tr064

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This package provides a very lightweight and straight-forward TR-064 client, that pulls every information about supported services from the routers description files.

Note: This documentation is a work in progress. Feedback and revisions are most welcome!

CHAPTER 1

Installation

Easiest way to install is to use pip:

```
$ python3 -m pip install tr064
```

To update a previous version:

```
$ python3 -m pip install --upgrade tr064
```

1.1 TR-064 API

1.1.1 General usage

Create a client connection to the router:

```
import tr064

client = tr064.Client('username', 'password', 'http://192.168.178.1:49000')

res = client.InternetGatewayDevice.DeviceInfo.GetInfo()
print(res.NewManufacturerName)
```

Actions (functions) are executed by append `device`, `service` and `action` to the client:

```
Client.DeviceName.ServiceName.ActionName(Arguments, ...)
```

If a service is offered multiple times, actions can be accessed by the zero-based square bracket operator:

```
Client.DeviceName.ServiceName[1].ActionName(Arguments, ...)
```

See more *Examples*.

Note: If services, actions or arguments contain a minus sign -, it must be replaced with an underscore _ and vice versa.

1.1.2 API

Client

class `tr064.client.`**`Client`**(*username*, *password*, *base_url='https://192.168.178.1:49443'*)

TR-064 client.

Parameters

- **`username`** (*`str`*) – Username with access to router.
- **`password`** (*`str`*) – Passwort to access router.
- **`base_url`** (*`str`*) – URL to router.

Exceptions

TR-064 exceptions.

exception `tr064.exceptions.`**`TR064Exception`**

TR-064 base exception.

exception `tr064.exceptions.`**`TR064UnknownDeviceException`**

TR-064 unknown device exception.

exception `tr064.exceptions.`**`TR064UnknownServiceException`**

TR-064 unknown service exception.

exception `tr064.exceptions.`**`TR064UnknownServiceIndexException`**

TR-064 unknown service index exception.

exception `tr064.exceptions.`**`TR064UnknownActionException`**

TR-064 unknown action exception.

exception `tr064.exceptions.`**`TR064UnknownArgumentException`**

TR-064 unknown argument exception.

exception `tr064.exceptions.`**`TR064MissingArgumentException`**

TR-064 missing argument exception.

Note: All following classes are never used directly! They are only documented for the sake of completeness.

Device

class `tr064.device.`**`Device`**(*xml*, *auth*, *base_url*)

TR-064 device.

Parameters

- **`xml`** (*`lxml.etree.Element`*) – XML device element

- **auth** (*HTTPBasicAuthHandler*) – HTTPBasicAuthHandler object, e.g. HTTPDigestAuth
- **base_url** (*str*) – URL to router.

Service

class tr064.service.**Service**(*auth*, *base_url*, *service_type*, *service_id*, *scpdurl*, *control_url*, *event_sub_url*)

TR-064 service.

Action

class tr064.action.**Action**(*xml*, *auth*, *base_url*, *name*, *service_type*, *service_id*, *control_url*)

TR-064 action.

Parameters

- **xml** (*lxml.etree.Element*) – XML action element
- **auth** (*HTTPBasicAuthHandler*) – HTTPBasicAuthHandler object, e.g. HTTPDigestAuth
- **base_url** (*str*) – URL to router.
- **name** (*str*) – Action name
- **service_type** (*str*) – Service type
- **service_id** (*str*) – Service ID
- **control_url** (*str*) – Control URL

Helper

class tr064.attribute_dict.**AttributeDict**

Direct access dict entries like attributes.

class tr064.service_list.**ServiceList**

Service list.

1.2 Examples

All devices and services used in the following examples are taken from the TR-064 Description XML. Used actions are described in the XML refered with the `SCPDURL` element of each service. More details about the action can be obtained from the router manufacturer.

Devices/Services/Actions:

- ***InternetGatewayDevice***
  - ***DeviceInfo***
    - *GetInfo*
    - *GetSecurityPort*
- ***LANDevice***

- *Hosts*
  - *GetHostNumberOfEntries/GetGenericHostEntry*
- *WLANConfiguration*
  - *GetInfo/SetEnable*

1.2.1 InternetGatewayDevice

DeviceInfo

Support `urn:DeviceInfo-com:serviceId:DeviceInfo1`.

GetInfo

Getting router information:

```
res = client.InternetGatewayDevice.DeviceInfo.GetInfo()
print('ManufacturerName', res.NewManufacturerName)
print('ManufacturerOUI', res.NewManufacturerOUI)
print('ModelName', res.NewModelName)
print('Description', res.NewDescription)
```

GetSecurityPort

Get port for secure access:

```
unsafe_client = tr064.Client('username', 'password', 'http://192.168.178.1:49000')
res = unsafe_client.InternetGatewayDevice.DeviceInfo.GetSecurityPort()

safe_client = tr064.Client('username', 'password', 'https://192.168.178.1:{}'.
↪format(res.NewSecurityPort))
```

1.2.2 LANDevice

Hosts

GetHostNumberOfEntries/GetGenericHostEntry

List all assigned network devices:

```
number_of_entries = client.LANDevice.Hosts.GetHostNumberOfEntries()
for index in range(int(number_of_entries.NewHostNumberOfEntries)):
    host = client.LANDevice.Hosts.GetGenericHostEntry(NewIndex=index)
    print(host.NewIPAddress, host.NewMACAddress, host.NewHostName)
```

WLANConfiguration

GetInfo/SetEnable

Enable third WLAN device if not enabled:

```
info = client.LANDevice.WLANConfiguration[2].GetInfo()
if not bool(info.NewEnable):
    client.LANDevice.WLANConfiguration[2].SetEnable(NewEnable=1)
```

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