "469158.40681399491341697220",
        "interval": null,
        "poll_time": "2014-06-05T08:15:58.552271+00:00",
        "reason": "Payment through card - 9c37a0bc-ec89-11e3-8c3b-00259082dfa8",
        "resource_amount": "1",
        "time": "2014-06-05T08:15:58.552247+00:00"
    },
    {

```



```

    "amount": "0.00888420000000000000",
    "billing_cycle": 105138,
    "end": "469158.40681399491341697220",
    "human_interval": "2 minutes",
    "id": "39502556",
    "initial": "469158.41569819491341697220",
    "interval": 134,
    "poll_time": "2014-06-05T07:31:06.597276+00:00",
    "reason": "Burst: 12.00 GHz of cpu for 2 minutes at 2014-06-05 07:31",
    "resource_amount": "12000",
    "time": "2014-06-05T07:33:51.033990+00:00"
  },
  {
    "amount": "0.00250133333333333333",
    "billing_cycle": 105138,
    "end": "469158.41569819491341697220",
    "human_interval": "2 minutes",
    "id": "39502555",
    "initial": "469158.41819952824675030553",
    "interval": 134,
    "poll_time": "2014-06-05T07:31:06.597276+00:00",
    "reason": "Burst: 4.00 GB of mem for 2 minutes at 2014-06-05 07:31",
    "resource_amount": "4294967296",
    "time": "2014-06-05T07:33:51.022223+00:00"
  },
  {
    "amount": "0.00014534722222222222",
    "billing_cycle": 105136,
    "end": "469158.41819952824675030553",
    "human_interval": "5 minutes",
    "id": "39501851",
    "initial": "469158.41834487546897252775",
    "interval": 299,
    "poll_time": "2014-06-05T07:21:06.607872+00:00",
    "reason": "Burst: 4.50 GB of dssd for 5 minutes at 2014-06-05 07:21",
    "resource_amount": "4831838208",
    "time": "2014-06-05T07:23:49.590257+00:00"
  },
  {
    "amount": "-55.4500000000000000284217",
    "billing_cycle": null,
    "end": "469158.41834487546897252775",
    "human_interval": null,
    "id": "39501157",
    "initial": "469102.96834487546896968558",
    "interval": null,
    "poll_time": "2014-06-05T07:16:04.926285+00:00",
    "reason": "Payment through card - 3fe9a3bc-ec81-11e3-bf8f-00259082cfa8",
    "resource_amount": "1",
    "time": "2014-06-05T07:16:04.926273+00:00"
  },
  {
    "amount": "-77.2300000000000000397904",
    "billing_cycle": null,
    "end": "469102.96834487546896968558",
    "human_interval": null,
    "id": "39501156",
    "initial": "469025.73834487546896570654",

```

```

    "interval": null,
    "poll_time": "2014-06-05T07:16:01.585853+00:00",
    "reason": "Payment through card - 3dca136e-ec81-11e3-bf8f-00259082cdfa8",
    "resource_amount": "1",
    "time": "2014-06-05T07:16:01.585840+00:00"
  },
  {
    "amount": "0.0063399375000000000000",
    "billing_cycle": 105126,
    "end": "469025.73834487546896570654",
    "human_interval": "2 minutes",
    "id": "39498298",
    "initial": "469025.74468481296896570654",
    "interval": 135,
    "poll_time": "2014-06-05T06:31:06.554201+00:00",
    "reason": "Burst: 8.50 GHz of cpu for 2 minutes at 2014-06-05 06:31",
    "resource_amount": "8500",
    "time": "2014-06-05T06:33:52.255963+00:00"
  },
  {
    "amount": "0.0003150000000000000000",
    "billing_cycle": 105126,
    "end": "469025.74468481296896570654",
    "human_interval": "2 minutes",
    "id": "39498297",
    "initial": "469025.74499981296896570654",
    "interval": 135,
    "poll_time": "2014-06-05T06:31:06.554201+00:00",
    "reason": "Burst: 0.50 GB of mem for 2 minutes at 2014-06-05 06:31",
    "resource_amount": "536870912",
    "time": "2014-06-05T06:33:52.244645+00:00"
  },
  {
    "amount": "0.0001453472222222222222",
    "billing_cycle": 105124,
    "end": "469025.74499981296896570654",
    "human_interval": "5 minutes",
    "id": "39497582",
    "initial": "469025.74514516019118792876",
    "interval": 299,
    "poll_time": "2014-06-05T06:21:06.570020+00:00",
    "reason": "Burst: 4.50 GB of dssd for 5 minutes at 2014-06-05 06:21",
    "resource_amount": "4831838208",
    "time": "2014-06-05T06:23:51.102193+00:00"
  },
  {
    "amount": "-55.4500000000000000284217",
    "billing_cycle": null,
    "end": "469025.74514516019118792876",
    "human_interval": null,
    "id": "39496879",
    "initial": "468970.29514516019118508659",
    "interval": null,
    "poll_time": "2014-06-05T06:16:03.979389+00:00",
    "reason": "Payment through card - dc2f7084-ec78-11e3-bf8f-00259082cdfa8",
    "resource_amount": "1",
    "time": "2014-06-05T06:16:03.979376+00:00"
  },

```

```

    {
      "amount": "-77.23000000000000397904",
      "billing_cycle": null,
      "end": "468970.29514516019118508659",
      "human_interval": null,
      "id": "39496878",
      "initial": "468893.06514516019118110755",
      "interval": null,
      "poll_time": "2014-06-05T06:15:58.310868+00:00",
      "reason": "Payment through card - d88fbc54-ec78-11e3-bf8f-00259082cfa8",
      "resource_amount": "1",
      "time": "2014-06-05T06:15:58.310852+00:00"
    },
    {
      "amount": "0.00536987500000000000",
      "billing_cycle": 105114,
      "end": "468893.06514516019118110755",
      "human_interval": "2 minutes",
      "id": "39494022",
      "initial": "468893.07051503519118110755",
      "interval": 133,
      "poll_time": "2014-06-05T05:31:06.501327+00:00",
      "reason": "Burst: 7.50 GHz of cpu for 2 minutes at 2014-06-05 05:31",
      "resource_amount": "7500",
      "time": "2014-06-05T05:33:52.682096+00:00"
    },
    {
      "amount": "0.00014583333333333333",
      "billing_cycle": 105112,
      "end": "468893.07051503519118110755",
      "human_interval": "5 minutes",
      "id": "39493319",
      "initial": "468893.07066086852451444088",
      "interval": 300,
      "poll_time": "2014-06-05T05:21:06.511910+00:00",
      "reason": "Burst: 4.50 GB of dssd for 5 minutes at 2014-06-05 05:21",
      "resource_amount": "4831838208",
      "time": "2014-06-05T05:23:50.866953+00:00"
    },
    {
      "amount": "-55.45000000000000284217",
      "billing_cycle": null,
      "end": "468893.07066086852451444088",
      "human_interval": null,
      "id": "39492621",
      "initial": "468837.62066086852451159871",
      "interval": null,
      "poll_time": "2014-06-05T05:15:59.277046+00:00",
      "reason": "Payment through card - 78fc2118-ec70-11e3-8c3b-00259082cfa8",
      "resource_amount": "1",
      "time": "2014-06-05T05:15:59.277034+00:00"
    },
    {
      "amount": "-77.23000000000000397904",
      "billing_cycle": null,
      "end": "468837.62066086852451159871",
      "human_interval": null,
      "id": "39492620",

```

```

        "initial": "468760.39066086852450761967",
        "interval": null,
        "poll_time": "2014-06-05T05:15:55.898020+00:00",
        "reason": "Payment through card - 76a699d4-ec70-11e3-8c3b-00259082cfa8",
        "resource_amount": "1",
        "time": "2014-06-05T05:15:55.898007+00:00"
    }
  ]
}

```

### 31.4.3 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "amount": {
      "blank": false,
      "default": 0,
      "help_text": "Amount of the operation, positive for debits, negative for credits",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    },
    "billing_cycle": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Billing cycle that generated this charge",
      "nullable": true,
      "readonly": false,
      "type": "integer",
      "unique": false
    },
    "end": {
      "blank": false,
      "default": 0,
      "help_text": "Amount of money after the operation",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    },
    "human_interval": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "Human readable interval of bill entry",
      "nullable": true,

```

```

        "readonly": false,
        "type": "string",
        "unique": false
    },
    "id": {
        "blank": false,
        "default": "",
        "help_text": "Unicode string data. Ex: \"Hello World\"",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": true
    },
    "initial": {
        "blank": false,
        "default": 0,
        "help_text": "Amount of money before the operation",
        "nullable": false,
        "readonly": false,
        "type": "decimal",
        "unique": false
    },
    "interval": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Interval of bill entry",
        "nullable": true,
        "readonly": false,
        "type": "integer",
        "unique": false
    },
    "poll_time": {
        "blank": false,
        "default": "2014-06-05T09:41:58.809494+00:00",
        "help_text": "A date & time as a string. Ex: \"2010-11-10T03:07:43\"",
        "nullable": false,
        "readonly": false,
        "type": "datetime",
        "unique": false
    },
    "reason": {
        "blank": false,
        "default": "No default provided.",
        "help_text": "Description of the operation",
        "nullable": false,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    "resource_amount": {
        "blank": false,
        "default": 1,
        "help_text": "Resource amount",
        "nullable": true,
        "readonly": false,
        "type": "string",
        "unique": false
    },
    },

```

```

        "time": {
            "blank": false,
            "default": "2014-06-05T09:41:58.809480+00:00",
            "help_text": "A date & time as a string. Ex: \"2010-11-10T03:07:43\"",
            "nullable": false,
            "readonly": false,
            "type": "datetime",
            "unique": false
        }
    },
    "filtering": {
        "billing_cycle": 1,
        "time": 1
    },
    "ordering": [
        "time"
    ]
}

```

## 31.5 Discounts

### 31.5.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

### 31.5.2 Listing

#### GET /discount/

Get discount information.

**statuscode 200** no error

#### Example request:

```

GET /api/2.0/discount/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```

#### Example response:

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 0,
    "offset": 0,
    "total_count": 5
  },
  "objects": [

```

```

    {
      "period": "3 months",
      "value": "0.0300000000"
    },
    {
      "period": "6 months",
      "value": "0.1000000000"
    },
    {
      "period": "1 year",
      "value": "0.2500000000"
    },
    {
      "period": "2 years",
      "value": "0.3500000000"
    },
    {
      "period": "3 years",
      "value": "0.4500000000"
    }
  ]
}

```

### 31.5.3 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 0,
  "fields": {
    "period": {
      "blank": false,
      "default": "No default provided.",
      "help_text": "The minimum period for this discount",
      "nullable": true,
      "readonly": false,
      "type": "string",
      "unique": false
    },
    "value": {
      "blank": false,
      "default": 0,
      "help_text": "The value of the discount",
      "nullable": false,
      "readonly": false,
      "type": "decimal",
      "unique": false
    }
  }
}

```

```
}  
}
```

## 31.6 Current usage

### 31.6.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

---

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 31.6.2 Listing

#### **GET /currentusage/**

Get the current usage of the user.

#### **Status Codes**

- 200 – no error

#### **Example request:**

```
GET /api/2.0/currentusage/ HTTP/1.1  
Content-Type: application/json  
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXN1cnZlIGl0IDop
```

#### **Example response:**

```
HTTP/1.1 200 OK  
Content-Type: application/json; charset=utf-8  
  
{  
  "balance": {  
    "balance": "155367.99237092264288897986",  
    "currency": "EUR"  
  },  
  "usage": {  
    "amd_cpu": {  
      "burst": 0,  
      "subscribed": 10000,  
      "using": 0  
    },  
    "amd_mem": {  
      "burst": 0,  
      "subscribed": 17179869184,  
      "using": 0  
    },  
    "cpu": {  
      "burst": 0,  
      "subscribed": 10000,  
      "using": 0  
    },  
    "dssd": {
```



```
    "burst": 0,  
    "subscribed": 32212254720,  
    "using": 30064771072  
  },  
  "ip": {  
    "burst": 0,  
    "subscribed": 1,  
    "using": 1  
  },  
  "mem": {  
    "burst": 0,  
    "subscribed": 17179869184,  
    "using": 0  
  },  
  "msft_7jq_00341": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "msft_7nq_00302": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "msft_p73_04837_core": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "msft_tfa_00523": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "sms": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "sparc_t4_cpu": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "sparc_t4_mem": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "ssd": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  },  
  "tx": {  
    "burst": 0,  
    "subscribed": 0,  
    "using": 0  
  }
```

```

    },
    "vlan": {
      "burst": 0,
      "subscribed": 1,
      "using": 1
    },
    "vlan_ecx": {
      "burst": 0,
      "subscribed": 0,
      "using": 0
    },
    "zadara": {
      "burst": 0,
      "subscribed": 0,
      "using": 0
    }
  }
}

```

### 31.6.3 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "balance": {
      "default": "No default provided.",
      "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
      "readonly": false,
      "required": true,
      "type": "dict"
    },
    "usage": {
      "default": "No default provided.",
      "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
      "readonly": false,
      "required": true,
      "type": "dict"
    }
  },
  "filtering": {
    "name": "exact",
    "name__contains": "exact",
    "tag": "exact",
    "uuid": "exact"
  }
}

```

## 31.7 Licenses list

### 31.7.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

### 31.7.2 Listing

#### GET /licenses/

Get the licenses available on the cloud. The type of the license can be one of:

##### Status Codes

- **200** – no error
- **install** - These licenses are billed per installation, regardless of whether it is attached to a running server or not.
- **instance** - These licenses are billed per running instance of a server. A license attached to a guest that's stopped is not billed.
- **stub** - These licenses are billed per a metric specified by the customer (i.e. per number of users license)

The user metric field specifies what attribute on the instance of the server is used for determining the number of licenses. For example, "smp" will count one license for each CPU/core in the virtual machine.

##### Example request:

```
GET /api/2.0/licenses/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

##### Example response:

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
    "total_count": 4
  },
  "objects": [
    {
      "burstable": false,
      "long_name": "SQL Server Enterprise Edition",
      "name": "msft_7jq_00341",
      "resource_uri": "/api/2.0/licenses/13/",
      "type": "instance",
      "user_metric": "smp"
    }
  ]
}
```

```

        "burstable": false,
        "long_name": "SQL Server Standard Edition",
        "name": "msft_7nq_00302",
        "resource_uri": "/api/2.0/licenses/14/",
        "type": "instance",
        "user_metric": "smp"
    },
    {
        "burstable": true,
        "long_name": "Windows Server",
        "name": "msft_p73_04837_core",
        "resource_uri": "/api/2.0/licenses/12/",
        "type": "instance",
        "user_metric": "smp"
    },
    {
        "burstable": false,
        "long_name": "SQL Server Web",
        "name": "msft_tfa_00523",
        "resource_uri": "/api/2.0/licenses/15/",
        "type": "instance",
        "user_metric": "smp"
    }
}

```

### 31.7.3 Schema

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "burstable": {
      "blank": false,
      "default": false,
      "help_text": "Whether this resource can be used on burst",
      "nullable": false,
      "readonly": false,
      "type": "boolean",
      "unique": false
    },
    "long_name": {
      "blank": false,
      "default": "",
      "help_text": "A human readable name for the resource.",
      "nullable": false,
      "readonly": false,
      "type": "string",

```

```
    "unique": false
  },
  "name": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Name that should be used when purchasing",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": true
  },
  "resource_uri": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "Unicode string data. Ex: \"Hello World\"",
    "nullable": false,
    "readonly": true,
    "type": "string",
    "unique": false
  },
  "type": {
    "blank": false,
    "default": "instance",
    "help_text": "Type of billing",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  },
  "user_metric": {
    "blank": false,
    "default": "No default provided.",
    "help_text": "The metric that the user is charged for",
    "nullable": false,
    "readonly": false,
    "type": "string",
    "unique": false
  }
}
}
```



---

## Burst Usage

---

### 32.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 32.2 Listing

**GET** `/burstusage/`

Get the burst usage of the authenticated user for the specified period (last 30 days by default).

**Status Codes**

- **200** – no error

**Example request:**

```
GET /api/2.0/burstusage/ HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

**Example response:**

```
HTTP/1.0 200 OK
Content-Type: application/json; charset=utf-8

{
  "objects": [
    {
      "uuid": "75fbf5d6-4ef6-11e4-9ce3-8bd2cacc5639",
      "amount": 0.010000000000000000,
      "resource_type": "ip",
      "usage": 1
    },
    {
      "uuid": "f2669d85-2dbd-4f0d-8a1f-40a06deb3233",
      "amount": 0.030100000000000000,
      "resource_type": "cpu",
```

```

        "usage": 12000
    },
    {
        "uuid": "1e170e6e-5339-477d-a29d-c3e6533a1825",
        "amount": 0.020000000000000000,
        "resource_type": "mem",
        "usage": 9663676416
    },
    {
        "uuid": "42b2af55-ec3c-4066-a152-66d201c59576",
        "amount": 0.010000000000000000,
        "resource_type": "dssd",
        "usage": 107374182400
    },
    ]
}

```

## 32.3 Filtering

It's possible to specify period of burst usage using *filtering* by date:

- Exact: `?date=2014-10-21`
- Lower than: `?date__lt=2014-10-21`
- Lower than or equal: `?date__lte=2014-10-21`
- Greater than: `?date__gt=2014-10-21`
- Greater than or equal: `?date__gte=2014-10-21`

### Example for retrieving burst usage for the whole July 2014:

```

GET /api/2.0/burstusage/?date__gte=2014-07-01&date__lt=2014-08-01 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop

```



---

## Daily Burst Usage

---

### 33.1 Allowed HTTP methods

Method	Description
GET	get / list object/s

**Note:** See [RFC 2616#section-9](#) for more details on HTTP methods semantics

---

### 33.2 Listing

#### GET /dailyburstusage/

Get the daily burst usage of the authenticated user for the specified period (last 30 days by default).

#### Status Codes

- 200 – no error

#### Example request:

```
GET /api/2.0/dailyburstusage/?date__gt=2014-11-15&date__lt=2014-11-19 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYSBjb29raWUsIHlvdSBkZXNlcnZlIG10IDop
```

#### Example response:

```
HTTP/1.0 200 OK
Content-Type: application/json; charset=utf-8

{
  "meta": {
    "limit": 20,
    "offset": 0,
    "total_count": 4
  },
  "objects": [
    {
      "amount": "0.00886683986848225317",
      "date": "2014-11-17",
      "resource_type": "dssd",
      "usage": 309237645312
    }
  ]
}
```

```
    },
    {
      "amount": "0.00886684598104320994",
      "date": "2014-11-16",
      "resource_type": "dssd",
      "usage": 309237645312
    },
    {
      "amount": "0.00514153897280246914",
      "date": "2014-11-18",
      "resource_type": "dssd",
      "usage": 179314884608
    },
    {
      "amount": "0.00886683701903935188",
      "date": "2014-11-15",
      "resource_type": "dssd",
      "usage": 309237645312
    }
  ]
}
```

### 33.3 Filtering

It's possible to specify period of burst usage using *filtering* by date:

- Lower than: `?date__lt=2014-10-21`
- Greater than: `?date__gt=2014-10-21`

**Example for retrieving burst usage for the whole July 2014:**

```
GET /api/2.0/dailyburstusage/?date__gt=2014-07-01&date__lt=2014-08-01 HTTP/1.1
Content-Type: application/json
Authorization: Basic SWYgeW91IGZvdW5kIHRoaXMsIGhhdmUgYYSBjb29raWUsIHlvdSBkZXNlcnZlIGl0IDop
```

---

**Note:** The date is actually a full time, which means that 2014-11-11 is actually 2014-11-11 00:00. This matters when trying to filter because when using less than, it will not include the day, whereas it will be included for greater than.

---



```
        "subscribed": 0,
        "using": 0
    },
    "dssd": {
        "burst": 0,
        "subscribed": 0,
        "using": 0
    },
    "ip": {
        "burst": 0,
        "subscribed": 0,
        "using": 0
    },
    "mem": {
        "burst": 0,
        "subscribed": 0,
        "using": 0
    },
    "ssd": {
        "burst": 0,
        "subscribed": 0,
        "using": 0
    },
    "vlan": {
        "burst": 0,
        "subscribed": 0,
        "using": 0
    }
}
}
```

### 34.2.1 Request schema

None.

### 34.2.2 Response schema

```
{
  "allowed_detail_http_methods": [
    "get"
  ],
  "allowed_list_http_methods": [
    "get"
  ],
  "default_format": "application/json",
  "default_limit": 20,
  "fields": {
    "balance": {
      "default": "No default provided.",
      "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
      "readonly": false,
      "required": true,
      "type": "dict"
    },
    "usage": {
```

```
        "default": "No default provided.",
        "help_text": "A dictionary of data. Ex: {'price': 26.73, 'name': 'Daniel'}",
        "readonly": false,
        "required": true,
        "type": "dict"
    }
}
```



---

## Asynchronous server

---

### 35.1 Authentication

In order to use the asynchronous server, you must first authenticate through the API. This will give you a cookie that is valid for 2 minutes and that has to be used when connecting to the server.

**statuscode 200** no error

**Example request:**

```
POST /2.0/accounts/action/?do=authenticate_asynchronous HTTP/1.1
Host: api.cloudsigma.com
Accept: application/json
Authorization: Basic dGVzdHVzZXJAY2xvdWRzaWdtYS5jb206dmJudmJu
```

**Example response:**

```
HTTP/1.0 200 OK
Content-Type: application/json; charset=utf-8
Set-Cookie: async_auth=YTlhZmMwYTctOWYzNi00ZmUzLThlYmUtMGZiOGZlODE0ZmQx|1356012032|f785e3d8083c76662
{}

```

Using this cookie will allow you to connect to the server at `/2.0/websocket`

### 35.2 Information

The websocket server sends frames every time one of the following changes:

- Subscriptions
- Drives
- Servers / VMs
- Networking
- *Balance*
- Profile
- Jobs

**The frame is a JSON object that contains the following fields:**

- `resource_type`: A text field that describes the type of resource covered by the notification.
- `resource_uri`: The URI of the resource that has changed.

The JSON object might contain a 'object' key, that will contain the full blown resource referenced by the notification, JSON encoded.



---

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---

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