# Developper manual of RasPy

***Release 0.0.1***

**bibi21000**

January 11, 2015

Contents

CHAPTER 1

# Installation

## 1.1 Raspbian

Install official raspbian from here : http://www.raspbian.org/.

Newbies can install it from : http://www.raspberrypi.org/downloads/.

Developpers or others can also install it on standard distributions (Ubuntu, Debian, RedHat, ...).

## 1.2 Update packages

You can now update packages

```
sudo apt-get -y update
sudo apt-get -y dist-upgrade
```

We need to install some packages to download and build RasPy:

```
sudo apt-get -y install build-essential python-dev python-minimal python python2.7-dev python2.7-m
```

Some packages need to be removed as new versions are available from eggs :

```
sudo apt-get remove python-zmq libzmq1 libzmq-dev python-nose pylint
```

## 1.3 Download it

You should now download RasPy using git. You should not download and install RasPy with root user. Idealy, you should create a special user for running RasPy or the pi user. Keep in mind root is baaaddddd.

```
git clone https://github.com/bibi21000/RasPy.git
```

## 1.4 Configure your system

- access rights
- sudo nopasswd
- ...

## 1.5 Installation

If you want to develop for RasPy, you need to install it in develop mode :

```
sudo make develop
```

Otherwise install it normaly ... but not now ;) :

```
sudo make install
```

And be patient ... installation need to compile zmq ... It takes a while ...

## 1.6 Run the tests

Check that the SLEEP constant in tests/common.py ist set to 1.0 or 1.5

```
vim tests/common.py
```

You can now check that everything is fine running the tests :

```
make tests
```

If it fails ... run it again :) At last, copy / paste the full screen output and send it to the core team.

## 1.7 Start it

In the next monthes, you should be abble to start it :

```
make start
```

## 1.8 Read the doc

- docs/pdf
- docs/html

CHAPTER 2

# Develop

If you want to develop you surely need vim :

```
sudo apt-get -y install vim-nox vim-addon-manager
```

## 2.1 Phylosophy

Tests, tests, ... and tests :

- A bug -> a test -> a patch
- A new feature -> many test

And documentation

- A new feature -> documentation

## 2.2 Documentation

If you want to generate the documentation, you need to install some packages :

```
sudo apt-get -y install python-sphinx graphviz
```

And some eggs :

```
sudo pip install seqdiag sphinxcontrib-seqdiag
sudo pip install blockdiag sphinxcontrib-blockdiag
sudo pip install nwdiag sphinxcontrib-nwdiag
sudo pip install actdiag sphinxcontrib-actdiag
```

You can now generate the full documentation using :

```
make docs
```

You can also generate a part of it, for example :

```
cd docs
make html
```

## 2.3 Tests

Nosetests and pylint are used to test quality of code. There reports are here :

- Nosetests report

- Coverage report
- Pylint report

Coverage is not the goal but it's one : a module must have a coverage of 90% to be accpeted by core team. Otherwise it will block the packaging process. Of course, a FAILED test will also.

You can run the developpers test running :

```
make devtests
```

If you're on a raspberry, you can run the full tests like this :

```
make tests
```

Running only one test module :

```
/usr/local/bin/nosetests --verbosity=2 --cover-package=raspy --with-coverage --cover-inclusive --
```

## 2.4 A new device

## 2.5 A new server

CHAPTER 3

# raspy package

## 3.1 Subpackages

### 3.1.1 raspy.common package

#### Subpackages

##### raspy.common.devices package

**Submodules**

**raspy.common.devices.device module** Devices.

**class** raspy.common.devices.device.**BaseDevice**(*json=None*)

Bases: object

The base device object

What is a device :

- a temperature sensor
- a wind sensor
- a camera
- the clock RTC
- a dimmer
- a TV
- ...

What can we do with a device :

- get value of a sensor
- dim a dimmer
- take a photo with camera
- ...

We shoud do auto-mapping :

- python object <-> json
- python object <-> html

We whould manage complex devices, ie a TV : it groups a channel selector (+, -, and direct access to a channel), a volume selector, ... In an ideal world we should not be obliged to create each sub-devices.

Naming convention of devices on the network : (MDP.routing_key(hostname, service)).{device_name}[.subdevice]

**check** (*json=None*)
Check that the JSON is a valid device

**fullname** (*prefix*)
The fullname of the device

**json**
Check that the JSON is a valid device

**name**
The name of the device Must be unique for the instance server.

**new** (*json=None*)
Create a new device and return it

**oid = 'base'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**template**
The template of the device

**templates = {}**
The templates dictionnary Every device must add an entry for its config Will be used to check the device

**class** raspy.common.devices.device.**DeviceRegister**
Bases: object

The device register

All devices must register to this register (in main module)

**check** (*json=None*)
Check that the JSON is a valid device

**new** (***kwargs*)
Create a new device and return it

**register** (*device_type*)
Register a device_type under key

**raspy.common.devices.media module** Media devices

**class** raspy.common.devices.media.**MediaCamera** (***kwargs*)
Bases: raspy.common.devices.media.MediaDevice

The camera device object

**new** (***kwargs*)
Create a new device and return it

**oid = 'media.camera'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**class** raspy.common.devices.media.**MediaDevice** (***kwargs*)
Bases: raspy.common.devices.device.BaseDevice

The sensor device object

**check** (*json=None*)
Check that the JSON is a valid device

**oid = 'media'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**class** raspy.common.devices.media.**MediaTV**(***kwargs*)
Bases: raspy.common.devices.media.MediaDevice

The temperature sensor device object

**new** (***kwargs*)
Create a new device and return it

**oid = 'media.tv'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**raspy.common.devices.sensor module** Sensors devices

**class** raspy.common.devices.sensor.**SensorDevice**(***kwargs*)
Bases: raspy.common.devices.device.BaseDevice

The sensor device object

**check** (*json=None*)
Check that the JSON is a valid device

**oid = 'sensor'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**class** raspy.common.devices.sensor.**SensorTemperature**(***kwargs*)
Bases: raspy.common.devices.sensor.SensorDevice

The temperature sensor device object

**new** (***kwargs*)
Create a new device and return it

**oid = 'sensor.temperature'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**class** raspy.common.devices.sensor.**SensorWind**(***kwargs*)
Bases: raspy.common.devices.sensor.SensorDevice

The wind sensor device object

**new** (***kwargs*)
Create a new device and return it

**oid = 'sensor.wind'**
The Object Identifier It should be given by the core team as it can break other devices. Need to define a naming convention : sensor, sensor.temperature, media.camera, ...

**Module contents**

### Submodules

### raspy.common.MDP module

**exception** raspy.common.MDP.**ClientError**(*value*)
Bases: raspy.common.MDP.GenericError

Client side exception

**exception** raspy.common.MDP.**GenericError**(*value*)
Bases: exceptions.Exception

Generic exception

**exception** raspy.common.MDP.**ServerError**(*value*)
Bases: raspy.common.MDP.GenericError

Server side exception

raspy.common.MDP.**logger = <logging.Logger object at 0x2b5d53e09350>**
Majordomo Protocol definitions

raspy.common.MDP.**routing_key**(*hostname*, *service*)

### raspy.common.client module

**class** raspy.common.client.**Client**(*hostname='localhost'*, *service='worker'*, *broker_ip='127.0.0.1'*, *broker_port=5514*, *poll=1500*, *ttl=900*)
Bases: raspy.common.executive.Executive

The generic worker

From http://zguide.zeromq.org/py:all#header-48

**request**(*service=None, data=['mmi.echo'], callback=None, args=(), kwargs={}*)
Request a job to a worker

**run**()
Run the client

**status**(*uuid*)
Request a job to a worker

### raspy.common.dynamic module

raspy.common.dynamic.**importCode**(*code*, *name*, *add_to_sys_modules=False*)

### raspy.common.executive module

**class** raspy.common.executive.**Executive**(*hostname='localhost'*, *service='executive'*, *broker_ip='127.0.0.1'*, *broker_port=5514*)
Bases: object

The Executive mother class for all workers

**todo :**

- bug : can't stop when jobs in queues

**destroy**()
Wait for threads and destroy contexts.

**get_instance_id**()
Return the instance of the exective

... todo : must be multihost and multithread.

**run**()
Run the executive

**shutdown**()
Shutdown executive.

**class** raspy.common.executive.**ExecutiveProcess**(*executive*, *executive_name*)
Bases: multiprocessing.process.Process

Process executing tasks from a given tasks queue

**run**()

**shutdown**()
Method to deactivate the client connection completely.

Will delete the stream and the underlying socket.

> **Warning:** The instance MUST not be used after shutdown() has been called.

**Return type** None

### raspy.common.kvcliapi module

kvsimple - simple key-value message class for example applications

Author: Min RK <benjaminrk@gmail.com>

From : http://zguide.zeromq.org/py:kvsimple

**class** raspy.common.kvcliapi.**KvPublisherClient**(*hostname='localhost'*, *broker_ip='127.0.0.1'*, *broker_port=5514*)
Bases: object

KeyValue Protocol Client API, Python version.

Implements the client defined at http://zguide.zeromq.org/page:all#Working-with-Subtrees

From https://raw.githubusercontent.com/imatix/zguide/master/examples/Python/clonecli4.py

**destroy**()
Destroy object

**send**(*subtree='subtree'*, *key='key'*, *body='body'*)
Send the update

**class** raspy.common.kvcliapi.**KvSubscriberClient**(*hostname='localhost'*, *subtree='subtree'*, *broker_ip='127.0.0.1'*, *broker_port=5514*, *speed=1.0*)
Bases: object

KeyValue Protocol Client API, Python version.

Implements the client defined at http://zguide.zeromq.org/page:all#Working-with-Subtrees From https://raw.githubusercontent.com/imatix/zguide/master/examples/Python/clonecli4.py

**destroy**()
Destroy object

**run**()
Run the poller

**shutdown**()
Shutdown the broker.

### raspy.common.kvsimple module

kvsimple - simple key-value message class for example applications

Author: Min RK <benjaminrk@gmail.com>

From : http://zguide.zeromq.org/py:kvsimple

**class** raspy.common.kvsimple.**KVMsg**(*sequence*, *key=None*, *body=None*)
Bases: object

**Message is formatted on wire as 3 frames:**

- frame 0: key (0MQ string)
- frame 1: sequence (8 bytes, network order)
- frame 2: body (blob)

**body = None**

**dump**()
Dump me to a string"

**key = None**

**classmethod recv**(*socket*)
Reads key-value message from socket, returns new kvmsg instance.

**send**(*socket*)
Send key-value message to socket; any empty frames are sent as such.

**sequence = 0**

**store**(*dikt*)
Store me in a dict if I have anything to store

### raspy.common.mdcliapi module

Majordomo Protocol Client API, Python version.

Implements the MDP/Worker spec at http:#rfc.zeromq.org/spec:7.

Author: Min RK <benjaminrk@gmail.com> Based on Java example by Arkadiusz Orzechowski

**class** raspy.common.mdcliapi.**MajorDomoClient**(*broker*)
Bases: object

Majordomo Protocol Client API, Python version.

Implements the MDP/Worker spec at http:#rfc.zeromq.org/spec:7.

**broker = None**

**client = None**

**ctx = None**

**destroy**()
Destroy object

**poller = None**

**reconnect_to_broker**()
Connect or reconnect to broker

**retries = 3**

**send**(*service*, *request*)
Send request to broker and get reply by hook or crook.

Takes ownership of request message and destroys it when sent. Returns the reply message or None if there was no reply.

**timeout = 2500**

**verbose = False**

### raspy.common.mdwrkapi module

Majordomo Protocol Worker API, Python version

Implements the MDP/Worker spec at http:#rfc.zeromq.org/spec:7.

Author: Min RK <benjaminrk@gmail.com> Based on Java example by Arkadiusz Orzechowski

**class** raspy.common.mdwrkapi.**MajorDomoWorker**(*broker*, *service*)
Bases: object

Majordomo Protocol Worker API, Python version

Implements the MDP/Worker spec at http:#rfc.zeromq.org/spec:7.

**HEARTBEAT_LIVENESS = 3**

**broker = None**

**ctx = None**

**destroy**()
Destroy object

**expect_reply = False**

**heartbeat = 2500**

**heartbeat_at = 0**

**liveness = 0**

**reconnect = 2500**

**reconnect_to_broker**()
Connect or reconnect to broker

**recv**(*reply=None*)
Send reply, if any, to broker and wait for next request.

**reply_to = None**

**send_to_broker**(*command*, *option=None*, *msg=None*)
Send message to broker.

. If no msg is provided, creates one internally

**service = None**

**shutdown**()
Shutdown executive.

**status = True**
The status of the worker. Should be update by callback in the future

**timeout = 2500**

**verbose = False**

**worker = None**

### raspy.common.runner module

The runner

Start a worker or a broker as a daemon.

Must be updated to work with multiple workers.

What do we need :

- the user ou userid

- the log file
- the error output
- the standard output
- the pid file
- the working directory

Based on the runner of python-daemon :

- Copyright © 2009–2010 Ben Finney <ben+python@benfinney.id.au>
- Copyright © 2007–2008 Robert Niederreiter, Jens Klein
- Copyright © 2003 Clark Evans
- Copyright © 2002 Noah Spurrier
- Copyright © 2001 Jürgen Hermann

**class** raspy.common.runner.**Runner**(*hostname=None*, *service='myrunnerinstance'*, *user=None*, *log_dir='/var/log'*, *conf_dir='/etc'*, *run_dir='/var/run'*, *context=None*, *endpoint_autoconf=None*)

Bases: object

Controller for a callable running in a separate background process.

The first command-line argument is the action to take:

- 'start': Become a daemon and call *app.run()*.
- 'stop': Exit the daemon process specified in the PID file.
- 'restart': Stop, then start.
- 'status': Show the status of the process.

**action_funcs = {'status': <function _status at 0x2b5d56549cf8>, 'reload': <function _reload at 0x2b5d56549de8>,**

**app_reload**()
The reload process of the application

**app_run**()
The running process of the application

**app_shutdown**()
The shutdown process of the application

**do_action**()
Perform the requested action.

**parse_args**(*argv=None*)
Parse command-line arguments.

**sighup_handler**(*signal*, *frame*)

**sigterm_handler**(*signal*, *frame*)

**start_message = 'started with pid %(pid)d'**

**status_message_not_running = 'process is not running'**

**status_message_running = 'process is running'**

**exception** raspy.common.runner.**RunnerError**
Bases: exceptions.Exception

Abstract base class for errors.

**exception** raspy.common.runner.**RunnerInvalidActionError**
Bases: exceptions.ValueError, raspy.common.runner.RunnerError

Raised when specified action is invalid.

**exception** raspy.common.runner.**RunnerStartFailureError**
Bases: exceptions.RuntimeError, raspy.common.runner.RunnerError

Raised when failure starting.

**exception** raspy.common.runner.**RunnerStopFailureError**
Bases: exceptions.RuntimeError, raspy.common.runner.RunnerError

Raised when failure stopping.

raspy.common.runner.**emit_message**(*message*, *stream=None*)
Emit a message to the specified stream (default *sys.stderr*).

raspy.common.runner.**is_pidfile_stale**(*pidfile*)
Determine whether a PID file is stale.

Return `True` ("stale") if the contents of the PID file are valid but do not match the PID of a currently-running process; otherwise return `False`.

raspy.common.runner.**make_pidlockfile**(*path*, *acquire_timeout*)
Make a PIDLockFile instance with the given filesystem path.

### raspy.common.server module

**class** raspy.common.server.**Server**(*hostname='localhost'*, *service='worker'*, *broker_ip='127.0.0.1'*, *broker_port=5514*)
Bases: raspy.common.executive.Executive, raspy.common.statistics.Statistics

The generic worker

From http://zguide.zeromq.org/py:all#header-48

**worker_mmi**()
Retrieve mmi informations of the worker

### raspy.common.statistics module

**class** raspy.common.statistics.**SNMP**(*oid='module.snmp.key'*, *doc='A statistic integer value'*, *initial=0*)
Bases: object

Abstract statistic item

**set**(*value*)
Set a value to the snmp object

**class** raspy.common.statistics.**SNMPCounter**(*oid='module.snmp.key'*, *doc='A statistic counter value with overflow'*, *initial=0*, *overflow=4294967296*)
Bases: raspy.common.statistics.SNMP

Long (32bits) with overflow

**set**(*value=1*)
Add value (default=1) to current value. Also manage overflow.

**class** raspy.common.statistics.**SNMPFloat**(*oid='module.snmp.key'*, *doc='A statistic float value'*, *initial=0.0*)
Bases: raspy.common.statistics.SNMP

Float counter

**class** raspy.common.statistics.**SNMPString**(*oid='module.snmp.key'*, *doc='A statistic string value'*, *initial=''*)
Bases: raspy.common.statistics.SNMP

Float counter

**class** raspy.common.statistics.**Statistics**
Bases: object

The statistics manager

**add_statistic**()
Add a new statistic to the manager

**remove_statistic**(*oid*)
Remove a statistic from the manager

**update_statistic**(*oid=''*)
Add a new statistic to the manager

**worker_statistics**()
Send statistics via mmi

### raspy.common.supervisor module

**class** raspy.common.supervisor.**Supervisor**(*runner=None*)
The worker supervisor

Start executives in separate process see futures Each executive start multiples threads of workers

**todo :**

- bug : can't stop when jobs in queues

**get_instance_id**()
Return the instance of the worker : must be multihost and multithread.

**reload**()
Request the workers confguration against the configurator.

Will unregister all workers, stop all timers and ignore all further messages.

> **Warning:** The instance MUST not be used after shutdown() has been called.

**Return type** None

**run**()
Start the IOLoop instance

**shutdown**()
Shutdown supervisor.

Will unregister all workers, stop all timers and ignore all further messages.

> **Warning:** The instance MUST not be used after shutdown() has been called.

**Return type** None

**stop_executives**()
Shutdown executives.

### raspy.common.zhelpers module

Helper module for example applications. Mimics ZeroMQ Guide's zhelpers.h.

raspy.common.zhelpers.**dump**(*msg_or_socket*)
Receives all message parts from socket, printing each frame neatly

raspy.common.zhelpers.**set_id**(*zsocket*)
Set simple random printable identity on socket

raspy.common.zhelpers.**zpipe**(*ctx*)
build inproc pipe for talking to threads

mimic pipe used in czmq zthread_fork.

Returns a pair of PAIRs connected via inproc

#### Module contents

### 3.1.2 raspy.servers package

#### Submodules

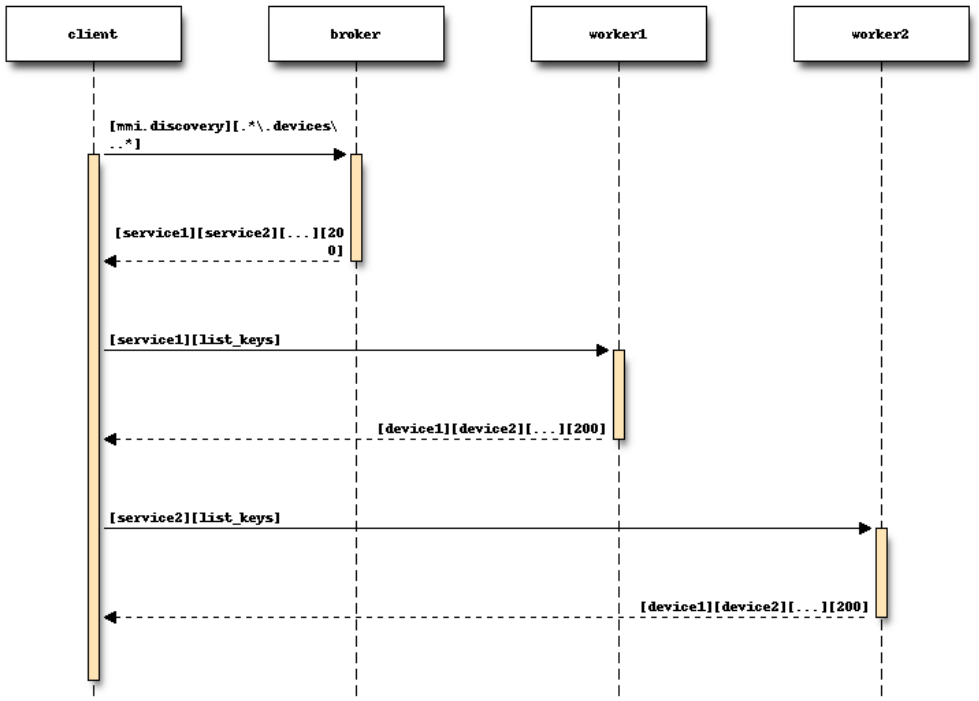
#### raspy.servers.broker module

**class** raspy.servers.broker.**Broker**(*hostname='localhost'*, *service='broker'*, *broker_ip='127.0.0.1'*, *broker_port=15514*)
Bases: raspy.common.executive.Executive

Majordomo Protocol broker and key/value proxy.

**Discovery process**

Here is the way for a client to discover all devices on network




You can do the same for crons and scenarios

**HEARTBEAT_EXPIRY = 7500**

**HEARTBEAT_INTERVAL = 2500**

**HEARTBEAT_LIVENESS = 3**

**INTERNAL_SERVICE_PREFIX = 'mmi.'**

**ctx = None**

**delete_worker**(*worker*, *disconnect*)
Deletes worker from all data structures, and deletes worker.

**destroy**()
Disconnect all workers, destroy context.

**dispatch**(*service*, *msg*)
Dispatch requests to waiting workers as possible

**heartbeat_at = None**

**poller = None**

**process_client**(*sender*, *msg*)
Process a request coming from a client.

**process_worker**(*sender*, *msg*)
Process message sent to us by a worker.

**purge_workers**()
Look for & kill expired workers.

Workers are oldest to most recent, so we stop at the first alive worker.

**require_service**(*name*)
Locates the service (creates if necessary).

**require_worker**(*address*)
Finds the worker (creates if necessary).

**run**()
Main broker work happens here

**send_heartbeats**()
Send heartbeats to idle workers if it's time

**send_to_worker**(*worker*, *command*, *option*, *msg=None*)
Send message to worker.

. If message is provided, sends that message.

**service_internal**(*service*, *msg*)
Handle internal service according to 8/MMI specification

**services = None**

**shutdown**()
Shutdown the broker.

**socket = None**

**waiting = None**

**worker_waiting**(*worker*)
This worker is now waiting for work.

**workers = None**

**class** raspy.servers.broker.**Proxy**(*hostname='localhost'*, *service='broker'*, *broker_ip='*'*, *broker_port=5514*, *speed=1.0*)

Bases: threading.Thread

The publisher

**Tree :**

- /event/

- /scenario/
- /device/

from : http://zguide.zeromq.org/page:all#Working-with-Subtrees

**run**()
Run the proxy

**send_single**(*key*, *kvmsg*, *route*)
Send one state snapshot key-value pair to a socket

**shutdown**()
Shutdown the proxy.

**class** raspy.servers.broker.**Route**(*socket*, *identity*, *subtree*)

**class** raspy.servers.broker.**Service**(*name*)
Bases: object

a single Service

**name** = None

**requests** = None

**waiting** = None

**class** raspy.servers.broker.**Worker**(*identity*, *address*, *lifetime*)
Bases: object

a Worker, idle or active

**address** = None

**expiry** = None

**identity** = None

**service** = None

### raspy.servers.core module

**class** raspy.servers.core.**Core**(*hostname='localhost'*, *service='core'*, *broker_ip='127.0.0.1'*, *broker_port=5514*)
Bases: raspy.common.server.Server

The Core server

**•Cron**

- Generate events in the publisher

**•Scenario**

- a scenario can run in background at startup (ie thermostat) or fired by an event (ie cron, sun is down, temperature is under 0°C)
- a scenario can be a loop so it must be launch in a separate thread : start filling, loop until water level is ok : need to call self._stopevent.isSet() in it so that the tread can shutdown.
- look for updates in entries list (cron, sensors, variables in the publisher) : a list mapped in friendly user's names (using store)
- it can publish some values with publisher
- do some work using inline code python :
- send commands to devices, cron jobs, start other scenario, update some variables in publisher
- we can export/import scenarios : share with friends

- **NTP / Sytem Time / RTC Sync**
  - sync from ntp to rtc
  - sync from trc to system : using sudo with no password

**worker_cron**()
Create a worker to handle cron requests

**worker_scenario**()
Create a worker to handle scenario's requests

**worker_scenarios**()
Create a worker to handle scenarios requests (list_keys, ...)

**class** raspy.servers.core.**Cron**
Bases: object

A cron job

**aps_job = None**

**class** raspy.servers.core.**CronManager**
Bases: object

The manager of cron job

**jobs = {}**

**class** raspy.servers.core.**Scenario**(*name='scenar1'*, *publisher=None*)
Bases: threading.Thread

A scenario

**code = None**
The code we must exec

**conf = {}**
The configuration of the scenario

**entries = {}**
The entries we must look at for an event driven scenario

**fire**()
Check if the scenario must be fired using entries and that is not already running. If so, call sself.run()

**Returns** True if the thread must be launch (self.run()), False otherwise

**Return type** boolean

**load**(*store*)
Load the scenario from titanic store

**Parameters** **store** – the store to get info from

**Type** titani_store

**Returns** True if the scenario was loaded from store

**Return type** boolean

**run**()
Run the scenario

**running = False**
Is the scenario running

**shutdown**()
Shutdown the scenario

**store**(*store*)
Store the scenario to titanic store

**class** raspy.servers.core.**ScenarioManager**(*publisher=None*)
Bases: object

The manager of scenarios

http://etutorials.org/Programming/Python+tutorial/Part+III+Python+Library+and+Extension+Modules/Chapter+13.+Control
http://lucumr.pocoo.org/2011/2/1/exec-in-python/ http://late.am/post/2012/04/30/the-exec-statement-and-a-python-mystery

**add**(*name='scenar1'*, *entries={}*, *code=None*, *conf={}*)
Add a scenario

**delete**(*name='scenar1'*)
Delete a scenario

**list**()
Return all scenarios with conf, entries, ... as json dict

**list_keys**()
Return all scenarios key (=name) ... as json list

**load**(*store*)
Load the scenarios from titanic store

**store keys :**

- scenario.main.conf : a json dict for configuration of scenario
- scenario.main.keys : a json list of the scenario's names
- scenario.key1.conf : a json dict for configuration of scenario key1
- scenario.key1.entries : a json dict of entries of scenario key1
- scenario.key1.code : a json string of code of scenario key1

**scenarios = {}**
The scenarios

**shutdown**()
Shutdown the scenario manager

**store**(*store*)
Store the scenarios to titanic store

**update**(*name='scenar1'*, *entries={}*, *code=None*, *conf={}*)
Update a scenario

### raspy.servers.fake module

**class** raspy.servers.fake.**Fake**(*hostname='localhost'*, *service='fake'*, *broker_ip='127.0.0.1'*, *broker_port=5514*)
Bases: raspy.common.server.Server

A fake server to test RasPy

•we must developp "real" fake device : ie a temperature sensors must not send random values

•a cyclic sensor : parameters : cycle length, min, max and unit. Will do cycle from min temp to max temp (at cycle/2) and fall back tp min temp at end of if

•a linear sensor

•

**worker_devices**()
Create a worker to handle devices requests

### raspy.servers.onewire module

**class** raspy.servers.onewire.**OneWire**(*hostname='localhost'*, *service='onewire'*, *broker_ip='127.0.0.1'*, *broker_port=5514*, *devices_dir='/sys/bus/w1/devices'*)

Bases: raspy.common.server.Server

The OneWire server

From https://www.modmypi.com/blog/ds18b20-one-wire-digital-temperature-sensor-and-the-raspberry-pi

**worker_devices**()
Create a worker to handle devices requests

### raspy.servers.titanic module

**class** raspy.servers.titanic.**Titanic**(*hostname='localhost'*, *service='titanic'*, *broker_ip='127.0.0.1'*, *broker_port=5514*, *data_dir='/tmp/raspy'*)

Bases: raspy.common.executive.Executive

The Titanic helper

Also integrates a store for keys/values

**From http://zguide.zeromq.org/py:all#Disconnected-Reliability-Titanic-Pattern**
http://zguide.zeromq.org/py:all#Service-Oriented-Reliable-Queuing-Majordomo-Pattern
https://github.com/imatix/zguide/tree/master/examples/Python

**reply_filename**(*uuid*)
Returns freshly allocated reply filename for given UUID

**request_filename**(*uuid*)
Returns freshly allocated request filename for given UUID

**run**()
Run the hub

**service_success**(*client*, *uuid*)
Attempt to process a single request, return True if successful

**store_filename**(*service*)
Returns store filename for given service

**titanic_close**()
Create a worker to handle titanic.close

titanic.close: confirm that a reply has been stored and processed.

**titanic_reply**()
Create a worker to handle titanic.service

titanic.reply: fetch a reply, if available, for a given request UUID.

**titanic_request**(*pipe*)
Create a worker to handle titanic.request

titanic.request: store a request message, and return a UUID for the request.

**titanic_store**()
Create a worker to handle store services

Module contents

## 3.2 Module contents

## r

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## V



## W



## Z