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# **cdrouter.py Documentation**

***Release 0.9.5***

**QA Cafe**

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# CHAPTER 1

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## Introduction

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cdrouter is a simple Python wrapper for the CDRouter Web API. <https://support.qacafe.com/cdrouter/cdrouter-web-api/>

For more information on CDRouter, please visit <http://www.qacafe.com/>.

## 1.1 Install/Upgrade

cdrouter is available on [PyPI](#). To install the latest stable version from PyPI:

```
$ pip install -U cdrouter
```

cdrouter supports Python 3.5 or newer.

## 1.2 Usage

First create a *CDRouter* object, passing it the URL of your CDRouter system, for example `http://localhost`, `https://cdrouter.example.com` or `http://172.20.0.1:8015`. If your CDRouter system uses a self-signed certificate for HTTPS connections (the default), you will need to pass in `insecure=True` to disable certificate validation. If Automatic Login is not enabled on your CDRouter system, you will need to provide authentication credentials by passing in an API token via the `token` parameter or a username and password via the `username` and `password` parameters. If `token` is not specified, it will default to the value of the `CDROUTER_API_TOKEN` environment variable. *CDRouter* will prompt for a username and password as necessary if Automatic Login is not enabled and an API token is not provided.

```
import time

from cdrouter import CDRouter
from cdrouter.cdrouter import CDRouterError
from cdrouter.filters import Field as field
```

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```
from cdrouter.jobs import Job
from cdrouter.jobs import Options

c = CDRouter('http://localhost', token='deadbeef')

for p in c.packages.iter_list(filter=field('tags').contains('noretry')):
    print('Launching package {}'.format(p.name))

    try:
        j = c.jobs.launch(Job(package_id=p.id, options=Options(extra_cli_args='--
→testvar myvar=example'))
    except CDRouterError as ce:
        print('Error launching job: {}'.format(ce))
        continue

    while j.result_id == None:
        time.sleep(1)
        j = c.jobs.get(j.id)

    print('    Result-ID: {}'.format(j.result_id))

print('done.')
```

More examples of using cdrouter can be found [here](#). Please see the *Reference* page for more information on available fields and methods for each class.

Python client for the CDRouter Web API.

## 2.1 CDRouter

### 2.1.1 CDRouter

```
class cdrouter.CDRouter(base, token=None, username=None, password=None, _getuser=<function  
_getuser_default>, _getpass=<function _getpass_default>, retries=3, in-  
secure=False)
```

Service for accessing the CDRouter Web API.

#### Parameters

- **base** – Base HTTP or HTTPS URL for CDRouter system as a string, optionally including a port. For example *http://localhost*, *http://cdrouter.lan:8015* or *https://127.0.0.1*.
- **token** – (optional) CDRouter API token as a string. Not required if Automatic Login is enabled. If omitted, value will be taken from CDRouter\_API\_TOKEN environment variable.
- **username** – (optional) Username as string. Can be omitted if **token** is specified or Automatic Login is enabled. If omitted, `_getuser` will be called when a username is required.
- **password** – (optional) Password as string. Can be omitted if **token** is specified or Automatic Login is enabled. If omitted, `_getpass` will be called when a password is required.
- **\_getuser** – (optional) If username is *None*, function to be called as `_getuser(base)` which returns a username as a string. If `_getuser` is *None*, `cdrouter` will print a prompt to stdout and read the username from stdin.
- **\_getpass** – (optional) If password is *None*, a function to be called as `_getpass(base, username)` which returns user's password as a string. If `_getpass` is *None*, `cdrouter` will print a password prompt to stdout and read the password from stdin.

- **retries** – (optional) The number of times to retry authentication with the CDRouter system before giving up as an int.
- **insecure** – (optional) If bool *True* and *base* is an HTTPS URL, skip certificate verification and allow insecure connections to the CDRouter system.

**alerts = None**

*alerts.AlertsService* object

**annotations = None**

*annotations.AnnotationsService* object

**attachments = None**

*attachments.AttachmentsService* object

**authenticate** (*retries=3*)

Set API token by authenticating via username/password.

**Parameters** **retries** – Number of authentication retries to make before giving up as an int.

**Returns** Learned API token

**Return type** string

**captures = None**

*captures.CapturesService* object

**configs = None**

*configs.ConfigsService* object

**devices = None**

*devices.DevicesService* object

**exports = None**

*exports.ExportsService* object

**highlights = None**

*highlights.HighlightsService* object

**history = None**

*history.HistoryService* object

**imports = None**

*imports.ImportsService* object

**jobs = None**

*jobs.JobsService* object

**packages = None**

*packages.PackagesService* object

**results = None**

*results.ResultsService* object

**system = None**

*system.SystemService* object

**tags = None**

*tags.TagsService* object

**tests = None**

*testresults.TestResultsService* object

**testsuites = None**

*testsuites.TestsuitesService* object



```
users = None
users.UsersService object
```

## 2.1.2 CDRouterError

```
class cdrouter.cdrouter.CDRouterError(*args, **kwargs)
    Class for representing CDRouter Web API errors.
```

## 2.1.3 Links

```
class cdrouter.cdrouter.Links(**kwargs)
    Class representing paging information returned by list calls to the CDRouter Web API.
```

### Parameters

- **first** – (optional) First page number as an int.
- **last** – (optional) Last page number as an int.
- **current** – (optional) Current page number as an int.
- **total** – (optional) Total element count across all pages as an int.
- **limit** – (optional) Resources per page limit as an int.
- **next** – (optional) Next page number as an int.
- **prev** – (optional) Previous page number as an int.

## 2.1.4 Share

```
class cdrouter.cdrouter.Share(**kwargs)
    Model for CDRouter Shares.
```

### Parameters

- **user\_id** – (optional) User ID as an int.
- **read** – (optional) Bool *True* if reading is allowed.
- **write** – (optional) Bool *True* if writing is allowed.
- **execute** – (optional) Bool *True* if executing is allowed.

## 2.2 Filters

### 2.2.1 Field

```
class cdrouter.filters.Field(*args)
    Class for constructing CDRouter Web API filters. Field objects can be passed to filter parameters to make constructing filters easier.
```

The `value` parameter passed to Field methods is converted to a string using the builtin `str` function. Bool values are additionally lowercased such that bool `True` becomes string `'true'` and `False` becomes string `'false'`. The Field methods `contains`, `contained_by` and `overlaps` accept a variable number of values which are converted into a list in accordance with the API's syntax. For example, the int values `1, 2,`

3 is converted to the string '{1,2,3}' and the string values 'one', 'two', 'three' is converted to the string '{one,two,three}'.

Usage:

```
from cdrouter.filters import Field as field
# each pair of filters below are equivalent
c.packages.list(filter=[
    field('id').eq(123),
    'id=123',
    #
    field('use_as_testlist').ne(True),
    'use_as_testlist!=true',
    #
    field('name').not_().match('^(foo|bar)$', ignorecase=True),
    'name!~*(foo|bar)$',
    #
    field('tags').contains('foo', 'bar', 'baz'),
    'tags@>{foo,bar,baz}',
])
```

See [this](#) page for more details on CDRouter Web API filters.

**contained\_by** (\*args)

Construct an array contained by (<@) filter.

**Parameters** **args** – Filter values

**Returns** `filters.Field` object

**Return type** *filters.Field*

**contains** (\*args)

Construct an array contains (@>) filter.

**Parameters** **args** – Filter values

**Returns** `filters.Field` object

**Return type** *filters.Field*

**eq** (value)

Construct an equal to (=) filter.

**Parameters** **value** – Filter value

**Returns** `filters.Field` object

**Return type** *filters.Field*

**ge** (value)

Construct a greater than or equal to (>=) filter.

**Parameters** **value** – Filter value

**Returns** `filters.Field` object

**Return type** *filters.Field*

**gt** (value)

Construct a greater than (>) filter.

**Parameters** **value** – Filter value

**Returns** `filters.Field` object

**Return type** *filters.Field*

**le** (*value*)

Construct a less than or equal to ( $\leq$ ) filter.

**Parameters** **value** – Filter value

**Returns** *filters.Field* object

**Return type** *filters.Field*

**lt** (*value*)

Construct a less than ( $<$ ) filter.

**Parameters** **value** – Filter value

**Returns** *filters.Field* object

**Return type** *filters.Field*

**match** (*value*, *ignorecase=False*)

Construct a regexp match ( $\sim$ ) filter. Combine with `not_` method to construct a negative regexp match ( $!\sim$ ) filter.

**Parameters**

- **value** – Filter value
- **ignorecase** – If bool *True*, make match case insensitive ( $\sim^*$ ,  $!\sim^*$ )

**Returns** *filters.Field* object

**Return type** *filters.Field*

**ne** (*value*)

Construct a not equal to ( $\neq$ ) filter.

**Parameters** **value** – Filter value

**Returns** *filters.Field* object

**Return type** *filters.Field*

**not\_** ()

Negate the filter. Not supported by `contains`, `contained_by` or `overlaps` methods.

**Returns** *filters.Field* object

**Return type** *filters.Field*

**overlaps** (*\*args*)

Construct an array overlaps ( $\&\&$ ) filter.

**Parameters** **args** – Filter values

**Returns** *filters.Field* object

**Return type** *filters.Field*

## 2.3 Configs

### 2.3.1 ConfigsService

**class** `cdrouter.configs.ConfigsService` (*service*)

Service for accessing CDRouter Configs.

**bulk\_copy** (*ids*)

Bulk copy a set of configs.

**Parameters** *ids* – Int list of config IDs.

**Returns** `configs.Config` list

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)

Bulk delete a set of configs.

**Parameters**

- *ids* – (optional) Int list of config IDs.
- *filter* – (optional) String list of filters.
- *type* – (optional) *union* or *inter* as string.
- *all* – (optional) Apply to all if bool *True*.

**bulk\_edit** (*\_fields, ids=None, filter=None, type=None, all=False, testvars=None*)

Bulk edit a set of configs.

**Parameters**

- *\_fields* – `configs.Config` object
- *ids* – (optional) Int list of config IDs.
- *filter* – (optional) String list of filters.
- *type* – (optional) *union* or *inter* as string.
- *all* – (optional) Apply to all if bool *True*.
- *testvars* – (optional) `configs.ConfigTestvars` list

**bulk\_edit\_testvars** (*id, testvars*)

Bulk edit a config's testvars.

**Parameters**

- *id* – Config ID as an int.
- *testvars* – `configs.Testvar` list

**Returns** `configs.Testvar` list

**bulk\_export** (*ids*)

Bulk export a set of configs.

**Parameters** *ids* – Int list of config IDs.

**Return type** tuple (*io.BytesIO*, *'filename'*)

**bulk\_upgrade** (*ids=None, filter=None, type=None, all=False*)

Bulk upgrade a set of configs.

**Parameters**

- **ids** – (optional) Int list of config IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**check\_config** (*contents*)

Process config contents with cdrouter-cli -check-config.

**Parameters** **contents** – Config contents as string.

**Returns** `configs.CheckConfig` object

**Return type** `configs.CheckConfig`

**create** (*resource*)

Create a new config.

**Parameters** **resource** – `configs.Config` object

**Returns** `configs.Config` object

**Return type** `configs.Config`

**create\_testvar\_group** (*id*, *group*)

Create a testvar group in a config. Creating a testvar group is equivalent to removing the IGNORE keyword from the group in the config.

**Parameters**

- **id** – Config ID as an int.
- **group** – Testvar group as string.

**delete** (*id*)

Delete a config.

**Parameters** **id** – Config ID as an int.

**delete\_testvar** (*id*, *name*, *group=None*)

Delete a testvar in a config. Deleting a testvar unsets any explicitly configured value for it in the config.

**Parameters**

- **id** – Config ID as an int.
- **name** – Testvar name as string.
- **group** – (optional) Testvar group as string.

**delete\_testvar\_group** (*id*, *group*)

Delete a testvar group in a config. Deleting a testvar group is equivalent to adding the IGNORE keyword to the group in the config.

**Parameters**

- **id** – Config ID as an int.
- **group** – Testvar group as string.

**edit** (*resource*)

Edit a config.

**Parameters** **resource** – `configs.Config` object

**Returns** `configs.Config` object

**Return type** *configs.Config*

**edit\_shares** (*id*, *user\_ids*)

Edit shares for a config.

**Parameters**

- **id** – Config ID as an int.
- **user\_ids** – User IDs as int list.

**Returns** *cdrouter.Share* list

**edit\_testvar** (*id*, *resource*)

Edit a testvar in a config.

**Parameters**

- **id** – Config ID as an int.
- **resource** – *configs.Testvar* object.

**Returns** *configs.Testvar* object

**Return type** *configs.Testvar*

**export** (*id*)

Export a config.

**Parameters** **id** – Config ID as an int.

**Return type** tuple (*io.BytesIO*, 'filename')

**get** (*id*)

Get a config.

**Parameters** **id** – Config ID as an int.

**Returns** *configs.Config* object

**Return type** *configs.Config*

**get\_by\_name** (*name*)

Get a config by name.

**Parameters** **name** – Config name as string.

**Returns** *configs.Config* object

**Return type** *configs.Config*

**get\_interfaces** (*contents*)

Process config contents with *cdrouter-cli -print-interfaces*.

**Parameters** **contents** – Config contents as string.

**Returns** *configs.Interfaces* list

**get\_networks** (*contents*)

Process config contents with *cdrouter-cli -print-networks-json*.

**Parameters** **contents** – Config contents as string.

**Returns** *configs.Networks* object

**Return type** *configs.Networks*

**get\_new** ()

Get output of *cdrouter-cli -new-config*.

**Return type** string

**get\_plaintext** (*id*)

Get a config as plaintext.

**Parameters** *id* – Config ID as an int.

**Return type** string

**get\_shares** (*id*)

Get shares for a config.

**Parameters** *id* – Config ID as an int.

**Returns** `cdrouter.Share` list

**get\_testvar** (*id*, *name*, *group=None*)

Get a testvar from a config.

**Parameters**

- *id* – Config ID as an int.
- *name* – Testvar name as string.
- *group* – (optional) Testvar group as string.

**Returns** `configs.Testvar` object

**Return type** `configs.Testvar`

**iter\_list** (*\*args*, *\*\*kwargs*)

Get a list of configs. Whereas `list` fetches a single page of configs according to its `limit` and `page` arguments, `iter_list` returns all configs by internally making successive calls to `list`.

**Parameters**

- *args* – Arguments that `list` takes.
- *kwargs* – Optional arguments that `list` takes.

**Returns** `configs.Config` list

**list** (*filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of configs, using summary representation by default (see `detailed` parameter).

**Parameters**

- *filter* – (optional) Filters to apply as a string list.
- *type* – (optional) *union* or *inter* as string.
- *sort* – (optional) Sort fields to apply as string list.
- *limit* – (optional) Limit returned list length.
- *page* – (optional) Page to return.
- *detailed* – (optional) Return all fields if Bool *True*.

**Returns** `configs.Page` object

**list\_testvars** (*id*)

Get a list of a config's testvars.

**Parameters** *id* – Config ID as an int.

**Returns** `configs.Testvar` list

**lock** (*id*)

Lock a config. Locking prevents the config from being modified or deleted until it is unlocked.

**Parameters** **id** – Config ID as an int.

**Returns** `configs.Config` object

**Return type** `configs.Config`

**unlock** (*id*)

Unlock a config. Unlocking a locked config allows it to be modified or deleted once again.

**Parameters** **id** – Config ID as an int.

**Returns** `configs.Config` object

**Return type** `configs.Config`

**upgrade\_config** (*contents*)

Process config contents with `cdrouter-cli -upgrade-config`.

**Parameters** **contents** – Config contents as string.

**Returns** `configs.UpgradeConfig` object

**Return type** `configs.UpgradeConfig`

## 2.3.2 Config

**class** `cdrouter.configs.Config` (**\*\*kwargs**)

Model for CDRouter Configs.

**Parameters**

- **id** – (optional) Config ID as an int.
- **name** – (optional) Config name as string.
- **description** – (optional) Config description as string.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if config is locked.
- **contents** – (optional) Config contents as string.
- **user\_id** – (optional) User ID as an int.
- **result\_id** – (optional) Result ID as an int (if a config snapshot).
- **tags** – (optional) Tags as string list.
- **note** – (optional) Note as string.
- **interfaces** – (optional) `configs.Interfaces` list (if a config snapshot).

## 2.3.3 Page

**class** `cdrouter.configs.Page`

Named tuple for a page of list response data.

**Parameters**



- **data** – `configs.Config` list
- **links** – `cdrouter.Links` object

### 2.3.4 ConfigError

**class** `cdrouter.configs.ConfigError(**kwargs)`  
Model for CDRouter Check Config Error.

**Parameters**

- **lines** – (optional) Line numbers as string list.
- **error** – (optional) Error message as string.

### 2.3.5 CheckConfig

**class** `cdrouter.configs.CheckConfig(**kwargs)`  
Model for CDRouter Check Config.

**Parameters** **errors** – (optional) `configs.ConfigError` list

### 2.3.6 UpgradeConfig

**class** `cdrouter.configs.UpgradeConfig(**kwargs)`  
Model for CDRouter Config Upgrades.

**Parameters**

- **success** – (optional) Bool *True* if successful.
- **output** – (optional) Output as string.

### 2.3.7 Networks

**class** `cdrouter.configs.Networks(**kwargs)`  
Model for CDRouter Config Networks.

**Parameters**

- **name** – (optional) Network name as string.
- **type** – (optional) Network type as string.
- **side** – (optional) Network side as string.
- **title** – (optional) Network title as string.
- **children** – (optional) `configs.Networks` list.

### 2.3.8 Interfaces

**class** `cdrouter.configs.Interfaces(**kwargs)`  
Model for CDRouter Config Interfaces.

**Parameters**

- **name** – (optional) Interface name (i.e. 'lan', 'wan', etc.) as string.

- **value** – (optional) Interface value (i.e. ‘eth0’, ‘eth1’, etc.) as string.
- **is\_wireless** – (optional) Bool *True* if interface is a wireless interface.
- **is\_ics** – (optional) Bool *True* if interface is the ICS interface.

## 2.3.9 Testvar

**class** `cdrouter.configs.Testvar` (*\*\*kwargs*)  
Model for CDRouter Config Testvars.

### Parameters

- **group** – (optional) Testvar group name as string.
- **name** – (optional) Testvar name as string.
- **value** – (optional) Testvar value as string.
- **default** – (optional) Testvar default value as string.
- **isdefault** – (optional) Bool *True* if testvar is set to default value.
- **line** – (optional) Config file line number as int.
- **action** – (optional) Action to perform on the testvar or group as string. Must be *set-testvar*, *delete-testvar*, *create-group* or *delete-group*. If not specified, defaults to *set-testvar*.

## 2.4 Devices

### 2.4.1 DevicesService

**class** `cdrouter.devices.DevicesService` (*service*)  
Service for accessing CDRouter Devices.

**bulk\_copy** (*ids*)  
Bulk copy a set of devices.

**Parameters** **ids** – Int list of device IDs.

**Returns** `devices.Device` list

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)  
Bulk delete a set of devices.

### Parameters

- **ids** – (optional) Int list of device IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_edit** (*\_fields, ids=None, filter=None, type=None, all=False*)  
Bulk edit a set of devices.

### Parameters

- **\_fields** – `devices.Device` object
- **ids** – (optional) Int list of device IDs.

- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_export** (*ids*)

Bulk export a set of devices.

**Parameters** **ids** – Int list of device IDs.

**Return type** tuple (*io.BytesIO*, *'filename'*)

**connect** (*id*)

Open proxy connection to a device's management interface.

**Parameters** **id** – Device ID as an int.

**Returns** *devices.Connection* object

**Return type** *devices.Connection*

**create** (*resource*)

Create a new device.

**Parameters** **resource** – *devices.Device* object

**Returns** *devices.Device* object

**Return type** *devices.Device*

**delete** (*id*)

Delete a device.

**Parameters** **id** – Device ID as an int.

**disconnect** (*id*)

Close proxy connection to a device's management interface.

**Parameters** **id** – Device ID as an int.

**edit** (*resource*)

Edit a device.

**Parameters** **resource** – *devices.Device* object

**Returns** *devices.Device* object

**Return type** *devices.Device*

**edit\_shares** (*id, user\_ids*)

Edit shares for a device.

**Parameters**

- **id** – Device ID as an int.
- **user\_ids** – User IDs as int list.

**Returns** *cdrouter.Share* list

**export** (*id*)

Export a device.

**Parameters** **id** – Device ID as an int.

**Return type** tuple (*io.BytesIO*, *'filename'*)

**get** (*id*)

Get a device.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.Device` object

**Return type** `devices.Device`

**get\_by\_name** (*name*)

Get a device by name.

**Parameters** *name* – Device name as string.

**Returns** `devices.Device` object

**Return type** `devices.Device`

**get\_connection** (*id*)

Get information on proxy connection to a device's management interface.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.Connection` object

**Return type** `devices.Connection`

**get\_shares** (*id*)

Get shares for a device.

**Parameters** *id* – Device ID as an int.

**Returns** `cdrouter.Share` list

**iter\_list** (\*args, \*\*kwargs)

Get a list of devices. Whereas `list` fetches a single page of devices according to its `limit` and `page` arguments, `iter_list` returns all devices by internally making successive calls to `list`.

**Parameters**

- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `devices.Device` list

**list** (*filter=None, type=None, sort=None, limit=None, page=None, detailed=None*)

Get a list of devices, using summary representation by default (see `detailed` parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `devices.Page` object

**lock** (*id*)

Lock a device. Locking prevents the device from being modified or deleted until it is unlocked.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.Device` object

**Return type** `devices.Device`

**power\_off** (*id*)

Power off a device using it's power off command.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.PowerCmd` object

**Return type** `devices.PowerCmd`

**power\_on** (*id*)

Power on a device using it's power on command.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.PowerCmd` object

**Return type** `devices.PowerCmd`

**unlock** (*id*)

Unlock a device. Unlocking a locked device allows it to be modified or deleted once again.

**Parameters** *id* – Device ID as an int.

**Returns** `devices.Device` object

**Return type** `devices.Device`

## 2.4.2 Device

**class** `cdrouter.devices.Device` (*\*\*kwargs*)  
Model for CDRouter Devices.

### Parameters

- **id** – (optional) Device ID as an int.
- **name** – (optional) Name as string.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if device is locked.
- **user\_id** – (optional) User ID as an int.
- **result\_id** – (optional) Result ID as an int (if a device snapshot).
- **attachments\_dir** – (optional) Filepath for attachments as string.
- **picture\_id** – (optional) Attachment ID for used for device picture as an int.
- **tags** – (optional) Tags as string list.
- **default\_ip** – (optional) Default IP as a string
- **default\_login** – (optional) Default login as a string
- **default\_password** – (optional) Default password as a string
- **default\_ssid** – (optional) Default SSID as a string
- **location** – (optional) Location as a string

- **device\_category** – (optional) Device category as a string
- **manufacturer** – (optional) Manufacturer as a string
- **manufacturer\_oui** – (optional) Manufacturer OUI as a string
- **model\_name** – (optional) Model name as a string
- **model\_number** – (optional) Model number as a string
- **description** – (optional) Description as a string
- **product\_class** – (optional) Product class as a string
- **serial\_number** – (optional) Serial number as a string
- **hardware\_version** – (optional) Hardware version as a string
- **software\_version** – (optional) Software version as a string
- **provisioning\_code** – (optional) Provisioning code as a string
- **note** – (optional) Note as a string
- **insecure\_mgmt\_url** – (optional) *True* if insecure HTTPS management URLs are allowed
- **mgmt\_url** – (optional) Management URL as a string
- **add\_mgmt\_addr** – (optional) *True* if address should be configured when opening proxy connection
- **mgmt\_interface** – (optional) Interface on which to configure address as string
- **mgmt\_addr** – (optional) Address to configure as string
- **power\_on\_cmd** – (optional) Command to run to power on device as string
- **power\_off\_cmd** – (optional) Command to run to power off device as string

### 2.4.3 Page

**class** cdrouter.devices.**Page**

Named tuple for a page of list response data.

**Parameters**

- **data** – `devices.Device` list
- **links** – `cdrouter.Links` object

### 2.4.4 PowerCmd

**class** cdrouter.devices.**PowerCmd** (*\*\*kwargs*)

Model for CDRouter Device Power command result.

**Parameters** **output** – (optional) Output from power on/off command as string.

## 2.4.5 Connection

**class** `cdrouter.devices.Connection` (*\*\*kwargs*)  
Model for CDRouter Device Connections.

### Parameters

- **proxy\_port** – (optional) HTTP proxy port as an int.
- **proxy\_https** – (optional) HTTPS proxy port as an int.

## 2.5 Attachments

### 2.5.1 AttachmentsService

**class** `cdrouter.attachments.AttachmentsService` (*service*)

**create** (*id, fd, filename='attachment-name'*)  
Add an attachment to a device.

### Parameters

- **id** – Device ID as an int.
- **fd** – File-like object to upload.
- **filename** – (optional) Name to use for new attachment as a string.

**Returns** `attachments.Attachment` object

**Return type** `attachments.Attachment`

**delete** (*id, attid*)  
Delete a device's attachment.

### Parameters

- **id** – Device ID as an int.
- **attid** – Attachment ID as an int.

**download** (*id, attid*)  
Download a device's attachment.

### Parameters

- **id** – Device ID as an int.
- **attid** – Attachment ID as an int.

**Return type** tuple (*io.BytesIO, 'filename'*)

**edit** (*resource*)  
Edit a device's attachment.

**Parameters** **resource** – `attachments.Attachment` object

**Returns** `attachments.Attachment` object

**Return type** `attachments.Attachment`

**get** (*id, attid*)  
Get a device's attachment.

**Parameters**

- **id** – Device ID as an int.
- **attid** – Attachment ID as an int.

**Returns** `attachments.Attachment` object

**Return type** `attachments.Attachment`

**iter\_list** (*id*, \**args*, \*\**kwargs*)

Get a list of attachments. Whereas `list` fetches a single page of attachments according to its `limit` and `page` arguments, `iter_list` returns all attachments by internally making successive calls to `list`.

**Parameters**

- **id** – Device ID as an int.
- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `attachments.Attachment` list

**list** (*id*, *filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of a device's attachments, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Device ID as an int.
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `attachments.Page` object

**thumbnail** (*id*, *attid*, *size=None*)

Download thumbnail of a device's attachment. Attachment must be a GIF, JPEG or PNG image.

**Parameters**

- **id** – Device ID as an int.
- **attid** – Attachment ID as an int.
- **size** – (optional) Height in pixels of generated thumbnail.

**Return type** tuple (*io.BytesIO*, *'filename'*)

## 2.5.2 Attachment

**class** `cdrouter.attachments.Attachment` (\*\**kwargs*)

Model for CDRouter Attachments.

**Parameters**

- **id** – (optional) Attachment ID as an int.
- **name** – (optional) Name as string.



- **description** – (optional) Description as string.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **size** – (optional) Attachment size as an int.
- **path** – (optional) Filepath to attachment as string.
- **device\_id** – (optional) Device ID as an int.

### 2.5.3 Page

**class** `cdrouter.attachments.Page`

Named tuple for a page of list response data.

#### Parameters

- **data** – `attachments.Attachment` list
- **links** – `cdrouter.Links` object

## 2.6 Jobs

### 2.6.1 JobsService

**class** `cdrouter.jobs.JobsService` (*service*)

Service for accessing CDRouter Jobs.

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)

Bulk delete a set of jobs.

#### Parameters

- **ids** – (optional) Int list of job IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_launch** (*jobs=None, \_fields=None, filter=None, type=None, all=False*)

Bulk launch a set of jobs.

#### Parameters

- **jobs** – `jobs.Job` list
- **\_fields** – `jobs.Job` object
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**Returns** `jobs.Job` list

**delete** (*id*)

Delete a job.

**Parameters** `id` – Job ID as an int.

**edit** (*resource*)

Edit a job.

**Parameters** `resource` – `jobs.Job` object

**Returns** `jobs.Job` object

**Return type** *jobs.Job*

**get** (*id*)

Get a job.

**Parameters** `id` – Job ID as an int.

**Returns** `jobs.Job` object

**Return type** *jobs.Job*

**get\_interfaces** (*resource*)

Process job with `cdrouter-cli -print-interfaces`.

**Parameters** `resource` – `jobs.Job` object

**Returns** `configs.Interfaces` list

**iter\_list** (*\*args, \*\*kwargs*)

Get a list of jobs. Whereas `list` fetches a single page of jobs according to its `limit` and `page` arguments, `iter_list` returns all jobs by internally making successive calls to `list`.

**Parameters**

- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `jobs.Job` list

**launch** (*resource*)

Launch a new job.

**Parameters** `resource` – `jobs.Job` object

**Returns** `jobs.Job` object

**Return type** *jobs.Job*

**list** (*filter=None, type=None, sort=None, limit=None, page=None, detailed=None*)

Get a list of jobs, using summary representation by default (see `detailed` parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `jobs.Page` object

## 2.6.2 Job

**class** `cdrouter.jobs.Job` (*\*\*kwargs*)  
Model for CDRouter Jobs.

### Parameters

- **id** – (optional) Job ID as an int.
- **active** – (optional) Bool *True* if status is ‘running’.
- **status** – (optional) Job status as a string.
- **options** – (optional) `jobs.Options` object
- **package\_id** – (optional) Package ID as an int.
- **package\_name** – (optional) Package name as string.
- **config\_id** – (optional) Config ID as an int.
- **config\_name** – (optional) Config name as string.
- **device\_id** – (optional) Device ID as an int.
- **device\_name** – (optional) Device name as string.
- **result\_id** – (optional) Result ID as an int.
- **user\_id** – (optional) User ID as an int.
- **created** – (optional) Job creation time as *DateTime*.
- **updated** – (optional) Job last-updated time as *DateTime*.
- **automatic** – (optional) Bool *True* if job scheduled automatically *DateTime*.
- **run\_at** – (optional) Job scheduled run-time *DateTime*.
- **interfaces** – (optional) `configs.Interfaces` list
- **interface\_names** – (optional) Job interface names as string list.
- **uses\_wireless** – (optional) Bool *True* if job uses any wireless interfaces.
- **uses\_ics** – (optional) Bool *True* if job uses any ICS interfaces.
- **ics\_interface\_name** – (optional) If `uses_ics` is *True*, ICS interface name as string.

## 2.6.3 Options

**class** `cdrouter.jobs.Options` (*\*\*kwargs*)  
Model for CDRouter Job Options.

### Parameters

- **tags** – (optional) Tags as string list.
- **skip\_tests** – (optional) Tests to skip as string list.
- **begin\_at** – (optional) Test name to begin testing at as string.
- **end\_at** – (optional) Test name to end testing at as string.
- **testvars** – (optional) Extra testvars to set as a `configs.Testvar` list.
- **extra\_cli\_args** – (optional) Extra *cdrouter-cli* arguments as string.

## 2.6.4 Page

**class** `cdrouter.jobs.Page`

Named tuple for a page of list response data.

**Parameters**

- **data** – `jobs.Job` list
- **links** – `cdrouter.Links` object

## 2.7 Packages

### 2.7.1 PackagesService

**class** `cdrouter.packages.PackagesService` (*service*)

Service for accessing CDRouter Packages.

**analyze** (*id*)

Get a list of tests that will be skipped for a package.

**Parameters** **id** – Package ID as an int.

**Returns** `packages.Analysis` object

**Return type** *`packages.Analysis`*

**bulk\_copy** (*ids*)

Bulk copy a set of packages.

**Parameters** **ids** – Int list of package IDs.

**Returns** `packages.Package` list

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)

Bulk delete a set of packages.

**Parameters**

- **ids** – (optional) Int list of package IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_edit** (*\_fields, ids=None, filter=None, type=None, all=False*)

Bulk edit a set of packages.

**Parameters**

- **\_fields** – `packages.Package` object
- **ids** – (optional) Int list of package IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_export** (*ids*)

Bulk export a set of packages.

**Parameters** `ids` – Int list of package IDs.

**Return type** tuple (*io.BytesIO*, 'filename')

**create** (*resource*)

Create a new package.

**Parameters** `resource` – `packages.Package` object

**Returns** `packages.Package` object

**Return type** *packages.Package*

**delete** (*id*)

Delete a package.

**Parameters** `id` – Package ID as an int.

**edit** (*resource*)

Edit a package.

**Parameters** `resource` – `packages.Package` object

**Returns** `packages.Package` object

**Return type** *packages.Package*

**edit\_shares** (*id*, *user\_ids*)

Edit shares for a package.

**Parameters**

- `id` – Package ID as an int.
- `user_ids` – User IDs as int list.

**Returns** `cdrouter.Share` list

**export** (*id*)

Export a package.

**Parameters** `id` – Package ID as an int.

**Return type** tuple (*io.BytesIO*, 'filename')

**get** (*id*)

Get a package.

**Parameters** `id` – Package ID as an int.

**Returns** `packages.Package` object

**Return type** *packages.Package*

**get\_by\_name** (*name*)

Get a package by name.

**Parameters** `name` – Package name as string.

**Returns** `packages.Package` object

**Return type** *packages.Package*

**get\_interfaces** (*resource*)

Process package with `cdrouter-cli -print-interfaces`.

**Parameters** `resource` – `packages.Package` object

**Returns** `configs.Interfaces` list

**get\_shares** (*id*)

Get shares for a package.

**Parameters** *id* – Package ID as an int.

**Returns** `cdrouter.Share` list

**iter\_list** (\**args*, \*\**kwargs*)

Get a list of packages. Whereas `list` fetches a single page of packages according to its `limit` and `page` arguments, `iter_list` returns all packages by internally making successive calls to `list`.

**Parameters**

- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `packages.Package` list

**list** (*filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of packages, using summary representation by default (see `detailed` parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `packages.Page` object

**lock** (*id*)

Lock a package. Locking prevents the package from being modified or deleted until it is unlocked.

**Parameters** *id* – Package ID as an int.

**Returns** `packages.Package` object

**Return type** *packages.Package*

**testlist\_expanded** (*id*)

Get a list of all tests in a package, with any addons, modules or testlists expanded.

**Parameters** *id* – Package ID as an int.

**Return type** string list

**unlock** (*id*)

Unlock a package. Unlocking a locked package allows it to be modified or deleted once again.

**Parameters** *id* – Package ID as an int.

**Returns** `packages.Package` object

**Return type** *packages.Package*

## 2.7.2 Package

**class** `cdrouter.packages.Package` (*\*\*kwargs*)  
Model for CDRouter Packages.

### Parameters

- **id** – (optional) Package ID as an int.
- **name** – (optional) Name as a string.
- **description** – (optional) Description as a string.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if package is locked.
- **test\_count** – (optional) Test count as an int.
- **testlist** – (optional) Testlist as a string list.
- **extra\_cli\_args** – (optional) Extra CLI args as a string.
- **user\_id** – (optional) User ID as an int.
- **agent\_id** – (optional) Agent ID as an int.
- **config\_id** – (optional) Config ID as an int.
- **result\_id** – (optional) Result ID as an int (if a package snapshot).
- **device\_id** – (optional) Device ID as an int.
- **options** – (optional) `packages.Options` object
- **tags** – (optional) Tags as a string list.
- **use\_as\_testlist** – (optional) Bool *True* if package is used as a testlist.
- **note** – (optional) Note as a string.
- **schedule** – (optional) `packages.Schedule` object
- **interfaces** – (optional) `configs.Interfaces` list (if a package snapshot).

## 2.7.3 Options

**class** `cdrouter.packages.Options` (*\*\*kwargs*)  
Model for CDRouter Package Options.

### Parameters

- **forever** – (optional) Bool *True* if package looped forever.
- **loop** – (optional) Loop count as an int.
- **repeat** – (optional) Repeat count as an int.
- **maxfail** – (optional) Max fail count as an int.
- **duration** – (optional) Max testing time duration as an int.
- **duration\_units** – (optional) Units for max testing time duration as string. Must be *seconds*, *minutes*, *hours* or *days*.

- **duration\_interrupt** – (optional) Bool *True* if max testing time duration elapsing should interrupt currently running test.
- **duration\_no\_error** – (optional) Bool *True* if max testing time duration elapsing should not be considered an error.
- **wait** – (optional) Wait between tests duration as an int.
- **pause** – (optional) Bool *True* if pausing between tests.
- **shuffle** – (optional) Bool *True* if testlist is shuffled.
- **seed** – (optional) Shuffle seed as an int.
- **retry** – (optional) Retry count as an int.
- **rdelay** – (optional) Retry delay as an int.

## 2.7.4 Schedule

**class** `cdrouter.packages.Schedule` (*\*\*kwargs*)  
Model for CDRouter Package Schedule.

### Parameters

- **enabled** – (optional) Bool *True* if schedule is enabled.
- **spec** – (optional) Cron spec schedule as a string.
- **options** – (optional) `results.Options` object

## 2.7.5 Page

**class** `cdrouter.packages.Page`  
Named tuple for a page of list response data.

### Parameters

- **data** – `packages.Package` list
- **links** – `cdrouter.Links` object

## 2.7.6 Analysis

**class** `cdrouter.packages.Analysis` (*\*\*kwargs*)  
Model for CDRouter Package Analysis.

### Parameters

- **total\_count** – (optional) Total count as an int.
- **run\_count** – (optional) Run count as an int.
- **skipped\_count** – (optional) Skipped test count as an int.
- **skipped\_tests** – (optional) Skipped tests as a string list.



## 2.8 Results

### 2.8.1 ResultsService

**class** `cdrouter.results.ResultsService` (*service*)

Service for accessing CDRouter Results.

**all\_stats** ()

Compute stats for all results.

**Returns** `results.AllStats` object

**Return type** `results.AllStats`

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)

Bulk delete a set of results.

**Parameters**

- **ids** – (optional) Int list of result IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_edit** (*\_fields, ids=None, filter=None, type=None, all=False*)

Bulk edit a set of results.

**Parameters**

- **\_fields** – `results.Result` object
- **ids** – (optional) Int list of result IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_export** (*ids, exclude\_captures=False*)

Bulk export a set of results.

**Parameters** **ids** – Int list of result IDs.

**Return type** tuple (*io.BytesIO*, *filename*)

**delete** (*id*)

Delete a result.

**Parameters** **id** – Result ID as an int.

**diff\_stats** (*ids*)

Compute diff stats for a set of results.

**Parameters** **id** – Result IDs as int list.

**Returns** `results.DiffStats` object

**Return type** `results.DiffStats`

**download\_logdir\_archive** (*id, format='zip', exclude\_captures=False*)

Download logdir archive in tgz or zip format.

**Parameters**

- **id** – Result ID as an int.
- **format** – (optional) Format to download, must be string *zip* or *tgz*.
- **exclude\_captures** – If bool *True*, don't include capture files

**Return type** tuple (*io.BytesIO*, 'filename')

**edit** (*resource*)

Edit a result.

**Parameters** **resource** – *results.Result* object

**Returns** *results.Result* object

**Return type** *results.Result*

**edit\_shares** (*id*, *user\_ids*)

Edit shares for a result.

**Parameters**

- **id** – Result ID as an int.
- **user\_ids** – User IDs as int list.

**Returns** *cdrouter.Share* list

**export** (*id*, *exclude\_captures=False*)

Export a result.

**Parameters**

- **id** – Result ID as an int.
- **exclude\_captures** – If bool *True*, don't export capture files

**Return type** tuple (*io.BytesIO*, 'filename')

**get** (*id*)

Get a result.

**Parameters** **id** – Result ID as an int.

**Returns** *results.Result* object

**Return type** *results.Result*

**get\_logdir\_file** (*id*, *filename*)

Download a logdir file.

**Parameters**

- **id** – Result ID as an int.
- **filename** – Logdir filename as string.

**Return type** tuple (*io.BytesIO*, 'filename')

**get\_shares** (*id*)

Get shares for a result.

**Parameters** **id** – Result ID as an int.

**Returns** *cdrouter.Share* list

**get\_test\_metric** (*id, tname, metric*)

Get a test graph metric. This method is only for getting “bandwidth” or “latency” test metrics.

This method is DEPRECATED since cdrouter.py v0.9.0, new code should use TestResultsService.get\_test\_metric instead.

**Parameters**

- **id** – Result ID as an int.
- **tname** – Test name as string.
- **metric** – Metric name as string.

**Returns** `metrics.GraphMetric` list

**Return type** `metrics.GraphMetric`

**get\_test\_metric\_csv** (*id, tname, metric*)

Get a test metric as CSV. This method is only for getting “bandwidth” or “latency” test metrics.

**Parameters**

- **id** – Result ID as an int.
- **tname** – Test name as string.
- **metric** – Metric name as string.

**Return type** string

**iter\_list** (*\*args, \*\*kwargs*)

Get a list of results. Whereas `list` fetches a single page of results according to its `limit` and `page` arguments, `iter_list` returns all results by internally making successive calls to `list`.

**Parameters**

- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `results.Result` list

**list** (*filter=None, type=None, sort=None, limit=None, page=None, detailed=None*)

Get a list of results, using summary representation by default (see `detailed` parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `results.Page` object

**list\_csv** (*filter=None, type=None, sort=None, limit=None, page=None*)

Get a list of results as CSV.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.

- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.

**Return type** string

**list\_logdir** (*id*, *filter=None*, *sort=None*)

Get a list of logdir files.

**Parameters**

- **id** – Result ID as an int.
- **filter** – Filter to apply as string.
- **sort** – Sort field to apply as string.

**Returns** `results.LogDirFile` list

**list\_metrics** (*id*, *filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of metrics, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Result ID as an int.
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `metrics.Page` object

**Return type** `metrics.Page`

**lock** (*id*)

Lock a result. Locking prevents the result from being modified or deleted until it is unlocked.

**Parameters** **id** – Result ID as an int.

**Returns** `results.Result` object

**Return type** `results.Result`

**pause** (*id*, *when=None*)

Pause a running result.

**Parameters**

- **id** – Result ID as an int.
- **when** – Must be string *end-of-test* or *end-of-loop*.

**pause\_end\_of\_loop** (*id*)

Pause a running result at the end of the current loop.

**Parameters** **id** – Result ID as an int.

**pause\_end\_of\_test** (*id*)

Pause a running result at the end of the current test.

**Parameters** *id* – Result ID as an int.

**progress\_stats** (*id*)

Compute progress stats for a result.

**Parameters** *id* – Result ID as an int.

**Returns** `results.Progress` object

**Return type** `results.Progress`

**set\_stats** (*ids*)

Compute stats for a set of results.

**Parameters** *id* – Result IDs as int list.

**Returns** `results.SetStats` object

**Return type** `results.SetStats`

**single\_stats** (*id*)

Compute stats for a result.

**Parameters** *id* – Result ID as an int.

**Returns** `results.SingleStats` object

**Return type** `results.SingleStats`

**stop** (*id*, *when=None*)

Stop a running result.

**Parameters**

- *id* – Result ID as an int.
- *when* – Must be string *end-of-test* or *end-of-loop*.

**stop\_end\_of\_loop** (*id*)

Stop a running result at the end of the current loop.

**Parameters** *id* – Result ID as an int.

**stop\_end\_of\_test** (*id*)

Stop a running result at the end of the current test.

**Parameters** *id* – Result ID as an int.

**summary\_stats** (*id*)

Compute summary stats for a result.

**Parameters** *id* – Result ID as an int.

**Returns** `results.SummaryStats` object

**Return type** `results.SummaryStats`

**unlock** (*id*)

Unlock a result. Unlocking a locked result allows it to be modified or deleted once again.

**Parameters** *id* – Result ID as an int.

**Returns** `results.Result` object

**Return type** `results.Result`

**unpause** (*id*)

Unpause a running result.

**Parameters** **id** – Result ID as an int.

**updates** (*id*, *update\_id=None*)

Get updates of a running result via long-polling. If no updates are available, CDRouter waits up to 10 seconds before sending an empty response.

**Parameters**

- **id** – Result ID as an int.
- **update\_id** – (optional) Update ID as an int.

**Returns** `results.Update` object

**Return type** *results.Update*

## 2.8.2 Result

**class** `cdrouter.results.Result` (*\*\*kwargs*)

Model for CDRouter Results.

**Parameters**

- **id** – (optional) Result ID as an int.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if result is locked.
- **result** – (optional) Result as a string.
- **active** – (optional) Bool *True* if status is ‘running’ or ‘paused’.
- **status** – (optional) Status as a string.
- **loops** – (optional) Loop count as an int.
- **tests** – (optional) Test count as an int.
- **passed** – (optional) Passed count as an int.
- **fail** – (optional) Failed count as an int.
- **alerts** – (optional) Alert count as an int.
- **duration** – (optional) Duration in seconds as an int.
- **size\_on\_disk** – (optional) Size on disk in bytes as an int.
- **starred** – (optional) Bool *True* if result is starred.
- **archived** – (optional) Bool *True* if result is archived.
- **result\_dir** – (optional) Filepath to result directory as a string.
- **agent\_name** – (optional) Agent name as a string.
- **package\_name** – (optional) Package name as a string.
- **device\_name** – (optional) Device name as a string.
- **config\_name** – (optional) Config name as a string.

- **package\_id** – (optional) Package ID as an int.
- **device\_id** – (optional) Device ID as an int.
- **config\_id** – (optional) Config ID as an int.
- **user\_id** – (optional) User ID as an int.
- **note** – (optional) Note as a string.
- **pause\_message** – (optional) Pause message as a string (if currently paused).
- **build\_info** – (optional) Build info as a string.
- **tags** – (optional) Tags as a string list.
- **testcases** – (optional) Testcases as a string list.
- **options** – (optional) `results.Options` object
- **features** – (optional) Dict of feature name strings to `results.Feature` objects.
- **interfaces** – (optional) `configs.Interfaces` list.

### 2.8.3 Page

**class** `cdrouter.results.Page`

Named tuple for a page of list response data.

#### Parameters

- **data** – `results.Result` list
- **links** – `cdrouter.Links` object

### 2.8.4 TestCount

**class** `cdrouter.results.TestCount` (*\*\*kwargs*)

Model for CDRouter Test Counts.

#### Parameters

- **name** – (optional) Name as a string.
- **count** – (optional) Count as an int.

### 2.8.5 TestDuration

**class** `cdrouter.results.TestDuration` (*\*\*kwargs*)

Model for CDRouter Test Durations.

#### Parameters

- **name** – (optional) Name as a string.
- **duration** – (optional) Duration as an int.

## 2.8.6 ResultBreakdown

**class** cdrouter.results.ResultBreakdown (\*\*kwargs)  
Model for CDRouter Result Breakdowns.

### Parameters

- **passed** – (optional) Pass count as an int.
- **failed** – (optional) Fail count as an int.
- **skipped** – (optional) Skipped count as an int.
- **alerted** – (optional) Alerted count as an int.

## 2.8.7 TimeBreakdown

**class** cdrouter.results.TimeBreakdown (\*\*kwargs)  
Model for CDRouter Time Breakdowns.

### Parameters

- **passed** – (optional) Pass duration as an int.
- **failed** – (optional) Fail duration as an int.

## 2.8.8 SetStats

**class** cdrouter.results.SetStats (\*\*kwargs)  
Model for CDRouter Result Set Stats.

### Parameters

- **frequent\_failures** – (optional) results.TestCount list
- **longest\_tests** – (optional) results.TestDuration list
- **result\_breakdown** – (optional) results.ResultBreakdown object
- **time\_breakdown** – (optional) results.TimeBreakdown object

## 2.8.9 TestResultSummary

**class** cdrouter.results.TestResultSummary (\*\*kwargs)  
Model for CDRouter TestResult summaries.

### Parameters

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **result** – (optional) Test result as string.
- **alerts** – (optional) Alert count as an int.
- **duration** – (optional) Test duration as int.
- **flagged** – (optional) *True* if test is flagged.
- **name** – (optional) Test name as string.



- **description** – (optional) Test description as string.

### 2.8.10 TestResultDiff

**class** cdrouter.results.**TestResultDiff** (\*\*kwargs)

Model for CDRouter TestResult diffs.

#### Parameters

- **name** – (optional) Test name as a string.
- **summaries** – (optional) results.TestResultSummary list

### 2.8.11 DiffStats

**class** cdrouter.results.**DiffStats** (\*\*kwargs)

Model for CDRouter Result Diff Stats.

**Parameters** **tests** – (optional) results.TestResultDiff list

### 2.8.12 TestResultBreakdown

**class** cdrouter.results.**TestResultBreakdown** (\*\*kwargs)

Model for CDRouter TestResult Breakdowns.

#### Parameters

- **failed\_at\_least\_once** – (optional) results.TestCount list
- **passed\_every\_time** – (optional) results.TestCount list

### 2.8.13 Progress

**class** cdrouter.results.**Progress** (\*\*kwargs)

Model for CDRouter Result Progress.

#### Parameters

- **finished** – (optional) Finished count as an int.
- **total** – (optional) Total count as an int.
- **progress** – (optional) Progress as an int.
- **unit** – (optional) Unit as a string.

### 2.8.14 SingleStats

**class** cdrouter.results.**SingleStats** (\*\*kwargs)

Model for CDRouter Single Results Stats.

#### Parameters

- **result\_breakdown** – (optional) results.ResultBreakdown object
- **progress** – (optional) results.Progress object

### 2.8.15 SummaryStats

**class** `cdrouter.results.SummaryStats` (*\*\*kwargs*)  
Model for CDRouter Summary Results Stats.

**Parameters**

- **result\_breakdown** – (optional) `results.ResultBreakdown` object
- **test\_summaries** – (optional) `testresults.TestResult` list

### 2.8.16 PackageCount

**class** `cdrouter.results.PackageCount` (*\*\*kwargs*)  
Model for CDRouter Package Counts.

**Parameters**

- **package\_name** – (optional) Package name as a string.
- **count** – (optional) Count as an int.

### 2.8.17 DeviceCount

**class** `cdrouter.results.DeviceCount` (*\*\*kwargs*)  
Model for CDRouter Device Counts.

**Parameters**

- **device\_name** – (optional) Device name as a string.
- **count** – (optional) Count as an int.

### 2.8.18 AllStats

**class** `cdrouter.results.AllStats` (*\*\*kwargs*)  
Model for CDRouter All Results Stats.

**Parameters**

- **frequent\_packages** – (optional) `results.PackageCount` list
- **package\_names** – (optional) `results.PackageCount` list
- **frequent\_devices** – (optional) `results.DeviceCount` list
- **device\_names** – (optional) `results.DeviceCount` list

### 2.8.19 LogDirFile

**class** `cdrouter.results.LogDirFile` (*\*\*kwargs*)  
Model for CDRouter Logdir Files.

**Parameters**

- **name** – (optional) Name as a string.
- **size** – (optional) Filesize as an int.

- **modified** – (optional) Last-updated time as a *DateTime*.

## 2.8.20 Options

**class** cdrouter.results.Options (\*\*kwargs)

Model for CDRouter Result Options.

### Parameters

- **tags** – (optional) Tags as string list.
- **skip\_tests** – (optional) Tests to skip as string list.
- **begin\_at** – (optional) Test name to begin testing at as string.
- **end\_at** – (optional) Test name to end testing at as string.
- **testvars** – (optional) Extra testvars to set as a `configs.Testvar` list.
- **extra\_cli\_args** – (optional) Extra *cdrouter-cli* arguments as string.

## 2.8.21 Feature

**class** cdrouter.results.Feature (\*\*kwargs)

Model for CDRouter Result Feature.

### Parameters

- **feature** – (optional) Feature as a string.
- **enabled** – (optional) *True* if feature is enabled.
- **reason** – (optional) Reason as a string

## 2.8.22 Update

**class** cdrouter.results.Update (\*\*kwargs)

Model for CDRouter Result Update.

### Parameters

- **id** – (optional) Update ID as an int.
- **timestamp** – (optional) System time as *DateTime*.
- **progress** – (optional) `results.Progress` object
- **running** – (optional) `testresults.TestResult` object
- **updates** – (optional) `results.Result`, `testresults.TestResult` and `alerts.Alert` list

## 2.8.23 Result

**class** cdrouter.results.Result (\*\*kwargs)

Model for CDRouter Results.

### Parameters

- **id** – (optional) Result ID as an int.

- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if result is locked.
- **result** – (optional) Result as a string.
- **active** – (optional) Bool *True* if status is ‘running’ or ‘paused’.
- **status** – (optional) Status as a string.
- **loops** – (optional) Loop count as an int.
- **tests** – (optional) Test count as an int.
- **passed** – (optional) Passed count as an int.
- **fail** – (optional) Failed count as an int.
- **alerts** – (optional) Alert count as an int.
- **duration** – (optional) Duration in seconds as an int.
- **size\_on\_disk** – (optional) Size on disk in bytes as an int.
- **starred** – (optional) Bool *True* if result is starred.
- **archived** – (optional) Bool *True* if result is archived.
- **result\_dir** – (optional) Filepath to result directory as a string.
- **agent\_name** – (optional) Agent name as a string.
- **package\_name** – (optional) Package name as a string.
- **device\_name** – (optional) Device name as a string.
- **config\_name** – (optional) Config name as a string.
- **package\_id** – (optional) Package ID as an int.
- **device\_id** – (optional) Device ID as an int.
- **config\_id** – (optional) Config ID as an int.
- **user\_id** – (optional) User ID as an int.
- **note** – (optional) Note as a string.
- **pause\_message** – (optional) Pause message as a string (if currently paused).
- **build\_info** – (optional) Build info as a string.
- **tags** – (optional) Tags as a string list.
- **testcases** – (optional) Testcases as a string list.
- **options** – (optional) `results.Options` object
- **features** – (optional) Dict of feature name strings to `results.Feature` objects.
- **interfaces** – (optional) `configs.Interfaces` list.

## 2.9 Alerts

### 2.9.1 AlertsService

**class** `cdrouter.alerts.AlertsService` (*service*)

Service for accessing CDRouter Alerts.

**all\_stats** (*id*)

Compute alert stats for a single result.

**Parameters** *id* – Result ID as an int.

**Returns** `alerts.AllStats` object

**Return type** `alerts.AllStats`

**get** (*id*, *idx*)

Get an alert.

**Parameters**

- *id* – Result ID as an int.
- *idx* – Alert index as an int.

**Returns** `alerts.Alert` object

**Return type** `alerts.Alert`

**iter\_list** (*id*, *\*args*, *\*\*kwargs*)

Get a list of alerts. Whereas `list` fetches a single page of alerts according to its `limit` and `page` arguments, `iter_list` returns all alerts by internally making successive calls to `list`.

**Parameters**

- *id* – Result ID as an int.
- *args* – Arguments that `list` takes.
- *kwargs* – Optional arguments that `list` takes.

**Returns** `alerts.Alert` list

**list** (*id*, *filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of alerts, using summary representation by default (see `detailed` parameter).

**Parameters**

- *id* – Result ID as an int.
- *filter* – (optional) Filters to apply as a string list.
- *type* – (optional) *union* or *inter* as string.
- *sort* – (optional) Sort fields to apply as string list.
- *limit* – (optional) Limit returned list length.
- *page* – (optional) Page to return.
- *detailed* – (optional) Return all fields if Bool *True*.

**Returns** `alerts.Page` object

## 2.9.2 Alert

**class** `cdrouter.alerts.Alert` (*\*\*kwargs*)  
Model for CDRouter Alerts.

### Parameters

- **id** – (optional) Result ID as an int.
- **idx** – (optional) Alert index as an int.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **seq** – (optional) TestResult sequence ID as an int.
- **loop** – (optional) Loop number as an int.
- **test\_name** – (optional) Test name as string.
- **test\_description** – (optional) Test description as string.
- **category** – (optional) Alert category as a string.
- **description** – (optional) Alert description as a string.
- **dest\_ip** – (optional) Alert destination IP as a string.
- **dest\_port** – (optional) Alert destination port as an int.
- **interface** – (optional) Alert incoming interface as a string.
- **payload** – (optional) Alert payload as a base64 string.
- **payload\_ascii** – (optional) Alert payload as an ASCII string.
- **payload\_hex** – (optional) Alert payload as a hex string.
- **proto** – (optional) Alert protocol as a string.
- **references** – (optional) Alert references as a string list.
- **rev** – (optional) Alert rule revision as an int.
- **rule** – (optional) Alert rule as a string.
- **rule\_set** – (optional) Alert rule set as a string.
- **severity** – (optional) Alert severity as an int.
- **sid** – (optional) Alert rule SID as an int.
- **signature** – (optional) Alert signature as a string.
- **src\_ip** – (optional) Alert source IP as a string.
- **src\_port** – (optional) Alert source port as an int.

## 2.9.3 Page

**class** `cdrouter.alerts.Page`  
Named tuple for a page of list response data.

### Parameters

- **data** – `alerts.Alert` list

- **links** – `cdrouter.Links` object

## 2.9.4 SeverityCount

**class** `cdrouter.alerts.SeverityCount` (*\*\*kwargs*)  
Model for CDRouter Severity Counts.

### Parameters

- **name** – (optional) Severity name as a string.
- **severity** – (optional) Severity as an int.
- **count** – (optional) Count as an int.

## 2.9.5 CategoryCount

**class** `cdrouter.alerts.CategoryCount` (*\*\*kwargs*)  
Model for CDRouter Category Counts.

### Parameters

- **category** – (optional) Category name as a string.
- **severity** – (optional) Severity as an int.
- **count** – (optional) Count as an int.

## 2.9.6 RuleSetCount

**class** `cdrouter.alerts.RuleSetCount` (*\*\*kwargs*)  
Model for CDRouter RuleSet Counts.

### Parameters

- **name** – (optional) RuleSet name as a string.
- **count** – (optional) Count as an int.

## 2.9.7 SignatureCount

**class** `cdrouter.alerts.SignatureCount` (*\*\*kwargs*)  
Model for CDRouter Signature Counts.

### Parameters

- **signature** – (optional) Signature name as a string.
- **severity** – (optional) Severity as an int.
- **count** – (optional) Count as an int.

## 2.9.8 TestCount

**class** `cdrouter.alerts.TestCount` (*\*\*kwargs*)  
Model for CDRouter Test Counts.

### Parameters

- **name** – (optional) Test name as a string.
- **count** – (optional) Count as an int.

## 2.9.9 AddrCount

**class** `cdrouter.alerts.AddrCount` (*\*\*kwargs*)  
Model for CDRouter Addr Counts.

### Parameters

- **addr** – (optional) Address as a string.
- **count** – (optional) Count as an int.

## 2.9.10 AllStats

**class** `cdrouter.alerts.AllStats` (*\*\*kwargs*)  
Model for CDRouter All Alerts Stats.

### Parameters

- **severities** – (optional) Dict of ints to `alerts.SeverityCount`
- **categories** – (optional) `alerts.CategoryCount` list
- **rule\_sets** – (optional) `alerts.RuleSetCount` list
- **signatures** – (optional) `alerts.SignatureCount` list
- **tests** – (optional) `alerts.TestCount` list
- **frequent\_sources** – (optional) `alerts.AddrCount` list
- **frequent\_destinations** – (optional) `alerts.AddrCount` list

## 2.10 TestResults

### 2.10.1 TestResultsService

**class** `cdrouter.testresults.TestResultsService` (*service*)  
Service for accessing CDRouter TestResults.

**edit** (*resource*)  
Edit a test result.

**Parameters** **resource** – `testresults.TestResult` object

**Returns** `testresults.TestResult` object

**Return type** *testresults.TestResult*



**get** (*id*, *seq*)

Get a test result.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.

**Returns** `testresults.TestResult` object

**Return type** `testresults.TestResult`

**get\_log\_plaintext** (*id*, *seq*)

Get a test result’s log as plaintext.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.

**Return type** string

**get\_test\_metric** (*id*, *seq*, *metric*)

Get a bandwidth, latency, client\_bandwidth or client\_latency test metric. This method is only for getting “bandwidth”, “latency”, “client\_bandwidth” or “client\_lantecy” test metrics.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **metric** – Metric name as string, must be “bandwidth”, “latency”, “client\_bandwidth” or “client\_latency”

**Returns** `metrics.Bandwidth` list, `metrics.Latency` list, `metrics.ClientBandwidth` list or `metrics.ClientLatency` list

**Return type** Union[`metrics.Bandwidth`, `metrics.Latency`, `metrics.ClientBandwidth`, `metrics.ClientLatency`]

**get\_test\_metric\_csv** (*id*, *seq*, *metric*)

Get a test metric as CSV. This methods support all test metrics.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **id** – Metric name as string.

**Return type** string

**iter\_list** (*id*, *\*args*, *\*\*kwargs*)

Get a list of test results. Whereas `list` fetches a single page of test results according to its `limit` and `page` arguments, `iter_list` returns all test results by internally making successive calls to `list`.

**Parameters**

- **id** – Result ID as an int.
- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `testresults.TestResult` list

**iter\_list\_log** (*id*, *seq*, \**args*, \*\**kwargs*)

Get a test result's log. Whereas `list_log` fetches a single range of log lines according to its `limit` and `offset` arguments, `iter_list_log` returns all log lines by internally making successive calls to `list_log`.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **args** – Arguments that `list_log` takes.
- **kwargs** – Optional arguments that `list_log` takes.

**Returns** `testresults.Line` list

**list** (*id*, *filter*=None, *type*=None, *sort*=None, *limit*=None, *page*=None, *detailed*=None)

Get a list of test results, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Result ID as an int.
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testresults.Page` object

**list\_csv** (*id*, *filter*=None, *type*=None, *sort*=None, *limit*=None, *page*=None)

Get a list of test results as CSV.

**Parameters**

- **id** – Result ID as an int.
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.

**Return type** string

**list\_log** (*id*, *seq*, *offset*=None, *limit*=None, *filter*=None, *packets*=None, *timestamp\_format*=None)

Get a test result's log.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **offset** – (optional) Offset within logfile to get.

- **limit** – (optional) Limit returned list length.
- **filter** – (optional) Filters to apply as a string list.
- **packets** – (optional) Set to bool *False* to omit packet logs.
- **timestamp\_format** – (optional) Timestamp format to use, must be string *long* or *short*.

**Returns** `testresults.Log` object

**Return type** `testresults.Log`

**list\_metrics** (*id*, *seq*, *filter=None*, *type=None*, *sort=None*, *limit=None*, *page=None*, *detailed=None*)

Get a list of metrics, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `metrics.Page` object

**Return type** `metrics.Page`

## 2.10.2 TestResult

**class** `cdrouter.testresults.TestResult` (*\*\*kwargs*)

Model for CDRouter TestResults.

**Parameters**

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **loop** – (optional) Loop number as an int.
- **active** – (optional) Bool *True* if result is ‘running’ or ‘waiting’.
- **result** – (optional) Test result as string.
- **alerts** – (optional) Alerts count as int.
- **retries** – (optional) Retry count as int.
- **started** – (optional) Test start time as *DateTime*.
- **duration** – (optional) Test duration as int.
- **flagged** – (optional) *True* if test is flagged.
- **name** – (optional) Test name as string.

- **description** – (optional) Test description as string.
- **skip\_name** – (optional) Skip name for TestResult as string.
- **skip\_reason** – (optional) Skip reason for TestResult as string.
- **log** – (optional) Logfile path for TestResult as string.
- **keylog** – (optional) Keylog path for TestResult as string.
- **note** – (optional) Note for TestResult as string.

### 2.10.3 Page

**class** `cdrouter.testresults.Page`

Named tuple for a page of list response data.

#### Parameters

- **data** – `testresults.TestResult` list
- **links** – `cdrouter.Links` object

### 2.10.4 Summary

**class** `cdrouter.testresults.Summary` (*\*\*kwargs*)

Model for CDRouter Log Section Summaries.

#### Parameters

- **errors** – (optional) Error log count as int.
- **fails** – (optional) Fail log count as int.
- **passes** – (optional) Pass log count as int.
- **warnings** – (optional) Warning log count as int.
- **alerts** – (optional) Alert log count as int.

### 2.10.5 Line

**class** `cdrouter.testresults.Line` (*\*\*kwargs*)

Model for CDRouter Log Lines.

#### Parameters

- **raw** – (optional) Raw log text as string.
- **line** – (optional) Line number as int.
- **header** – (optional) *True* if line is a header.
- **section** – (optional) *True* if line is a section.
- **prefix** – (optional) Log prefix as string.
- **name** – (optional) Log stack name as string.
- **timestamp** – (optional) Log timestamp as string.
- **timestamp\_display** – (optional) Log display timestamp as string.

- **message** – (optional) Log message as string.
- **interface** – (optional) Log interface as string (if packet log).
- **packet** – (optional) Log frame number as an int (if packet log).
- **src** – (optional) Log source address as string (if packet log).
- **dst** – (optional) Log destination address as string (if packet log).
- **proto** – (optional) Log protocol name as string (if packet log).
- **info** – (optional) Log protocol summary as string (if packet log).
- **alert\_interface** – (optional) Log alert interface as string (if alert log).
- **alert\_index** – (optional) Log alert index as an int (if alert log).
- **alert\_src** – (optional) Log alert source address as string (if alert log).
- **alert\_dst** – (optional) Log alert destination address as string (if alert log).
- **alert\_proto** – (optional) Log alert protocol name as string (if alert log).
- **alert\_src\_port** – (optional) Log alert source port as int (if alert log).
- **alert\_dst\_port** – (optional) Log alert destination port as int (if alert log).
- **alert\_signature** – (optional) Log alert signature as string (if alert log).
- **alert\_severity** – (optional) Log alert severity as int (if alert log).
- **alert\_severity\_display** – (optional) Log alert display severity as string (if alert log).
- **alert\_sid** – (optional) Log alert SID as int (if alert log).
- **alert\_rev** – (optional) Log alert revision as int (if alert log).
- **summary** – (optional) `testresults.Summary` object (if section log)

## 2.10.6 Log

**class** `cdrouter.testresults.Log` (*\*\*kwargs*)

Model for CDRouter Log.

### Parameters

- **offset** – (optional) Zero-based offset in logfile as int.
- **limit** – (optional) Limit as int.
- **lines** – (optional) `testresults.Line` list
- **total** – (optional) Total line count as int.
- **more** – (optional) Bool *True* if more lines are available.

## 2.11 Annotations

### 2.11.1 AnnotationsService

**class** `cdrouter.annotations.AnnotationsService` (*service*)

Service for accessing CDRouter Annotations.

**create** (*id, seq, resource*)

Create an annotation.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `annotations.Annotation` object

**Returns** `annotations.Annotation` object

**Return type** `annotations.Annotation`

**create\_or\_edit** (*id, seq, resource*)

Create or edit an annotation.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `annotations.Annotation` object

**Returns** `annotations.Annotation` object

**Return type** `annotations.Annotation`

**delete** (*id, seq, line*)

Delete an annotation.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **line** – Line number in TestResult's logfile as an int.

**edit** (*id, seq, resource*)

Edit an annotation.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `annotations.Annotation` object

**Returns** `annotations.Annotation` object

**Return type** `annotations.Annotation`

**get** (*id, seq, line*)

Get an annotation.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **line** – Line number in TestResult's logfile as an int.

**Returns** `annotations.Annotation` object

**Return type** `annotations.Annotation`

**list** (*id, seq, detailed=None*)

Get a list of annotations, using summary representation by default (see *detailed* parameter).

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `annotations.Annotation` list

## 2.11.2 Annotation

**class** `cdrouter.annotations.Annotation` (*\*\*kwargs*)

Model for CDRouter Annotations.

**Parameters**

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **line** – (optional) Line number in TestResult’s logfile as an int.
- **comment** – (optional) Comment text as string.

## 2.12 Metrics

### 2.12.1 Bandwidth

**class** `cdrouter.metrics.Bandwidth` (*\*\*kwargs*)

Model for CDRouter Bandwidth Metrics.

**Parameters**

- **log\_file** – (optional) Filepath to logfile as a string.
- **timestamp** – (optional) Timestamp for metric as a *DateTime*.
- **metric** – (optional) Metric name as a string.
- **bandwidth** – (optional) Bandwidth value as a float.
- **bandwidth\_units** – (optional) Bandwidth value units as a string.
- **result** – (optional) Metric result as a string.
- **client\_interface** – (optional) Client interface as a string.
- **server\_interface** – (optional) Server interface as a string.
- **streams** – (optional) Stream count as an int.
- **protocol** – (optional) Protocol as a string.
- **direction** – (optional) Direction as a string.
- **loss\_percentage** – (optional) Loss percentage value as a float.
- **loss\_percentage\_units** – (optional) Loss percentage units as a string.
- **client\_device** – (optional) Client device as a string.

- **server\_device** – (optional) Server device as a string.

### 2.12.2 ClientBandwidth

**class** cdrouter.metrics.**ClientBandwidth** (\*\*kwargs)

Model for CDRouter Client Bandwidth Metrics.

#### Parameters

- **timestamp** – (optional) Timestamp for metric as a *DateTime*.
- **num\_rates** – (optional) Size of metric bandwidth rates list as an int.
- **rate** – (optional) Metric bandwidth rates as a float list.

### 2.12.3 ClientLatency

**class** cdrouter.metrics.**ClientLatency** (\*\*kwargs)

Model for CDRouter Client Latency Metrics.

#### Parameters

- **timestamp** – (optional) Timestamp for metric as a *DateTime*.
- **num\_rates** – (optional) Size of metric latency rates list as an int.
- **rate** – (optional) Metric latency rates as an int list.

### 2.12.4 GraphMetric

**class** cdrouter.metrics.**GraphMetric** (\*\*kwargs)

Model for CDRouter Graph Metrics.

#### Parameters

- **log\_file** – (optional) Filepath to logfile as a string.
- **timestamp** – (optional) Timestamp for metric as a *DateTime*.
- **metric** – (optional) Metric name as a string.
- **value** – (optional) First metric value as a float.
- **units** – (optional) First metric units as a string.
- **result** – (optional) Metric result as a string.
- **interface\_1** – (optional) First interface as a string.
- **interface\_2** – (optional) Second interface as a string.
- **streams** – (optional) Stream count as an int.
- **protocol** – (optional) Protocol as a string.
- **direction** – (optional) Direction as a string.
- **value\_2** – (optional) Second metric value as a float.
- **units\_2** – (optional) Second metric units as a string.
- **device\_1** – (optional) First device as a string.



- **device\_2** – (optional) Second device as a string.

### 2.12.5 Latency

**class** cdrouter.metrics.**Latency** (\*\*kwargs)

Model for CDRouter Latency Metrics.

#### Parameters

- **log\_file** – (optional) Filepath to logfile as a string.
- **timestamp** – (optional) Timestamp for metric as a *DateTime*.
- **metric** – (optional) Metric name as a string.
- **total\_latency** – (optional) Total latency value as an int.
- **total\_latency\_units** – (optional) Total latency units as a string.
- **result** – (optional) Metric result as a string.
- **interface** – (optional) Interface as a string.
- **download\_latency** – (optional) Download latency as an int.
- **download\_latency\_units** – (optional) Download latency units as a string.
- **upload\_latency** – (optional) Upload latency as an int.
- **upload\_latency\_units** – (optional) Upload latency units as a string.

### 2.12.6 Metric

**class** cdrouter.metrics.**Metric** (\*\*kwargs)

Model for CDRouter Metrics.

#### Parameters

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **test\_name** – (optional) Test name as a string.
- **metric** – (optional) Metric name as a string.
- **filename** – (optional) Filename as a string.

### 2.12.7 Page

**class** cdrouter.metrics.**Page**

Named tuple for a page of list response data.

#### Parameters

- **data** – metrics.Metric list
- **links** – cdrouter.Links object

## 2.13 Captures

### 2.13.1 CapturesService

**class** `cdrouter.captures.CapturesService` (*service*)

Service for accessing CDRouter Captures.

**download** (*id, seq, intf, inline=False*)

Download a capture as a PCAP file.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **intf** – Interface name as string.
- **inline** – (optional) Use inline version of capture file.

**Return type** tuple (*io.BytesIO*, *'filename'*)

**get** (*id, seq, intf*)

Get a capture.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **intf** – Interface name as string.

**Returns** `captures.Capture` object

**Return type** *captures.Capture*

**list** (*id, seq, detailed=None*)

Get a list of captures, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `captures.Capture` list

**send\_to\_cloudshark** (*id, seq, intf, inline=False*)

Send a capture to a CloudShark Appliance. Both `cloudshark_appliance_url` and `cloudshark_appliance_token` must be properly configured via system preferences.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **intf** – Interface name as string.
- **inline** – (optional) Use inline version of capture file.

**Returns** `captures.CloudShark` object

**Return type** *captures.CloudShark*

## 2.13.2 Capture

**class** `cdrouter.captures.Capture` (*\*\*kwargs*)  
Model for CDRouter Captures.

### Parameters

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **type** – (optional) Capture type as string.
- **interface** – (optional) Interface name as string.
- **filename** – (optional) Path to capture file as string.

## 2.13.3 CloudShark

**class** `cdrouter.captures.CloudShark` (*\*\*kwargs*)  
Model for CDRouter CloudShark uploads.

**Parameters** **url** – (optional) CloudShark URL as a string.

## 2.14 Highlights

### 2.14.1 HighlightsService

**class** `cdrouter.highlights.HighlightsService` (*service*)  
Service for accessing CDRouter Highlights.

**create** (*id, seq, resource*)  
Create a highlight.

### Parameters

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `highlights.Highlight` object

**Returns** `highlights.Highlight` object

**Return type** *highlights.Highlight*

**create\_or\_edit** (*id, seq, resource*)  
Create or edit a highlight.

### Parameters

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `highlights.Highlight` object

**Returns** `highlights.Highlight` object

**Return type** *highlights.Highlight*

**delete** (*id, seq, line*)  
Delete a highlight.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **line** – Line number in TestResult’s logfile as an int.

**edit** (*id, seq, resource*)  
Edit a highlight.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **resource** – `highlights.Highlight` object

**Returns** `highlights.Highlight` object

**Return type** `highlights.Highlight`

**get** (*id, seq, line*)  
Get a highlight.

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **line** – Line number in TestResult’s logfile as an int.

**Returns** `highlights.Highlight` object

**list** (*id, seq, detailed=None*)  
Get a list of highlights, using summary representation by default (see `detailed` parameter).

**Parameters**

- **id** – Result ID as an int.
- **seq** – TestResult sequence ID as an int.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `highlights.Highlight` list

## 2.14.2 Highlight

**class** `cdrouter.highlights.Highlight` (*\*\*kwargs*)  
Model for CDRouter Highlights.

**Parameters**

- **id** – (optional) Result ID as an int.
- **seq** – (optional) TestResult sequence ID as an int.
- **line** – (optional) Line number in TestResult’s logfile as an int.
- **color** – (optional) Highlight color as string.

## 2.15 Imports

### 2.15.1 ImportsService

**class** `cdrouter.imports.ImportsService` (*service*)

Service for accessing CDRouter Imports.

**commit** (*id*, *impreq*)

Commit a staged import.

**Parameters**

- **id** – Staged import ID as an int.
- **impreq** – `imports.Request` object

**Returns** `imports.Request` object

**Return type** *imports.Request*

**delete** (*id*)

Delete a staged import.

**Parameters** **id** – Staged import ID as an int.

**get** (*id*)

Get a staged import.

**Parameters** **id** – Staged import ID as an int.

**Returns** `imports.Import` object

**Return type** *imports.Import*

**get\_commit\_request** (*id*)

Get a commit request for a staged import.

**Parameters** **id** – Staged import ID as an int.

**Returns** `imports.Request` object

**Return type** *imports.Request*

**list** ()

Get a list of staged (in-progress) imports.

**Returns** `imports.Import` list

**stage\_import\_from\_file** (*fd*, *filename*='upload.gz')

Stage an import from a file upload.

**Parameters**

- **fd** – File-like object to upload.
- **filename** – (optional) Filename to use for import as string.

**Returns** `imports.Import` object

**stage\_import\_from\_filesystem** (*filepath*)

Stage an import from a filesystem path.

**Parameters** **filepath** – Local filesystem path as string.

**Returns** `imports.Import` object

**stage\_import\_from\_url** (*url*, *token=None*, *username=None*, *password=None*, *insecure=False*)  
Stage an import from a URL to another CDRouter system.

**Parameters**

- **url** – URL to import as string.
- **token** – (optional) API token to use as string (may be required if importing from a CDRouter 10+ system).
- **username** – (optional) API username to use as string (may be required if importing from a CDRouter 10+ system).
- **password** – (optional) API password to use as string (may be required if importing from a CDRouter 10+ system).
- **insecure** – (optional) Allow insecure HTTPS connections if bool *True*.

**Returns** `imports.Import` object

## 2.15.2 Import

**class** `cdrouter.imports.Import` (*\*\*kwargs*)  
Model for CDRouter Staged Imports.

**Parameters**

- **id** – (optional) Staged import ID as an int.
- **user\_id** – (optional) User ID as an int.
- **created** – (optional) Creation time as *DateTime*.
- **updated** – (optional) Last-updated time as *DateTime*.
- **archive** – (optional) Path to archive as string.
- **path** – (optional) Local filepath as string.
- **url** – (optional) URL to fetch as string.
- **insecure** – (optional) Allow insecure HTTPS connections if bool *True*.
- **size** – (optional) Size of import as int.

## 2.15.3 Response

**class** `cdrouter.imports.Response` (*\*\*kwargs*)  
Model for CDRouter Import Responses.

**Parameters**

- **imported** – (optional) Bool *True* if resource imported successfully.
- **id** – (optional) Resource ID as an int.
- **name** – (optional) Resource name as string.
- **message** – (optional) Response message as string.

## 2.15.4 Resource

**class** `cdrouter.imports.Resource` (*\*\*kwargs*)  
Model for CDRouter Import Resources.

### Parameters

- **name** – (optional) Set to string to rename resource, leave empty to keep original
- **should\_import** – (optional) Bool *True* if resource should be imported.
- **existing\_id** – (optional) Contains ID as an int of existing resource which will be over-written if *should\_import* is *True*.
- **response** – (optional) `imports.Response` object

## 2.15.5 Request

**class** `cdrouter.imports.Request` (*\*\*kwargs*)  
Model for CDRouter Import Requests.

### Parameters

- **replace\_existing** – (optional) Bool *True* if existing resources should be overwritten.
- **configs** – (optional) Dict of strings to `imports.Resource` objects.
- **devices** – (optional) Dict of strings to `imports.Resource` objects.
- **packages** – (optional) Dict of strings to `imports.Resource` objects.
- **results** – (optional) Dict of strings to `imports.Resource` objects.
- **tags** – (optional) Tags to add to imported resources as string list.

## 2.16 Exports

### 2.16.1 ExportsService

**class** `cdrouter.exports.ExportsService` (*service*)  
Service for accessing CDRouter Exports.

**bulk\_export** (*config\_ids=None, device\_ids=None, package\_ids=None, result\_ids=None, exclude\_captures=False*)  
Bulk export a set of configs, devices, packages and results.

### Parameters

- **config\_ids** – (optional) Int list of config IDs.
- **device\_ids** – (optional) Int list of device IDs.
- **package\_ids** – (optional) Int list of package IDs.
- **result\_ids** – (optional) Int list of result IDs.
- **exclude\_captures** – (optional) Exclude capture files if bool *True*.

**Return type** tuple (*io.BytesIO, 'filename'*)

## 2.17 History

### 2.17.1 HistoryService

**class** `cdrouter.history.HistoryService(service)`

Service for accessing CDRouter History.

**iter\_list** (\*args, \*\*kwargs)

Get a list of history entries. Whereas `list` fetches a single page of history entries according to its `limit` and `page` arguments, `iter_list` returns all history entries by internally making successive calls to `list`.

**Parameters**

- **args** – Arguments that `list` takes.
- **kwargs** – Optional arguments that `list` takes.

**Returns** `historys.History` list

**list** (filter=None, type=None, sort=None, limit=None, page=None, detailed=None)

Get a list of history entries, using summary representation by default (see `detailed` parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `history.Page` object

### 2.17.2 History

**class** `cdrouter.history.History(**kwargs)`

Model for CDRouter History entries.

**Parameters**

- **user\_id** – (optional) User ID as an int.
- **created** – (optional) Entry creation time as *DateTime*.
- **resource** – (optional) Resource type as string.
- **id** – (optional) Resource ID as an int.
- **name** – (optional) Resource name as string.
- **action** – (optional) Action name as string.
- **description** – (optional) Resource description as string.



### 2.17.3 Page

**class** `cdrouter.history.Page`

Named tuple for a page of list response data.

**Parameters**

- **data** – `history.History` list
- **links** – `cdrouter.Links` object

## 2.18 System

### 2.18.1 SystemService

**class** `cdrouter.system.SystemService` (*service*)

Service for accessing CDRouter System.

**check\_for\_lounge\_upgrade** (*email*)

Check the CDRouter Support Lounge for eligible upgrades using your Support Lounge email.

**Parameters** **email** – CDRouter Support Lounge email as a string.

**Returns** `system.Release` object

**Return type** *system.Release*

**diagnostics** ()

Get system diagnostics from `cdrouter-diag` output.

**Return type** tuple (*io.BytesIO*, 'filename')

**edit\_preferences** (*resource*)

Edit preferences in `/usr/cdrouter-data/etc/config.yml`.

**Parameters** **resource** – `system.Preferences` object

**Returns** `system.Preferences` object

**Return type** *system.Preferences*

**get\_preferences** ()

Get preferences from `/usr/cdrouter-data/etc/config.yml`.

**Returns** `system.Preferences` object

**Return type** *system.Preferences*

**hostname** ()

Get system hostname.

**Return type** string

**in\_use\_interfaces** ()

Get system interfaces, with flags to determine which are in use.

**Returns** `system.InUseInterface` list

**info** ()

Get system info from `cdrouter-cli -info` output.

**Return type** string

**interfaces** (*addresses=False*)

Get system interfaces.

**Parameters** **addresses** – (optional) If bool *True*, include interface addresses.

**Returns** `system.Interface` list

**latest\_lounge\_release** ()

Get the latest release of CDRouter from the CDRouter Support Lounge.

**Returns** `system.ReleaseLatest` object

**Return type** *system.ReleaseLatest*

**lounge\_update\_license** ()

Download & install a license for your CDRouter system from the CDRouter Support Lounge.

**Returns** `system.Upgrade` object

**Return type** *system.Upgrade*

**lounge\_upgrade** (*email, nonce, filename='cdrouter.rpm'*)

Download & install an upgrade from the CDRouter Support Lounge using your Support Lounge email and upgrade nonce. Please note that any running tests will be stopped.

**Parameters**

- **email** – CDRouter Support Lounge email as a string.
- **nonce** – Upgrade nonce from `system.Release`.
- **filename** – Upgrade filename from `system.Release`.

**Returns** `system.Upgrade` object

**Return type** *system.Upgrade*

**manual\_update\_license** (*fd, filename='cdrouter.lic'*)

Update the license on your CDRouter system manually by uploading a `.lic` license from the CDRouter Support Lounge.

**Parameters**

- **fd** – File-like object to upload.
- **filename** – (optional) Filename to use for license as string.

**manual\_upgrade** (*fd, filename='cdrouter.rpm'*)

Upgrade CDRouter manually by uploading an `.rpm` installer from the CDRouter Support Lounge. Please note that any running tests will be stopped.

**Parameters**

- **fd** – File-like object to upload.
- **filename** – (optional) Filename to use for installer as string.

**Returns** `system.Upgrade` object

**Return type** *system.Upgrade*

**poweroff** ()

Poweroff the NTA1000. Please note that any running tests will be stopped.

**reboot** ()

Reboot the NTA1000. Please note that any running tests will be stopped.

**restart()**

Restart the CDRouter Web UI. Please note that any running tests will be stopped.

**shutdown()**

Shutdown the CDRouter Web UI. Please note that any running tests will be stopped.

**space()**

Get system disk space usage.

**Returns** `system.Space` object

**Return type** `system.Space`

**time()**

Get system time.

**Return type** string

## 2.18.2 Version

**class** `cdrouter.system.Version(**kwargs)`

Model for CDRouter Release Versions.

### Parameters

- **raw** – (optional) Raw version as string.
- **major** – (optional) Major version as int.
- **minor** – (optional) Minor version as int.
- **build** – (optional) Build version as int.

## 2.18.3 ReleaseLatest

**class** `cdrouter.system.ReleaseLatest(**kwargs)`

Model for CDRouter Latest Releases.

### Parameters

- **latest** – (optional) `system.Version` object.
- **current** – (optional) `system.Version` object.
- **newer** – (optional) Bool *True* if newer release available.

## 2.18.4 Testsuite

**class** `cdrouter.system.Testsuite(**kwargs)`

Model for CDRouter Testsuite names.

### Parameters

- **shortname** – (optional) Brief testsuite name as string.
- **name** – (optional) Full testsuite name as string.

### 2.18.5 Release

**class** `cdrouter.system.Release` (*\*\*kwargs*)  
Model for CDRouter Releases.

#### Parameters

- **build\_date** – (optional) Build date as string.
- **filename** – (optional) Installer filename as string.
- **version** – (optional) `system.Version` object
- **testsuite** – (optional) `system.Testsuite` object
- **nonce** – (optional) Upgrade nonce as string.

### 2.18.6 Upgrade

**class** `cdrouter.system.Upgrade` (*\*\*kwargs*)  
Model for CDRouter Upgrades.

#### Parameters

- **success** – (optional) Bool *True* if successful.
- **installer\_path** – (optional) Installer filename as string.
- **output** – (optional) Output as string.
- **error** – (optional) Error output as string.

### 2.18.7 InterfaceFlags

**class** `cdrouter.system.InterfaceFlags` (*\*\*kwargs*)  
Model for CDRouter Interface Flags.

#### Parameters

- **up** – (optional) Bool *True* if interface is up.
- **broadcast** – (optional) Bool *True* if interface is broadcasting.
- **loopback** – (optional) Bool *True* if interface is a loopback interface.
- **point\_to\_point** – (optional) Bool *True* if interface is a point-to-point interface.
- **multicast** – (optional) Bool *True* if interface is multicast.

### 2.18.8 InterfaceAddr

**class** `cdrouter.system.InterfaceAddr` (*\*\*kwargs*)  
Model for CDRouter Interface Addresses.

#### Parameters

- **network** – (optional) Interface network as a string.
- **address** – (optional) Interface address as a string.

### 2.18.9 Interface

**class** cdrouter.system.**Interface** (\*\*kwargs)  
Model for CDRouter Interfaces.

#### Parameters

- **index** – (optional) Interface index as an int.
- **mtu** – (optional) Interface MTU as an int.
- **name** – (optional) Interface name as a string.
- **hardware\_addr** – (optional) Interface hardware address as a string.
- **flags** – (optional) `system.InterfaceFlags` object
- **addresses** – (optional) `system.InterfaceAddr` list
- **multicast\_addresses** – (optional) `system.InterfaceAddr` list

### 2.18.10 InUseInterfaceFlags

**class** cdrouter.system.**InUseInterfaceFlags** (\*\*kwargs)  
Model for CDRouter In Use Interface Flags.

#### Parameters

- **in\_use** – (optional) Bool *True* if interface is in use by a running job.
- **is\_wireless** – (optional) Bool *True* if interface is a wireless interface.
- **is\_ics** – (optional) Bool *True* if interface is in use as the ICS interface of a running job.

### 2.18.11 InUseInterface

**class** cdrouter.system.**InUseInterface** (\*\*kwargs)  
Model for CDRouter In Use Interfaces.

#### Parameters

- **name** – (optional) Interface name as a string.
- **flags** – (optional) `system.InUseInterfaceFlags` object

### 2.18.12 Preferences

**class** cdrouter.system.**Preferences** (\*\*kwargs)  
Model for CDRouter Preferences.

#### Parameters

- **automatic\_login** – (optional) Bool *True* if Automatic Login is enabled.
- **cloudshark\_appliance\_autotags** – (optional) CloudShark Appliance autotags as a string.
- **cloudshark\_appliance\_insecure** – (optional) String *yes* if insecure CloudShark Appliance URLs are allowed.

- **cloudshark\_appliance\_password** – (optional) CloudShark Appliance password as a string.
- **cloudshark\_appliance\_tags** – (optional) CloudShark Appliance tags as a string.
- **cloudshark\_appliance\_token** – (optional) CloudShark Appliance API token as a string.
- **cloudshark\_appliance\_url** – (optional) CloudShark Appliance URL as a string.
- **cloudshark\_appliance\_username** – (optional) CloudShark Appliance username as a string.
- **hostname** – (optional) CDRouter system’s hostname as a string.
- **migrated** – (optional) Migrated resources as a string list.
- **port** – (optional) CDRouter’s HTTP port as an int.
- **https** – (optional) CDRouter’s HTTPS port as an int.
- **force\_https** – (optional) If string *yes*, redirect HTTP connections to CDRouter to HTTPS.
- **use\_cloudshark** – (optional) If string *yes*, use CloudShark Appliance for capture viewing.
- **log\_timestamp\_format** – (optional) Log timestamp format, must be string *short* or *long*.
- **editor\_keymap** – (optional) Config editor keymap, must be string *default*, *emacs* or *vim*.
- **lounge\_url** – (optional) CDRouter Support Lounge URL as a string.
- **lounge\_insecure** – (optional) If bool *True*, allow insecure HTTPS connections to the CDRouter Support Lounge.

### 2.18.13 Space

**class** `cdrouter.system.Space` (*\*\*kwargs*)  
Model for CDRouter Disk Space Usage.

#### Parameters

- **avail** – (optional) Available disk space as an int.
- **path** – (optional) Path to CDRouter’s data directory as a string.
- **pcent** – (optional) Percentage of disk space used as an int.
- **size** – (optional) Total disk space as an int.
- **unit** – (optional) Disk space units as a string, default is ‘bytes’.
- **used** – (optional) Used disk space as an int.

## 2.19 Tags

### 2.19.1 TagsService

**class** `cdrouter.tags.TagsService` (*service*)  
Service for accessing CDRouter Tags.

**delete** (*name*)

Delete a tag.

**Parameters** **name** – Tag name as string.

**edit** (*resource*, *old\_name=None*)

Edit a tag. When renaming a tag, *old\_name* must be set to the old tag name.

**Parameters**

- **resource** – `tags.Tag` object
- **old\_name** – (optional) Old tag name as a string. Only required when renaming a tag.

**Returns** `tags.Tag` object

**Return type** `tags.Tag`

**get** (*name*)

Get a tag.

**Parameters** **name** – Tag name as string.

**Returns** `tags.Tag` object

**Return type** `tags.Tag`

**list** (*resource=None*, *sort=None*)

Get a list of tags.

**Parameters**

- **resource** – (optional) Restrict to given resource type as string.
- **sort** – (optional) Sort fields to apply as string list.

**Returns** `tags.Tag` list

## 2.19.2 Tag

**class** `cdrouter.tags.Tag` (*\*\*kwargs*)

Model for CDRouter Tags.

**Parameters**

- **resource** – (optional) Resource type as string.
- **id** – (optional) Resource ID as an int.
- **name** – (optional) Resource name as string.
- **count** – (optional) Resource tag count as an int.
- **tags** – (optional) Resource tags as a string list.
- **configs** – (optional) `tags.ResourceTags` list
- **devices** – (optional) `tags.ResourceTags` list
- **packages** – (optional) `tags.ResourceTags` list
- **results** – (optional) `tags.ResourceTags` list

## 2.19.3 ResourceTags

**class** `cdrouter.tags.ResourceTags` (*\*\*kwargs*)  
Model for CDRouter Resource Tags.

**Parameters**

- **id** – (optional) Resource ID as an int.
- **name** – (optional) Resource name as string.
- **tags** – (optional) Resource tags as a string list.

## 2.20 Testsuites

### 2.20.1 TestsuitesService

**class** `cdrouter.testsuites.TestsuitesService` (*service*)  
Service for accessing CDRouter Testsuites.

**get\_error** (*name*)  
Get an error.

**Parameters** **name** – Error name as string.

**Returns** `testsuites.Error` object

**Return type** *testsuites.Error*

**get\_group** (*name*)  
Get a group.

**Parameters** **name** – Group name as string.

**Returns** `testsuites.Group` object

**Return type** *testsuites.Group*

**get\_label** (*name*)  
Get a label.

**Parameters** **name** – Label name as string.

**Returns** `testsuites.Label` object

**Return type** *testsuites.Label*

**get\_module** (*name*)  
Get a module.

**Parameters** **name** – Module name as string.

**Returns** `testsuites.Module` object

**Return type** *testsuites.Module*

**get\_test** (*name*)  
Get a test.

**Parameters** **name** – Test name as string.

**Returns** `testsuites.Test` object

**Return type** *testsuites.Test*



**get\_testvar** (*name*)

Get a testvar.

**Parameters** **name** – Testvar name as string.

**Returns** `testsuites.Testvar` object

**Return type** *testsuites.Testvar*

**info** ()

Get testsuite info.

**Returns** `testsuites.Info` object

**Return type** *testsuites.Info*

**list\_errors** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of errors.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Error` list

**list\_groups** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of groups.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Group` list

**list\_labels** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of labels.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Label` list

**list\_modules** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of modules.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.

- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Module` list

**list\_tests** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of tests.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Test` list

**list\_testvars** (*filter=None, type=None, sort=None, detailed=None*)

Get a list of testvars.

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `testsuites.Testvar` list

**search** (*query*)

Perform full text search of testsuite.

**Parameters** **query** – Search query as a string.

**Returns** `testsuites.Search` object

**Return type** *testsuites.Search*

**update** ()

Update testsuite info.

## 2.20.2 Info

**class** `cdrouter.testsuites.Info` (*\*\*kwargs*)

Model for CDRouter Testsuite Info.

**Parameters**

- **id** – (optional) Testsuite ID as an int.
- **build\_info** – (optional) CDRouter build info as string.
- **copyright** – (optional) CDRouter copyright info as string.
- **license\_type** – (optional) License type as string.
- **customer** – (optional) Customer name from license as string.
- **lifetime** – (optional) License lifetime as string.
- **killtime** – (optional) License killtime as string.

- **nag** – (optional) Bool *True* if should nag leading up to license expiration.
- **os** – (optional) OS name as string.
- **os\_type** – (optional) OS type as string.
- **serial\_number** – (optional) NTA serial number as string.
- **system\_id** – (optional) CDRouter system ID as string.
- **testsuite** – (optional) CDRouter testsuite name as string.
- **release** – (optional) CDRouter release as string.
- **addons** – (optional) Enabled CDRouter addons as string list.
- **all\_addons** – (optional) All CDRouter addons as string list.
- **interfaces** – (optional) `configs.Interfaces` list
- **execute\_instances** – (optional) Execute instances as an int.
- **license\_info** – (optional) `testsuites.LicenseInfo` object

### 2.20.3 Group

**class** `cdrouter.testsuites.Group` (*\*\*kwargs*)  
Model for CDRouter Groups.

#### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as string.
- **index** – (optional) Index as int.
- **test\_count** – (optional) Test count as int.
- **modules** – (optional) Modules as string list.

### 2.20.4 Module

**class** `cdrouter.testsuites.Module` (*\*\*kwargs*)  
Model for CDRouter Modules.

#### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as string.
- **index** – (optional) Index as int.
- **group** – (optional) Group name as string.
- **description** – (optional) Module description as string.
- **test\_count** – (optional) Test count as int.
- **tests** – (optional) Tests as string list.
- **labels** – (optional) Labels as string list.
- **aliases** – (optional) Aliases as string list.

### 2.20.5 Test

**class** `cdrouter.testsuites.Test` (*\*\*kwargs*)  
Model for CDRouter Tests.

#### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as string.
- **index** – (optional) Index as int.
- **group** – (optional) Group name as string.
- **module** – (optional) Module name as string.
- **synopsis** – (optional) Test synopsis as string.
- **description** – (optional) Test description as string.
- **labels** – (optional) Labels as string list.
- **aliases** – (optional) Aliases as string list.
- **testvars** – (optional) Testvars as string list.
- **skip\_name** – (optional) Skip name as string.
- **skip\_reason** – (optional) Skip reason as string.

### 2.20.6 Label

**class** `cdrouter.testsuites.Label` (*\*\*kwargs*)  
Model for CDRouter Skip Labels.

#### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as string.
- **index** – (optional) Index as int.
- **reason** – (optional) Skip reason as string.
- **description** – (optional) Description as string.
- **modules** – (optional) Modules as string list.
- **tests** – (optional) Tests as string list.

### 2.20.7 Error

**class** `cdrouter.testsuites.Error` (*\*\*kwargs*)  
Model for CDRouter Start Errors.

#### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as string.
- **index** – (optional) Index as int.

- **description** – (optional) Description as string.

## 2.20.8 Testvar

**class** `cdrouter.testsuites.Testvar` (*\*\*kwargs*)

Model for CDRouter Start Errors.

### Parameters

- **id** – (optional) Testsuite ID as an int.
- **name** – (optional) Name as a string.
- **index** – (optional) Index as an int.
- **humanname** – (optional) Human-readable name as a string.
- **display** – (optional) Display name as a string.
- **dataclass** – (optional) Data-type as a string.
- **addedin** – (optional) Added-in info as a string.
- **deprecatedin** – (optional) Deprecated-in info as a string.
- **obsoletedin** – (optional) Obsoleted-in info as a string.
- **min** – (optional) Minimum value as a string.
- **max** – (optional) Maximum value as a string.
- **length** – (optional) Required length as a string.
- **description** – (optional) Description as a string.
- **default** – (optional) Default value as a string.
- **defaultdisabled** – (optional) Bool *True* if testvar has no default value.
- **dyndefault** – (optional) Bool *True* if testvar’s default value is dynamically calculated.
- **keywords** – (optional) Accepted values as a string list.
- **alsoaccept** – (optional) Also-accepted values as a string list.
- **wildcard** – (optional) Bool *True* if testvar is a wildcard testvar.
- **instances** – (optional) Number of allowed wildcard instances as an int.
- **parent** – (optional) Parent wildcard testvar name as a string.
- **children** – (optional) Child testvars as a string list.
- **tests** – (optional) Test names as a string list.

## 2.20.9 Search

**class** `cdrouter.testsuites.Search` (*\*\*kwargs*)

Model for CDRouter Testsuite Searches.

### Parameters

- **addons** – (optional) `testsuites.Group` list
- **modules** – (optional) `testsuites.Module` list

- **tests** – (optional) `testsuites.Test` list
- **reasons** – (optional) `testsuites.Label` list
- **errors** – (optional) `testsuites.Error` list
- **testvars** – (optional) `testsuites.Testvar` list

## 2.21 Users

### 2.21.1 UsersService

**class** `cdrouter.users.UsersService` (*service*)

Service for accessing CDRouter Users.

**bulk\_copy** (*ids*)

Bulk copy a set of users.

**Parameters** **ids** – Int list of user IDs.

**Returns** `users.User` list

**bulk\_delete** (*ids=None, filter=None, type=None, all=False*)

Bulk delete a set of users.

**Parameters**

- **ids** – (optional) Int list of user IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**bulk\_edit** (*\_fields, ids=None, filter=None, type=None, all=False*)

Bulk edit a set of users.

**Parameters**

- **\_fields** – `users.User` object
- **ids** – (optional) Int list of user IDs.
- **filter** – (optional) String list of filters.
- **type** – (optional) *union* or *inter* as string.
- **all** – (optional) Apply to all if bool *True*.

**change\_password** (*id, new, old=None, change\_token=True*)

Change a user's password.

**Parameters**

- **id** – User ID as an int.
- **new** – New password as string.
- **old** – (optional) Old password as string (required if performing action as non-admin).
- **change\_token** – (optional) If bool *True*, also generate a new API token for user.

**Returns** `users.User` object

**Return type** *users.User*

**change\_token** (*id*)

Change a user's token.

**Parameters** *id* – User ID as an int.

**Returns** *users.User* object

**Return type** *users.User*

**create** (*resource*)

Create a new user.

**Parameters** *resource* – *users.User* object

**Returns** *users.User* object

**Return type** *users.User*

**delete** (*id*)

Delete a user.

**Parameters** *id* – User ID as an int.

**edit** (*resource*)

Edit a user.

**Parameters** *resource* – *users.User* object

**Returns** *users.User* object

**Return type** *users.User*

**get** (*id*)

Get a user.

**Parameters** *id* – User ID as an int.

**Returns** *users.User* object

**Return type** *users.User*

**get\_by\_name** (*name*)

Get a user by name.

**Parameters** *name* – User name as string.

**Returns** *users.User* object

**Return type** *users.User*

**iter\_list** (*\*args, \*\*kwargs*)

Get a list of users. Whereas *list* fetches a single page of users according to its *limit* and *page* arguments, *iter\_list* returns all users by internally making successive calls to *list*.

**Parameters**

- **args** – Arguments that *list* takes.
- **kwargs** – Optional arguments that *list* takes.

**Returns** *users.User* list

**list** (*filter=None, type=None, sort=None, limit=None, page=None, detailed=None*)

Get a list of users, using summary representation by default (see *detailed* parameter).

**Parameters**

- **filter** – (optional) Filters to apply as a string list.
- **type** – (optional) *union* or *inter* as string.
- **sort** – (optional) Sort fields to apply as string list.
- **limit** – (optional) Limit returned list length.
- **page** – (optional) Page to return.
- **detailed** – (optional) Return all fields if Bool *True*.

**Returns** `users.Page` object

**lock** (*id*)

Lock a user. Locking prevents the user from being modified or deleted until it is unlocked.

**Parameters** **id** – User ID as an int.

**Returns** `users.User` object

**Return type** *users.User*

**unlock** (*id*)

Unlock a user. Unlocking a locked user allows it to be modified or deleted once again.

**Parameters** **id** – User ID as an int.

**Returns** `users.User` object

**Return type** *users.User*

## 2.21.2 User

**class** `cdrouter.users.User` (*\*\*kwargs*)

Model for CDRouter Users.

**Parameters**

- **id** – (optional) User ID as an int.
- **admin** – (optional) Bool *True* if user is an administrator.
- **disabled** – (optional) Bool *True* if user is disabled.
- **name** – (optional) User name as string.
- **description** – (optional) User description as string.
- **created** – (optional) User creation time as *DateTime*.
- **updated** – (optional) User last-updated time as *DateTime*.
- **locked** – (optional) Bool *True* if user is locked.
- **token** – (optional) User's API token as string.

## 2.21.3 Page

**class** `cdrouter.users.Page`

Named tuple for a page of list response data.

**Parameters**

- **data** – `users.User` list



- **links** – `cdrouter.Links` object



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