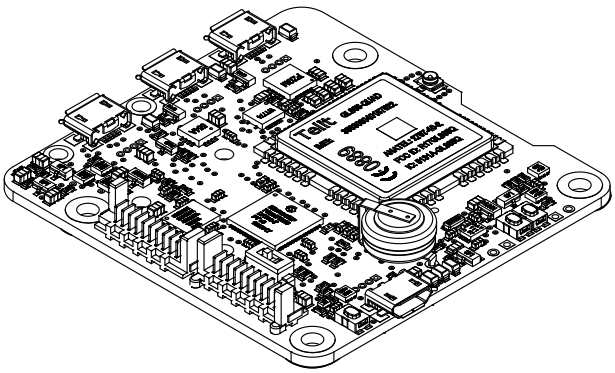
YoctoHub-GSM-2G

User's guide

Table of contents

1. Introduction

The YoctoHub-GSM-2G is a 60x58mm electronic module enabling you to drive other Yoctopuce modules through a cellular connection of the 2G GSM type (standard GPRS EDGE, also called 2.75G). The radio module supports the four most commonly used GSM frequency bands, that is the 900MHz and 1800MHz used in Europe, the Middle-East, Africa, Asia and the Pacific, and the 850MHz and 1900MHz bands used in North America, the Caribbeans, and Latin America.[1]



The YoctoHub-GSM-2G

The YoctoHub-GSM-2G is designed to be easily deployed and to not require any specific maintenance. In the opposite to a mini-computer, it does not have a complex operating system. Settings can be modified manually or automatically through USB. Therefore, the YoctoHub-GSM-2G is much more suited to industrialization than a mini-computer. However, you cannot run additional software written by the user on the YoctoHub-GSM-2G.

The YoctoHub-GSM-2G is not a standard USB hub with network access. Although it uses USB cables, its down ports use a proprietary protocol, much simpler than USB. It is therefore not possible to control, or even to power, standard USB devices with a YoctoHub-GSM-2G.

Yoctopuce thanks you for buying this YoctoHub-GSM-2G and sincerely hopes that you will be satisfied with it. The Yoctopuce engineers have put a large amount of effort to ensure that your YoctoHub-GSM-2G is easy to install anywhere and easy to use in any circumstance. If you are nevertheless disappointed with this device, do not hesitate to contact Yoctopuce support[2].

[1] For a detailed list of supported frequency bands by country, consult the Wikipedia page http://en.wikipedia.org/wiki/GSM_frequency_bands .
[2] support@yoctopuce.com

1.1. Optional accessories

The accessories below are not strictly necessary, but they might help you to get the better of your YoctoHub-GSM-2G.

Screws and spacers

In order to mount the Yocto-3D module, you can put small screws in the 3mm assembly holes, with a screw head no larger than 8mm. The best way is to use threaded spacers, which you can then mount wherever you want. You can find more details on this topic in the chapter about assembly and connections.

USB MicroB-MicroB cable

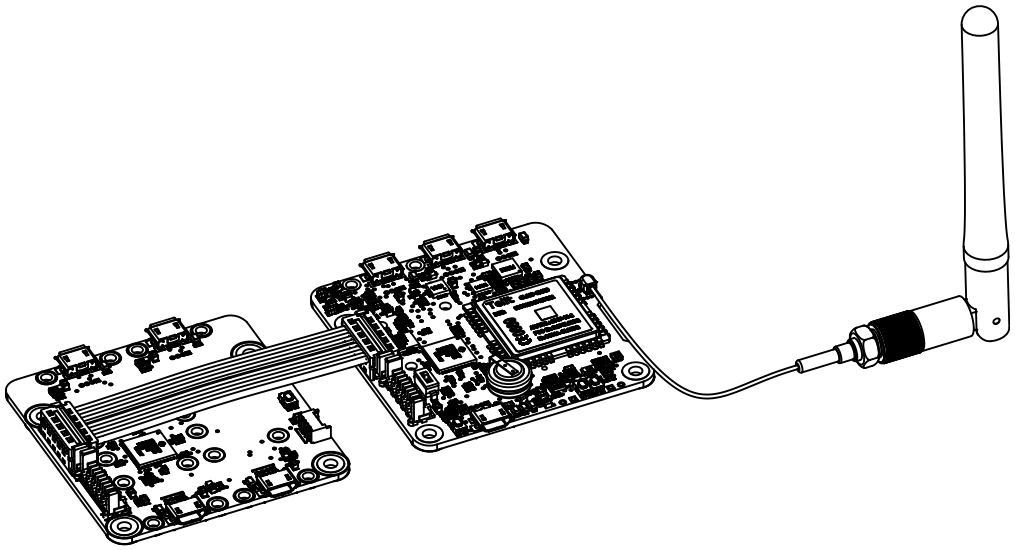
The YoctoHub-GSM-2G connectivity is mainly achieved through USB microB connectors. This means you will have to use USB cables with a microB connector on both ends. These cables are not very common, but you can order some from the Yoctopuce online shop[3].

1.27mm pitch connector

USB cable are very handy to quickly interconnect Yoctopuce devices. However, these use a lot of space. That's why there is, on the YoctoHub-GSM-2G PCB, a small footprint for 1.27 or 1.25mm pitch connectors near each USB connector. Soldering 1.27 pitch connector on these footprints allows to use a much more compact wiring. These 1.27mm connectors are quite standard and can be ordered from any electronic shop. Yoctopuce sells the *1.27-1.27-11* product, which is a set of connector with a 11cm long cable.

YoctoHub-Shield

The YoctoHub-GSM-2G features three down ports allowing to connect up to three sub-devices. However this capacity can be raised, thanks to the *YoctoHub-Shield*. Each shield add 4 new ports, and up to 10 shields can be daisy-chained to your YoctoHub-GSM-2G. See the YoctoHub-Shield documentation for more details.

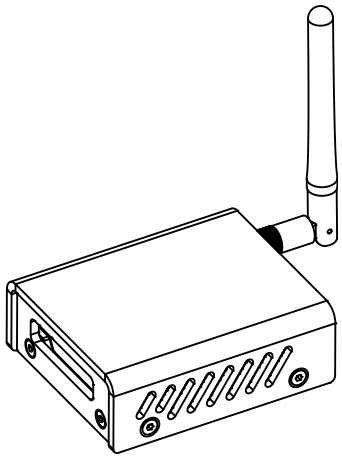


The YoctoHub-Shield adds more ports to your YoctoHub-GSM-2G.

Enclosures

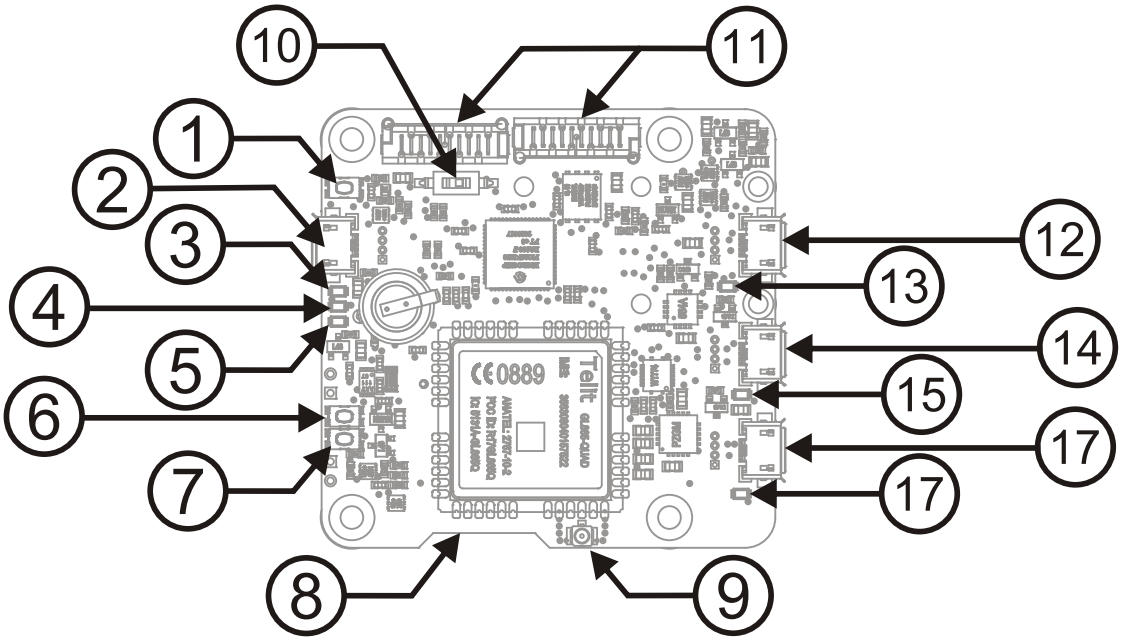
Your YoctoHub-GSM-2G has been designed to be installed as is in your project. Nevertheless, Yoctopuce sells enclosures specifically designed for Yoctopuce devices. More details are available on the Yoctopuce web site. The suggested enclosure model for your YoctoHub-GSM-2G is the YoctoBox-HubWlan-Transp.

[3] *USB-OTG-MicroB-MicroB-20* and *USB-OTG-MicroB-MicroB-100*



Your YoctoHub-GSM-2G can be installed in an enclosure.

2. Presentation



1: Yocto-button
2: Control + power USB port
3: Yocto-Led
4: Overload led
5: Network transfer led
6: Wake up button
7: Sleep button
8: SIM card holder (below)
9: Antenna connector
10: Sleep neutralization
11: Back connection
12: Down port 1
13: Down port 1 led
14: Down port 2
15: Down port 2 led
16: Down port 3
17: Down port 3led

2.1. The YoctoHub-GSM-2G components

Serial number

Each Yocto-module has a unique serial number assigned to it at the factory. For YoctoHub-GSM-2G modules, this number starts with YHUBGSM1. The module can be software driven using this serial number. The serial number cannot be modified.

Logical name

The logical name is similar to the serial number: it is a supposedly unique character string which allows you to reference your module by software. However, in the opposite of the serial number, the logical name can be modified at will. The advantage is to enable you to build several copies of the same project without needing to modify the driving software. You only need to program the same logical name in each copy. Warning: the behavior of a project becomes unpredictable when it contains several modules with the same logical name and when the driving software tries to access one of these modules through its logical name. When leaving the factory, modules do not have an assigned logical name. It is yours to define.

Yocto-button

The Yocto-button has two functionalities. First, it can activate the Yocto-beacon mode (see below under Yocto-led). Second, if you plug in a Yocto-module while keeping this button pressed, you can then reprogram its firmware with a new version. Note that there is a simpler UI-based method to update the firmware, but this one works even if the firmware on the module is incomplete or corrupted.

Yocto-led

Normally, the Yocto-led is used to indicate that the module is working smoothly. The Yocto-led then emits a low blue light which varies slowly, mimicking breathing. The Yocto-led stops breathing when the module is not communicating any more, as for instance when powered by a USB hub which is disconnected from any active computer.

When you press the Yocto-button, the Yocto-led switches to Yocto-beacon mode. It starts flashing faster with a stronger light, in order to facilitate the localization of a module when you have several identical ones. It is indeed possible to trigger off the Yocto-beacon by software, as it is possible to detect by software that a Yocto-beacon is on.

The Yocto-led has a third functionality, which is less pleasant: when the internal software which controls the module encounters a fatal error, the Yocto-led starts emitting an SOS in morse [1]. If this happens, unplug and re-plug the module. If it happens again, check that the module contains the latest version of the firmware and, if it is the case, contact Yoctopuce support[2].

Power / Control port

This port allows you to power the YoctoHub-GSM-2G and the modules connected to it with a simple USB charger. This port also allows you to control the YoctoHub-GSM-2G by USB, exactly like you can do it with a classic Yoctopuce module. It is particularly useful when you want to configure the YoctoHub-GSM-2G without knowing its IP address.

Down ports

You can connect up to three Yoctopuce modules on these ports. They will then be available as if they were connected to a computer running a *VirtualHub*. Note that the protocol used between the YoctoHub-GSM-2G and the USB modules is not USB but a lighter proprietary protocol. Therefore, the YoctoHub-GSM-2G cannot manage devices other than Yoctopuce devices. A standard USB hub does not work either[3]. If you want to connect more than three Yoctopuce modules, just connect one or more YoctoHub-Shield[4] to the back ports.

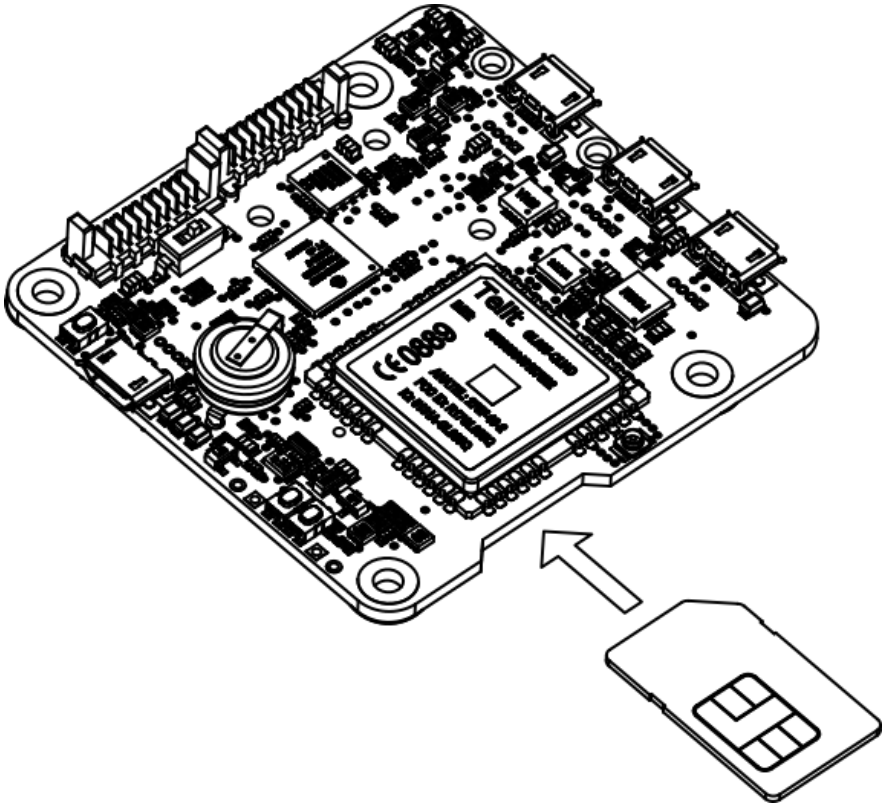
Warning: the USB connectors are simply soldered in surface and can be pulled out if the USB plug acts as a lever. In this case, if the tracks stayed in position, the connector can be soldered back with a good iron and flux to avoid bridges. Alternatively, you can solder a USB cable directly in the 1.27mm-spaced holes near the connector.

[1] short-short-short long-long-long short-short-short
[2] support@yoctopuce.com
[3] The Yoctopuce Micro-USB-Hub is a standard USB hub and does not work either.
[4] www.yoctopuce.com/FR/products/yoctohub-shield

The SIM card holder

To connect the YoctoHub-GSM-2G to a GSM cellular network, you must insert in your YoctoHub-GSM-2G a SIM card, combined with a subscription allowing data transfers. The SIM card holder is designed for the most standard mini-SIM format, also called known as 2FF. Adaptors enabling the use Micro-SIM or Nano-SIM cards, can be found in any mobile phone store. The SIM card holder is of the *push-push* type: push to insert the SIM until it is in position and makes a small click. To remove the SIM card, don't pull it but push it a second time to eject it from the holder.

You must insert the SIM card with the metal contacts against the printed circuit.

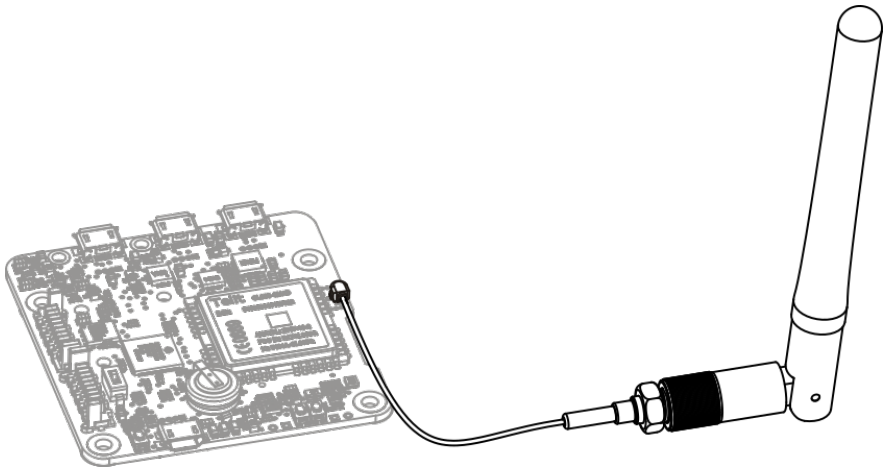


Direction of insertion of the SIM card in the YoctoHub-GSM-2G.

Antenna connector

The YoctoHub-GSM-2G includes an ultra miniature coaxial antenna connector (UFL). Take great care of the UFL connector. It is fragile and is not designed to support many connection/deconnection cycles. The YoctoHub-GSM-2G is sold with a small UFL cable to RP-SMA socket[5] and a corresponding RP-SMA plug antenna[6]. You can use another antenna of your choice, as long as it is designed for the frequency range used in your country for GSM and it has the correct connector. Beware also that using a high-gain antenna may drive you to emit a signal stronger than the authorized norm in your country.

[5] Reverse polarity SMA: threaded on the outside with a plug in the center
[6] Threaded on the inside, jack in the center



Antenna connection

Overload led

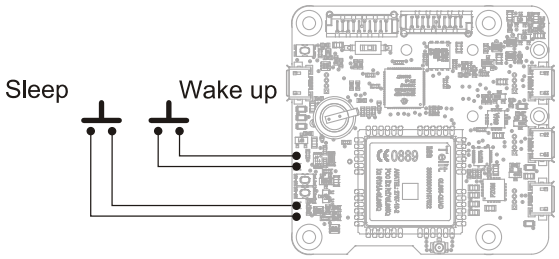
The YoctoHub-GSM-2G continuously monitors its power consumption. If it detects a global consumption of more that 2A, following an overload on one of the down ports for example, it automatically disables all the down ports and lights the overload led. To isolate the source of the issue, you can reactivate the ports one by one, monitoring the power consumption increase. Alternatively, if you know the source of the overload issue and know to have solved it, you can restart the YoctoHub-GSM-2G to enable all its ports at once.

Note that the overload led is a protection measure which can prevent overheating, but it is not a protection guarantee against shorts.

Sleep

On average, the YoctoHub-GSM-2G consumes about 0.5 Watt (100mA), to which you must add the connected modules consumption. But it is able to get into sleep to reduce its power consumption to a strict minimum, and to wake up at a precise time or when an outside contact is closed. This feature is very useful to build measuring installations working on a battery. When the YoctoHub-GSM-2G is in sleep mode, most of the electronics of the module as well as the connected Yoctopuce modules are switched off. This reduces the total consumption to 75 µW (15 µA).

Switching to sleep and waking up can be programmed based on a schedule, controlled by software, or controlled manually with two push buttons located on the YoctoHub-GSM-2G circuit. You can find there two pairs of contacts which enable you to shunt these two buttons.



Sleep and wake up button deviation.

The YoctoHub-GSM-2G includes a switch with which you can disable the sleep mode at the hardware level. This functionality is particularly useful when developing and debugging your project, as well as when updating the firmware.

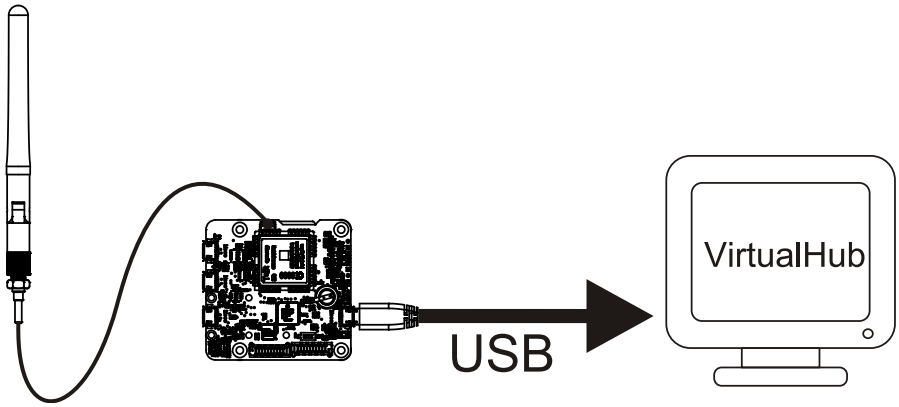
3. First steps

The aim of this chapter is to help you connect and configure your YoctoHub-GSM-2G for the first time.

3.1. Manual configuration

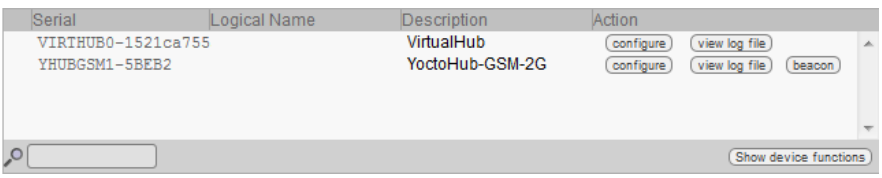
You can configure your YoctoHub-GSM-2G through its USB control port, by using the *VirtualHub*[1].

Run the *VirtualHub* on your preferred computer and connect it to the *power / control port* of the YoctoHub-GSM-2G. You need a USB A-MicroB cable.



Configuration: connecting your YoctoHub-GSM-2G by USB to a computer

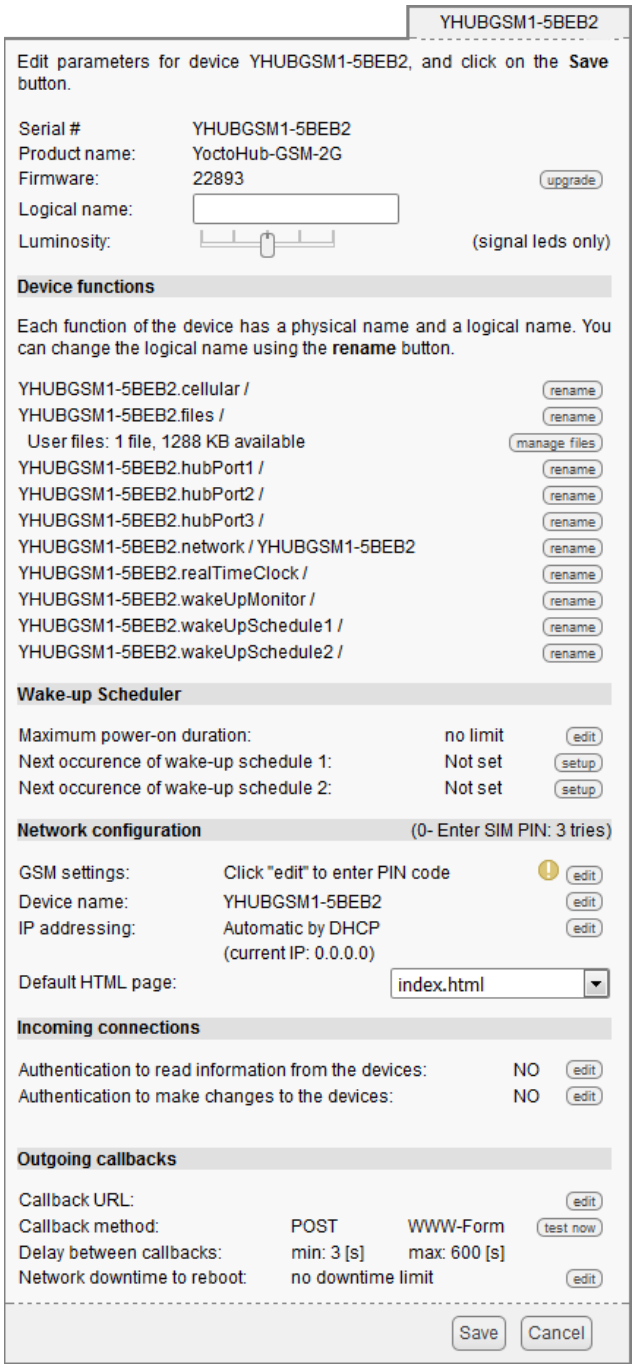
Launch your preferred browser on the URL of your *VirtualHub*. It usually is *http://127.0.0.1:4444*. You obtain the list of Yoctopuce modules connected by USB, among which your YoctoHub-GSM-2G.



List of Yoctopuce modules connected by USB to your computer, among which your YoctoHub-GSM-2G

Click on the **configure** button corresponding to your YoctoHub-GSM-2G. You obtain the module configuration window. This window contains a **Network configuration** section.

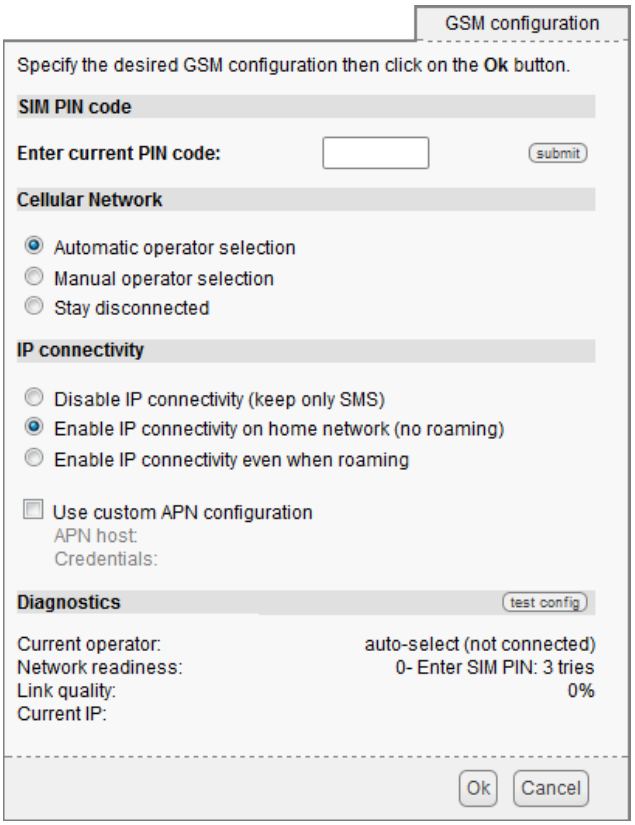
[1] http://www.yoctopuce.com/EN/virtualhub.php



YoctoHub-GSM-2G module configuration window

Connection to the GSM cellular network

The first thing you must do is to configure your YoctoHub-GSM-2G so that it connects itself to your GSM network. To do so, click on the **edit** button corresponding to **GSM configuration** in the **Network configuration** section and the GSM cellular network configuration window opens:



GSM cellular network configuration window

You can then enter the PIN code corresponding to the SIM card inserted in the YoctoHub-GSM-2G if need be, and select with which provider you want to work.

In most cases, the SIM card "knows" the provider it is designed for and you can simply keep the automatic selection. However, near country borders, the card may wish to use a more powerful but foreign signal, more expensive to use. To prevent this, you can select the provider of your local network manually.

You can also specify in your YoctoHub-GSM-2G the context in which you want to enable the IP connection data transfer. You can either completely disable it if you are only interested in SMS use[2], or activate it on the SIM card network only, or even allow data use on other networks (roaming). Take care if you activate this latest option, because it can quickly generate significant costs!

Depending on your SIM card and on your cellular service provider, you may have to configure an APN (*Access Point Name*), corresponding to the Internet gateway on your cellular network. It is an arbitrary name, assigned by your provider, to which you must sometimes add a user name and a password. It is impossible to list in this user's guide the APN name to be used with each provider. But if you do a search on the Internet with the name of your cellular service provider and the "APN" keyword, you will very easily find the APN name to use as well as the potential user name and password. The apnchanger.org web site contains this information for the main providers in many countries.

Warning: you have only three chances to enter the correct PIN code, if you fail to do so, you will have to resest the SIM card with its PUK code.

When you have entered the network parameters and potentially tested them, click on the **Ok** button to close this configuration window and come back to the main configuration window.

[2] Actually, SMS support is not available yet

Difference between a GSM network and a standard network

Important: The GSM cellular network to which your YoctoHub-GSM-2G is connected is not strictly equivalent to a standard Internet connection. Indeed, the IP address assigned to a cellular modem is almost always a *non routed* IP address. The YoctoHub-GSM-2G sees the whole Internet network, but Internet does not have a public address to contact it. This means that you cannot connect yourself remotely on your YoctoHub-GSM-2G from any computer, by simply typing its IP address in a web browser.

One of the solutions to solve this issue is to obtain from your cellular service provided a SIM card enabling a direct connection through a virtual private network.

Using a virtual private network

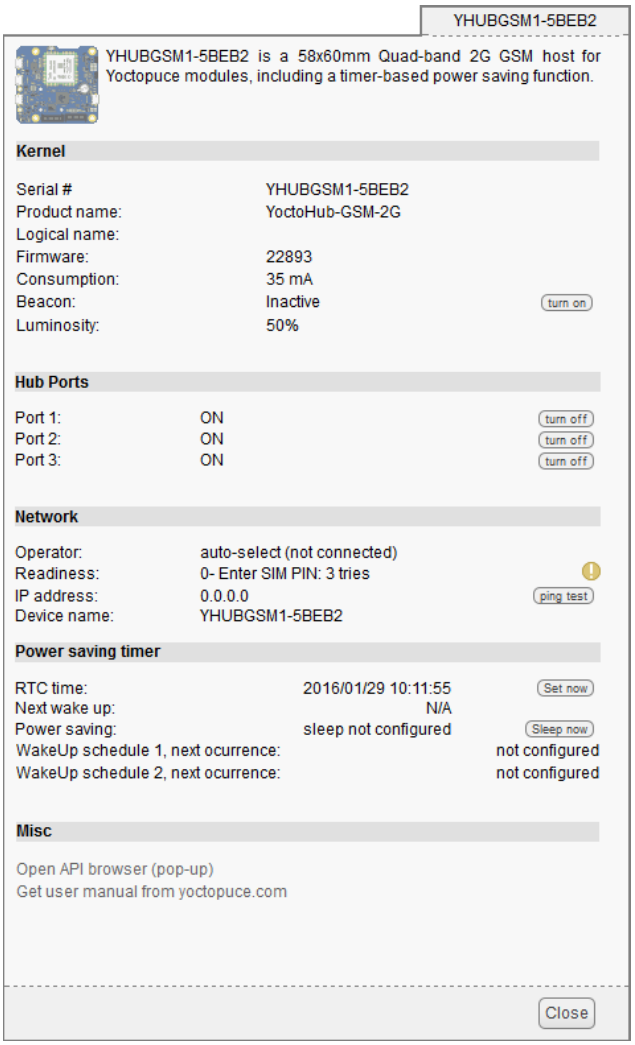
Some cellular service providers can conditionally provide a GSM connection with an internet link to a private address range, which is dedicated to you. This type of connection, dedicated to the *machine-to-machine* services, is generally restricted to businesses. It allows you to connect yourself remotely (through a virtual private network) to your YoctoHub-GSM-2G, which is otherwise impossible because each cellular phone is normally implicitly isolated behind a NAT filter.

If you do have such a connection, you can configure which IP address must be assigned to the YoctoHub-GSM-2G, and which IP address is authorized to contact it (*firewall* function). To do so, click on the **edit** opposite to the **IP addressing** line. It is essential to configure these parameters correctly to be able to contact your module through its IP address. Otherwise, the firewall blocks any incoming connection.

3.2. Device state window

It is possible to check the device general state, such as logical name, Network state, Hub ports states etc. Juste go back to the device list.

Click on the serial number corresponding to your YoctoHub-GSM-2G. This opens your module property window:



The YoctoHub-GSM-2G properties

This window contains a section indicating the state of the YoctoHub-GSM-2G network part. You can find there its MAC address, current IP address, and network name. This section also provides the state of the network connection. Possible states are:

- 0- The module does not find the GSM (2G) network. In this case, check that:
  - you have inserted a SIM card
  - you have configured the PIN code of the SIM card in the YoctoHub-GSM-2G
  - you have not disabled the radio mode (airplane mode)
  - you have indeed connected a GSM antenna
  - you are in a location where you can access a 2G network
- 1- network exists: a GSM cellular network was detected, but the module has not been accepted yet. If this state persists, check that your SIM is valid and corresponds to the selected cellular service provider.
- 2- network linked: the YoctoHub-GSM-2G did connect to the GSM network, but does not have an IP connection yet. If this state persists, check your APN settings.
- 3- LAN ready: the local network is operational (IP connection with the mobile service provider)
- 4- WWW ready: the module has checked connectivity with Internet by connecting itself to a time server (NTP).

If your YoctoHub-GSM-2G does indeed go into the *WWW Ready* state, it means that your internet cellular connection works correctly. You can then perform the next steps: Connect the wanted Yoctopuce modules (sensors and/or actuators) and configure the interactions with the outside.

3.3. Automated configuration

You can industrialize the YoctoHub-GSM-2G network configuration. You can find in the following chapters of this documentation the description of the programming functions enabling you to read the Ethernet address (MAC address) of a module, and to configure all of its network parameters.

The network configuration functions are also available as command lines, using the `YNetwork` utility software available in the command line programming library [3].

After having set some parameters by software, make sure to call the `saveToFlash()` function to ensure that the new settings are saved permanently in the module flash memory.

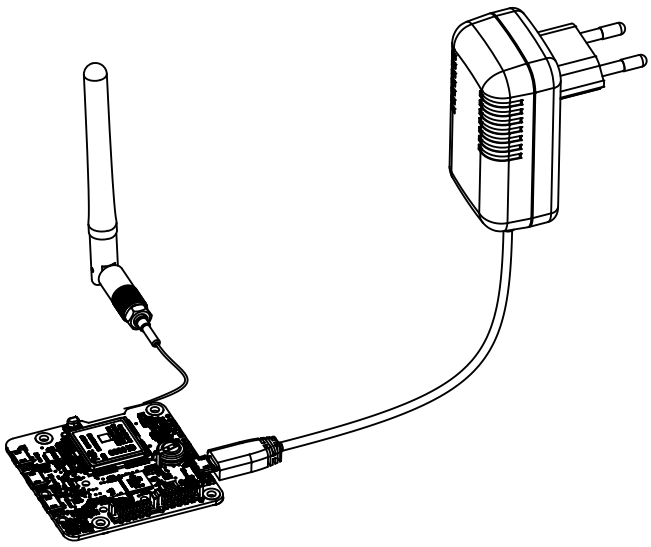
3.4. Connections

Power supply

The YoctoHub-GSM-2G must be powered by the USB control socket.

USB

Simply connect a USB charger in the *power / control port* port, but make sure that the charger provides enough electric power. The YoctoHub-GSM-2G consumes about 100mA, to which you must add the power consumption of each submodule. The YoctoHub-GSM-2G is designed to manage a maximum of 2A. Therefore, we recommend a USB charger able to deliver at least 2A. Moreover, you must make sure that the total power consumption of the set "hub + submodules" does not go above this limit.

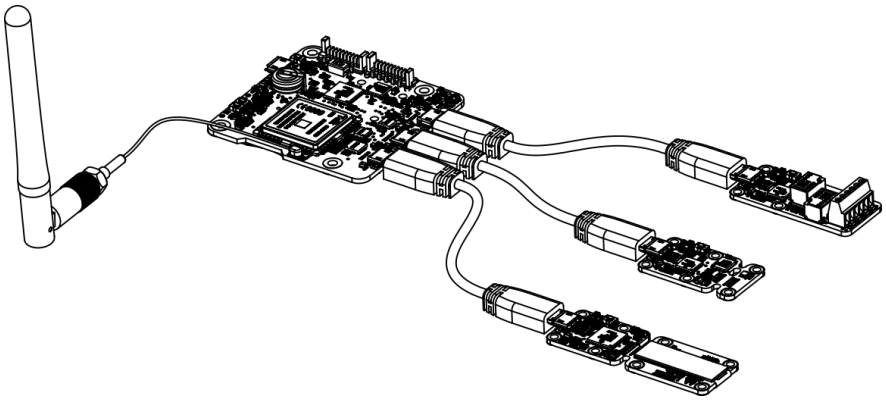


The YoctoHub-GSM-2G can be powered by a regular USB charger

Sub-modules

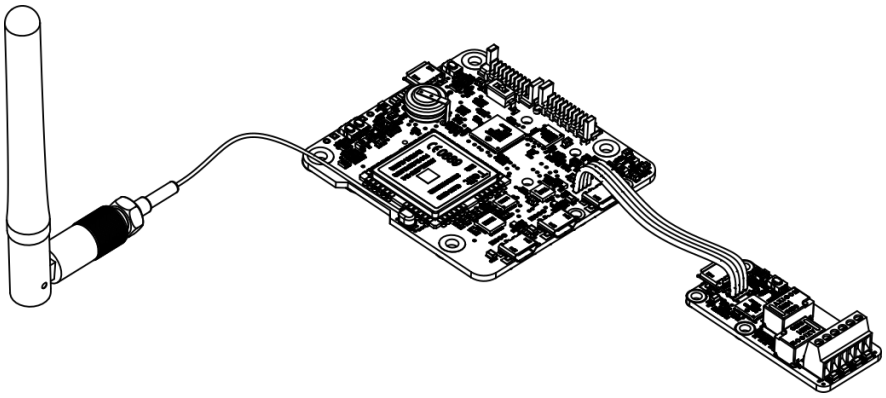
The YoctoHub-GSM-2G is able to drive all the Yoctopuce modules of the *Yocto* range. These modules can be directly connected to the down ports. They are automatically detected. For this, you need Micro-B Micro-B USB cables. Whether you use OTG cables or not does not matter.

[3] http://www.yoctopuce.com/EN/libraries.php



Connecting sub-modules with USB cables

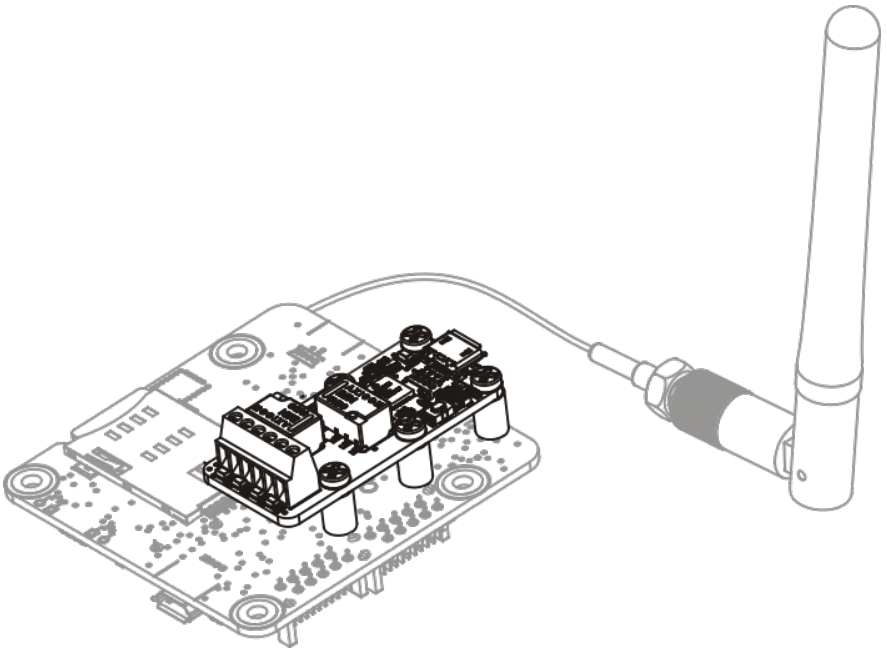
Alternatively, you can connect your modules by directly soldering electric cables between the YoctoHub-GSM-2G and its sub-modules. Indeed, all the Yoctopuce modules have contacts designed for direct cabling. We recommend you to use solid coper ribbon cables, with a 1.27mm pitch. Solid copper ribbon cable is less supple than threaded cable but easier to solder. Pay particular attention to polarity: the YoctoHub-GSM-2G, like all modules in the Yoctopuce range, is not protected against polarity inversion. Such an inversion would likely destroy your devices. Make sure the positions of the square contacts on both sides of the cable correspond.



Sub-module connection with ribbon cable

The YoctoHub-GSM-2G is designed so that you can fix a single width module directly on top of it. To do so, you need screws, spacers[4], and a 1.27mm pitch connector[5]. You can thus transform your USB Yoctopuce module into a network module while keeping a very compact format.

[4] http://www.yoctopuce.com/EN/products/accessories-and-connectors/fix-2-5mm
[5] http://www.yoctopuce.com/EN/products/accessories-and-connectors/board2board-127



Fixing a module directly on the hub

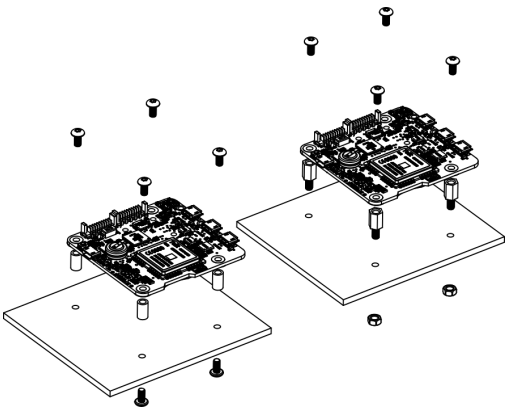
Beware, the YoctoHub-GSM-2G is designed to drive only Yoctopuce modules. Indeed, the protocol used between the YoctoHub-GSM-2G and the sub-modules is not USB but a much lighter proprietary protocol. If, by chance, you connect a device other than a Yoctopuce module on one of the YoctoHub-GSM-2G down ports, this port is automatically disabled to prevent damages to the device.

4. Assembly

This chapter provides important information regarding the use of the YoctoHub-GSM-2G module in real-world situations. Make sure to read it carefully before going too far into your project if you want to avoid pitfalls.

4.1. Fixing

While developing your project, you can simply let the hub hang at the end of its cable. Check only that it does not come in contact with any conducting material (such as your tools). When your project is almost at an end, you need to find a way for your modules to stop moving around.



Examples of assembly on supports

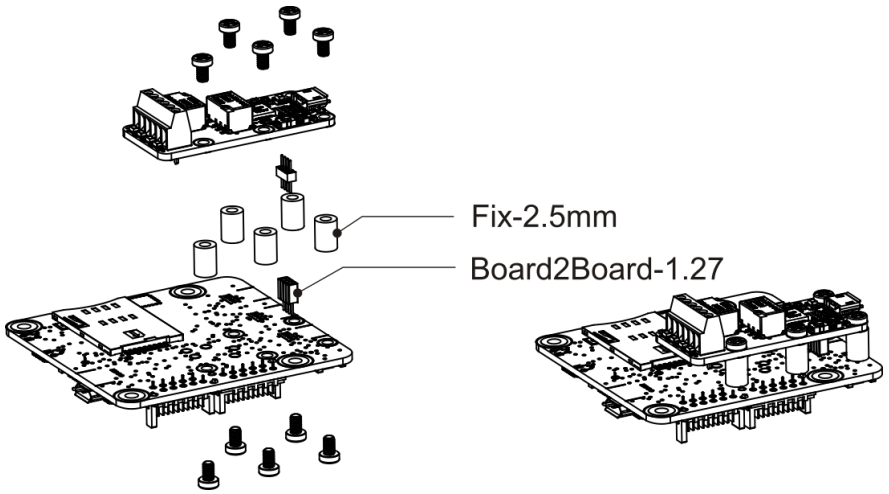
The YoctoHub-GSM-2G module contains 3mm assembly holes. You can use these holes for screws. The screw head diameter must not be larger than 8mm or the heads will damage the module circuits.

Make sure that the lower surface of the module is not in contact with the support. We recommend using spacers. You can fix the module in any position that suits you: however be aware that the YoctoHub-GSM-2G electronic components, in particular the network part, generate heat. You must not let this heat accumulate.

4.2. Fixing a sub-module

The YoctoHub-GSM-2G is designed so that you can screw a single width module directly on top of it. By single width, we mean modules with a 20mm width. All the single width modules have their 5 assembly holes and the USB socket in the same position. The sub-module can be assembled with screws and spacers. At the back of the YoctoHub-GSM-2G and sub-module USB connectors, there

are a set of 4 contacts enabling you to easily perform an electrical connection between the hub and the sub-module. If you do not feel sufficiently at ease with a soldering iron, you can also use a simple Micro-B Micro-B USB cable, OTG or not.



Fixing a module directly on the hub

Make sure to mount your module on the designed side, as illustrated above. The module 5 holes must correspond to the YoctoHub-GSM-2G 5 holes, and the square contact on the module must be connected to the square contact on the YoctoHub-GSM-2G down port. If you assemble a module on the other side or in another way, the connector polarity will be inverted and you risk to permanently damage your equipment.

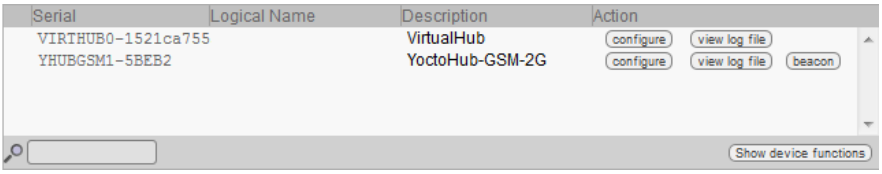
All the accessories necessary to fix a module on your YoctoHub-GSM-2G are relatively usual. You can find them on the Yoctopuce web site, as on most web sites selling electronic equipment. However, beware: the head of the screws used to assemble the sub-module must have a maximum head diameter of 4.5mm, otherwise they could damage the electronic components.

5. Interaction with external services

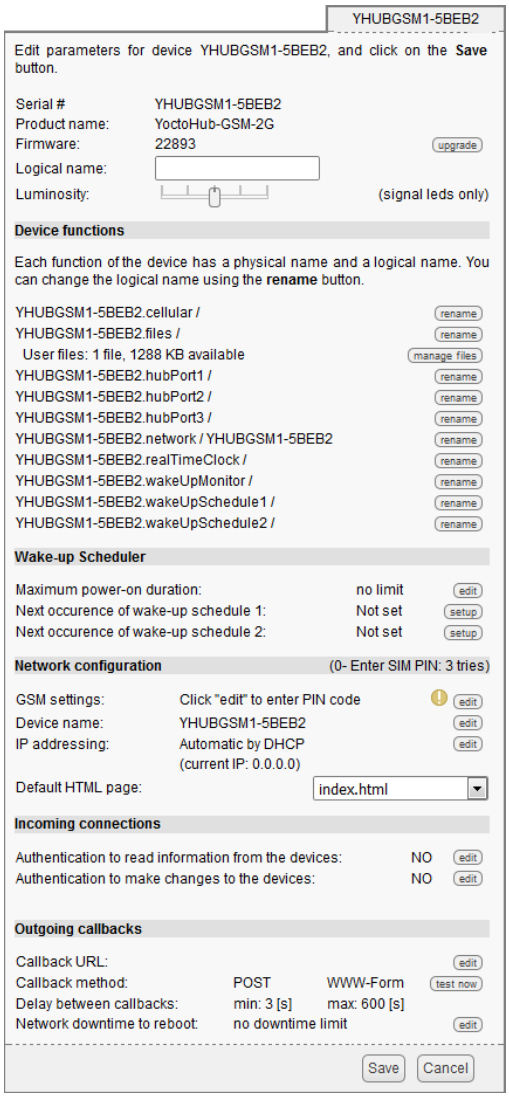
The YoctoHub-GSM-2G can publish the state of connected devices on any web server. The values are posted on a regular basis and each time one of them changes significantly. This feature, named HTTP Callback, enables you to interface your Yoctopuce devices with many web services.

5.1. Configuration

To use this feature, just click on the **configure** button located on the line matching the YoctoHub-GSM-2G on the main user interface. Then look for the **Outgoing calbacks** section and click on the **edit** button.



Just click on the "Configure" button on the first line.



Then edit the "Outgoing callbacks" section.

The callback configuration window shows up. This window enables you to define how your YoctoHub-GSM-2G interacts with an external web server. Several interaction types are at your disposal. For each type, a specific wizard will help you enter appropriate parameters

5.2. Emoncms

Emoncms.org is an open-source cloud service where you can register to upload your sensor data. It will let you view your measures in real-time over the Internet, and draw historical graphs, without writing a single line of code. You just have to enter in the configuration window your own API key, as provided by Emoncms, and allocate an arbitrary node number to YoctoHub-GSM-2G.

It is also possible to install Emoncms on your own server, to keep control on your data. You will find more explanations about this on Yoctopuce blog[1].

Yoctopuce is not affiliated with Emoncms.org.

5.3. Valarm.net

Valarm is a professional cloud service where you can register to upload your sensor data, with some advanced features like remote configuration of Yoctopuce devices and measure geolocation.

[1] http://www.yoctopuce.com/EN/article/using-emoncms-on-a-private-server

Valarm is a reseller for Yoctopuce products, but Yoctopuce is not otherwise affiliated with Valarm.

5.4. Xively (previously Cosm)

Xively is a commercial cloud service where you might be able to register to upload your sensor data. Note that since end of 2014, Xively is focusing on enterprise and OEM customers, and might therefore not be available to everyone. For more details, see xively.com.

Yoctopuce is not affiliated with Xively.

5.5. InfluxDB

InfluxDB is an open-source database for time series, metrics and events. It is very efficient to retrieve measure series for a given time range, even when averaging on-the-fly. You can easily install it on your own computer to record and graph your sensor data. There is a step-by-step guide on how to configure InfluxDB and Grafana to graph Yoctopuce sensors on the Yoctopuce blog [2].

Yoctopuce is not affiliated to InfluxData nor to Grafana.

5.6. PRTG

PRTG is a commercial system, device and application monitoring solution developped by PAESSLER. You can easily install it on windows to record and graph your sensor data. For more details, see www.paessler.com/prtg. Vous pouvez facilement l'installer sur Windows pour enregistrer les mesures et obtenir des graphiques de vos capteurs. Pour plus de dÃ©tails, voir fr.paessler.com/prtg. There is a step-by-step guide on how to configure PRTG to graph Yoctopuce sensors on the Yoctopuce blog [3].

Yoctopuce is not affiliated to PAESSLER.

5.7. MQTT

MQTT is an "Internet of Things" protocol to push sensor data to a central repository, named MQTT broker. For more details, see mqtt.org. You can also find several examples of use of MQTT on Yoctopuce blog.

5.8. Yocto-API callback

With some programming environments, the full Yoctopuce API can be used to drive devices in *HTTP callback* mode. This way, a web server script can take control of Yoctopuce devices installed behind a NAT filter without having to open any port. Typically, this allows you to control Yoctopuce devices running on a LAN behind a private DSL router from a public web site. The YoctoHub-GSM-2G then acts as a gateway. All you have to do is to define the HTTP server script URL and, if applicable, the credentials needed to access it. On the server script, you would initialize the library using the following call:

```
RegisterHub("http://callback");
```

There are two possibilities to use the Yoctopuce API in callback mode. The first one, available in PHP, Java and Node.JS is using pure HTTP callbacks. The YoctoHub-GSM-2G posts its complete state to the server, and receives commands in return from the server script. There are however some limitations with this mode: complex interactions, such as retrieving data from the datalogger, are not possible.

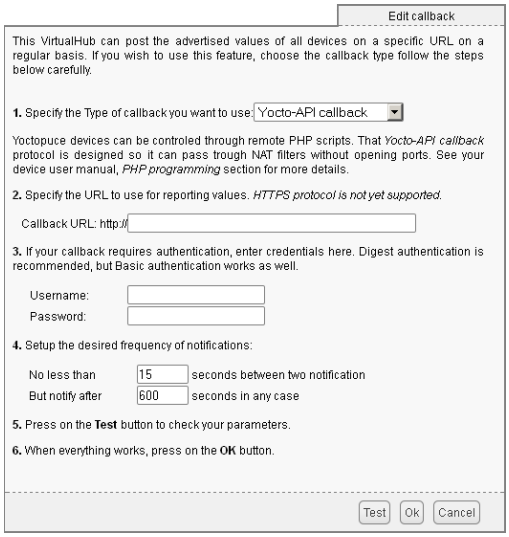
[2] http://www.yoctopuce.com/EN/article/using-yoctopuce-sensors-with-influxdb-and-grafana
[3] http://www.yoctopuce.com/EN/article/new-prtg-support-in-the-yoctohubs

The second mode API callback mode is using WebSocket callbacks. It is currently only available in Java and Node.JS. WebSockets are a standard extension of HTTP, providing a full bidirectional exchange channel over an HTTP connection. When a server script is connected by a YoctoHub-GSM-2G over a Websocket callback connection, the full Yoctopuce API can be used, without any limitation.

The **GatewayHub** webservice, available from Yoctopuce web site, uses this Websocket callback technology to provide remote access to the YoctoHub-GSM-2G, even in the presence of a NAT filter or firewall. For more information, see Yoctopuce blog[4].

5.9. User defined callback

The "*User defined callback*" allow you to fully customize the way the YoctoHub-GSM-2G interacts with an external web site. You need to provide the URL of the web server where you want the hub to post data. Note that only HTTP protocol is supported (no HTTPS).



The callback configuration window.

If you want to secure access to your callback script, you can setup a standard HTTP authentication. The YoctoHub-GSM-2G knows how to handle standard HTTP authentication schemes: simply fill in the user and and password fields needed to access the URL. Both Basic and Digest authentication are supported. However, Digest authentication is highly recommended, since it uses a challenge mechanism that avoids sending the password itself over the Internet, and prevents replays.

The YoctoHub-GSM-2G posts the advertised values[5] on a regular basis, and each time one of these values changes significantly. You can change the default delay between posts.

Tests

To help you debug the process, you can visualize with the YoctoHub-GSM-2G the answer to the callback sent by the web server. Click on the **test** button when all required fields are filled. When the result meets your expectations, close the debug window and then click on the "Ok" button.

Format

Values are posted in one of the following formats:

1. If the function has been assigned a logical name:

```
FUNCTION_NAME = VALUE
```

[4] http://www.yoctopuce.com/EN/article/a-gateway-to-remotely-access-yoctohubs
[5] Advertised values are the ones you can see on the YoctoHub-GSM-2G main interface when you click on the *show functions* button.

2. If the module has been assigned a logical name, but not the function:

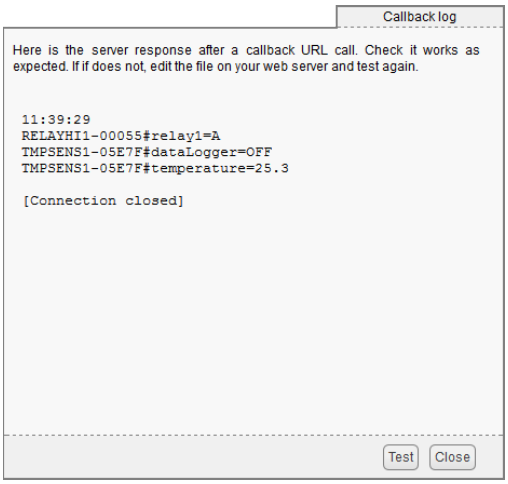
```
MODULE_NAME#HARDWARE_NAME = VALUE
```

3. If no logical name has been set:

```
SERIAL_NUMBER#HARDWARE_NAME = VALUE
```

Here is a short PHP script allowing you to visualize the data posted by the callback and the result in the debug window:

```
<?php
  Print(Date('H:i:s')."\r\n");
  foreach ($_POST as $key=>$value) {
      Print("$key=$value\r\n");
  }
?>
```



Callback test results with a Yocto-PowerRelay and a Yocto-Temperature.

6. Programming

6.1. Accessing connected modules

The YoctoHub-GSM-2G behaves itself exactly like a computer running a *VirtualHub*. The only difference between a program using the Yoctopuce API with modules in native USB and the same program with Yoctopuce modules connected to a YoctoHub-GSM-2G is located at the level of the *registerHub* function call. To use USB modules connected natively, the *registerHub* parameter is *usb*. To use modules connected to a YoctoHub-GSM-2G, you must simply replace this parameter by the IP address of the YoctoHub-GSM-2G. For instance, in Delphi:

```
YRegisterHub("usb",errmsg);
```

becomes

```
YRegisterHub("192.168.0.10",errmsg); // The hub IP address is 192.168.0.10
```

6.2. Controlling the YoctoHub-GSM-2G

From the programming API standpoint, the YoctoHub-GSM-2G is a module like the others. You can perfectly manage it from the Yoctopuce API. To do so, you need the following classes:

Module

This class, shared by all Yoctopuce modules, enables you to control the module itself. You can drive the Yocto-led, know the USB power consumption of the YoctoHub-GSM-2G, and so on.

Network

This class enables you to manage the network part of the YoctoHub-GSM-2G. You can control the link state, read the MAC address, change the YoctoHub-GSM-2G IP address, know the power consumption on PoE, and so on.

HubPort

This class enables you to manage the hub part. You can enable or disable the YoctoHub-GSM-2G ports, you can also know which module is connected to which port.

Files

This class enables you to access files stored in the flash memory of the YoctoHub-GSM-2G. The YoctoHub-GSM-2G contains a small file system which allows you to store, for example, a web application controlling the modules connected to the YoctoHub-GSM-2G.

WakeUpMonitor

This class enables you to monitor the sleep mode of the YoctoHub-GSM-2G.

WakeUpSchedule

This class enables you to schedule one or several wake ups for the YoctoHub-GSM-2G.

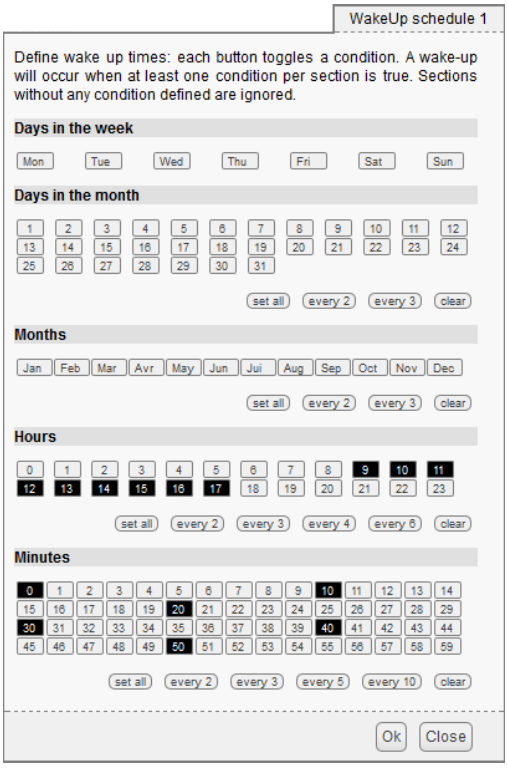
You can find some examples on how to drive the YoctoHub-GSM-2G by software in the Yoctopuce programming libraries, available free of charge on the Yoctopuce web site.

7. Sleep mode

The YoctoHub-GSM-2G includes a real time clock (RTC) powered by a super capacitor. This capacitor charges itself automatically when the module is powered. But it is able to keep time without any power for several days. This RTC is used to drive a sleep and wake up system to save power. You can configure the sleep system manually through an interface or drive it through software.

7.1. Manual configuration of the wake ups

You can manually configure the wake up conditions by connecting yourself on the interface of the YoctoHub-GSM-2G. In the **Wake-up scheduler** section of the main configuration window, click on the setup button corresponding to one of the "wakeup-schedule". This opens a window enabling you to schedule more or less regular wake ups. Select the boxes corresponding to the wanted occurrences. Empty sections are ignored.



Wake up configuration window: here every 10 minutes between 9h and 17h.

Likewise, you can configure directly in the YoctoHub-GSM-2G interface the maximal wake up duration, after which the module automatically goes back to sleep. If your YoctoHub-GSM-2G is running on batteries, this ensures they do not empty even if no explicit sleep command is received.

7.2. Configuring the wake up system by software

At the programming interface level, the wake up system is implemented with two types of functions: the *wakeUpMonitor* function and the *wakeUpSchedule* function.

wakeUpMonitor

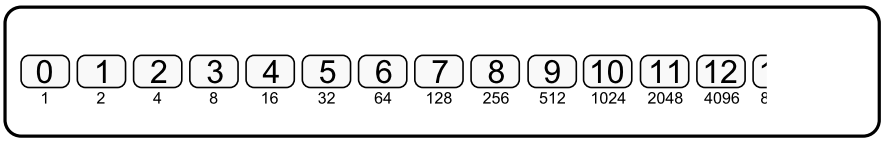
The *wakeUpMonitor* function manages wake ups and sleep periods, proper. It provides all the instant managing functionalities : instant wake up, instant sleep, computing the date of the next wake up, and so on...

The *wakeUpMonitor* function enables you also to define the maximum duration during which the YoctoHub-GSM-2G stays awake before automatically going back to sleep.

wakeUpSchedule

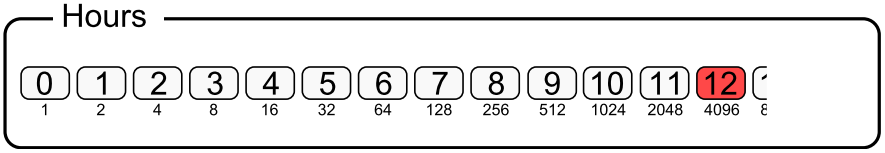
The *wakeUpSchedule* function enables you to program a wake up condition followed by a possible sleep. It includes five variables enabling you to define correspondences on minutes, hours, days of the week, days of the month, and months. These variables are integers where each bit defines a correspondence. Schematically, each set of minutes, hours, and days is represented as a set of boxes with each a coefficient which is a power of two, exactly like in the corresponding interface of the YoctoHub-GSM-2G.

For example, bit 0 for the hours corresponds to hour zero, bit 1 corresponds to hour 1, bit 2 to hour 2, and so on.



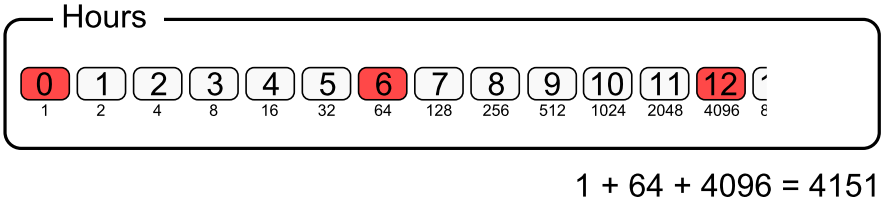
To each box is assigned a power of two

Thus, to program the YoctoHub-GSM-2G for it to wake up every day at noon, you must set bit 12 to 1, which corresponds to the value 2^12 = 4096.



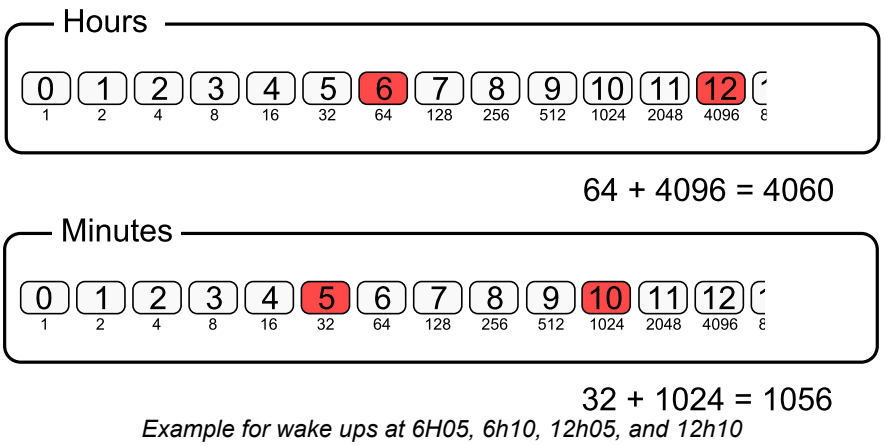
Example for a wake up at 12h

For the module to wake up at 0 hour, 6 hours, and 12 hours, you must set the 0, 6, and 12 bits to 1, which corresponds to the value 2^0 +2^6 +2^12 = 1 + 64 + 4096 = 4161



Example for wake ups at 0, 6, and 12h

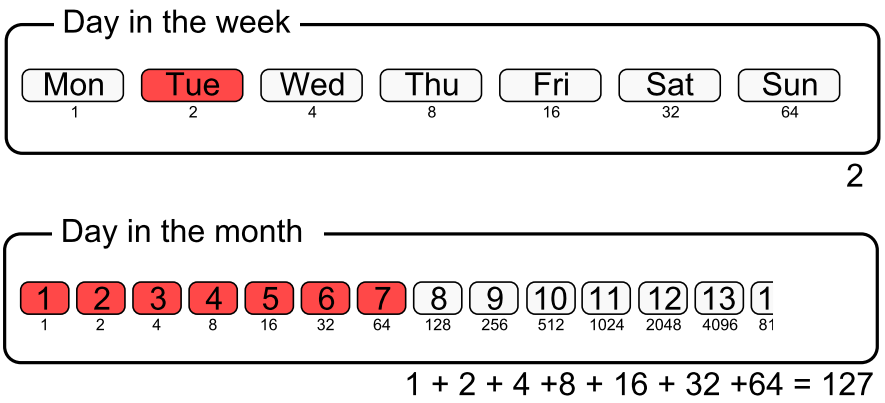
Variables can be combined. For a wake up to happen every day at 6h05, 6h10, 12h05, and 12h10, you must set the hours to 2^6 + 2^12 = 4060, minutes to 2^5 and 2^10 = 1056. Variables remaining at the zero value are ignored.



Example for wake ups at 6H05, 6h10, 12h05, and 12h10

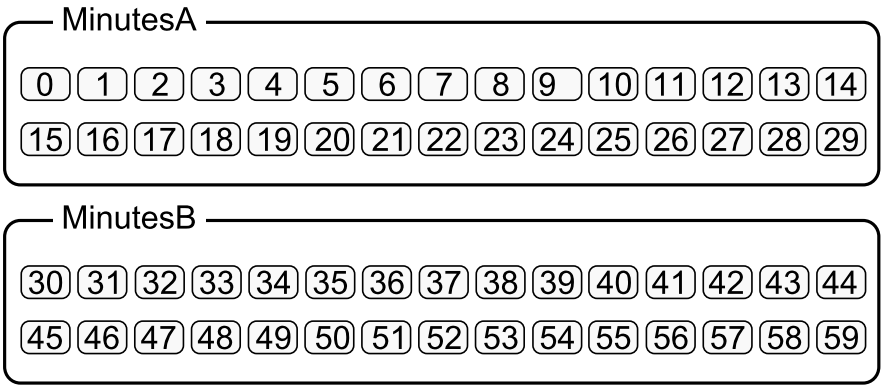
Note that if you want to program a wake up at 6h05 and 12h10, but not at 6h10 and 12h05, you need to use two distinct *wakeUpSchedule* functions.

This paradigm allows you to schedule complex wake ups. Thus, to program a wake up every first Tuesday of the month, you must set to 1 bit 1 of the days of the week and the first seven bits of the days of the month.



Example for a wake up every first Tuesday of the month

Some programming languages, among which JavaScript, do not support 64 bit integers. This is an issue for encoding minutes. Therefore, minutes are available both through a 64 bit integer *minutes* and two 32 bit integers *minutesA* and *minutesB*. These 32 bit integers are supposed to be available in any current programming language.



Minutes are also available in the shape of two 32 bit integers

The *wakeUpSchedule* function includes an additional variable to define the duration, in seconds, during which the module stays awake after a wake up. If this variable is set to zero, the modules stays awake.

The YoctoHub-GSM-2G includes two *wakeUpSchedule* functions, enabling you to program up to two independent wake up types.

8. High-level API Reference

This chapter summarizes the high-level API functions to drive your YoctoHub-GSM-2G. Syntax and exact type names may vary from one language to another, but, unless otherwise stated, all the functions are available in every language. For detailed information regarding the types of arguments and return values for a given language, refer to the definition file for this language (`yocto_api.*` as well as the other `yocto_*` files that define the function interfaces).

For languages which support exceptions, all of these functions throw exceptions in case of error by default, rather than returning the documented error value for each function. This is by design, to facilitate debugging. It is however possible to disable the use of exceptions using the `yDisableExceptions()` function, in case you prefer to work with functions that return error values.

This chapter does not explain Yoctopuce programming concepts, in order to stay as concise as possible. You will find more details in the documentation of the devices you plan to connect to your YoctoHub-GSM-2G.

8.1. Class YHubPort

YoctoHub slave port control interface, available for instance in the YoctoHub-Ethernet, the YoctoHub-GSM-4G, the YoctoHub-Shield or the YoctoHub-Wireless-n

The `YHubPort` class provides control over the power supply for slave ports on a YoctoHub. It provide information about the device connected to it. The logical name of a YHubPort is always automatically set to the unique serial number of the Yoctopuce device connected to it.

In order to use the functions described here, you should include:

es	in HTML: <script src="../../lib/yocto_hubport.js"></script> in node.js: require('yoctolib-es2017/yocto_hubport.js');
js	<script type='text/javascript' src='yocto_hubport.js'></script>
cpp	#include "yocto_hubport.h"
m	#import "yocto_hubport.h"
pas	uses yocto_hubport;
vb	yocto_hubport.vb
cs	yocto_hubport.cs
java	import com.yoctopuce.YoctoAPI.YHubPort;
uwp	import com.yoctopuce.YoctoAPI.YHubPort;
py	from yocto_hubport import *
php	require_once('yocto_hubport.php');
ts	in HTML: import { YHubPort } from '../../dist/esm/yocto_hubport.js'; in Node.js: import { YHubPort } from 'yoctolib-cjs/yocto_hubport.js';
dnp	import YoctoProxyAPI.YHubPortProxy
cp	#include "yocto_hubport_proxy.h"
vi	YHubPort.vi
ml	import YoctoProxyAPI.YHubPortProxy

Global functions

YHubPort.FindHubPort(**func**)

Retrieves a YoctoHub slave port for a given identifier.

YHubPort.FindHubPortInContext(**yctx**, **func**)

Retrieves a YoctoHub slave port for a given identifier in a YAPI context.

YHubPort.FirstHubPort()

Starts the enumeration of YoctoHub slave ports currently accessible.

YHubPort.FirstHubPortInContext(**yctx**)

Starts the enumeration of YoctoHub slave ports currently accessible.

YHubPort.GetSimilarFunctions()

Enumerates all functions of type HubPort available on the devices currently reachable by the library, and returns their unique hardware ID.

`YHubPort` properties

hubport→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

hubport→Enabled *[writable]*

True if the YoctoHub port is powered, false otherwise.

hubport→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

hubport→FunctionId *[read-only]*

Hardware identifier of the YoctoHub slave port, without reference to the module.

hubport→HardwareId *[read-only]*

Unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

hubport→IsOnline *[read-only]*

Checks if the function is currently reachable.

hubport→LogicalName *[writable]*

Logical name of the function.

hubport→PortState *[read-only]*

Current state of the YoctoHub port.

hubport→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

`YHubPort` methods

hubport→clearCache()

Invalidates the cache.

hubport→describe()

Returns a short text that describes unambiguously the instance of the YoctoHub slave port in the form `TYPE(NAME)=SERIAL.FUNCTIONID`.

hubport→get_advertisedValue()

Returns the current value of the YoctoHub slave port (no more than 6 characters).

hubport→get_baudRate()

Returns the current baud rate used by this YoctoHub port, in kbps.

hubport→get_enabled()

Returns true if the YoctoHub port is powered, false otherwise.

hubport→get_errorMessage()

Returns the error message of the latest error with the YoctoHub slave port.

hubport→get_errorType()

Returns the numerical error code of the latest error with the YoctoHub slave port.

hubport→get_friendlyName()

Returns a global identifier of the YoctoHub slave port in the format `MODULE_NAME.FUNCTION_NAME`.

hubport→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

hubport→get_functionId()

Returns the hardware identifier of the YoctoHub slave port, without reference to the module.

hubport→get_hardwareId()

Returns the unique hardware identifier of the YoctoHub slave port in the form `SERIAL.FUNCTIONID`.

hubport→get_logicalName()

Returns the logical name of the YoctoHub slave port.

hubport→get_module()

Gets the `YModule` object for the device on which the function is located.

hubport→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

hubport→get_portState()

Returns the current state of the YoctoHub port.

hubport→get_serialNumber()

Returns the serial number of the module, as set by the factory.

hubport→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

hubport→isOnline()

Checks if the YoctoHub slave port is currently reachable, without raising any error.

hubport→isOnline_async(**callback**, **context**)

Checks if the YoctoHub slave port is currently reachable, without raising any error (asynchronous version).

hubport→isReadOnly()

Test if the function is readOnly.

hubport→load(**msValidity**)

Preloads the YoctoHub slave port cache with a specified validity duration.

hubport→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

hubport→load_async(**msValidity**, **callback**, **context**)

Preloads the YoctoHub slave port cache with a specified validity duration (asynchronous version).

hubport→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

hubport→nextHubPort()

Continues the enumeration of YoctoHub slave ports started using `yFirstHubPort()`.

hubport→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

hubport→set_enabled(**newval**)

Changes the activation of the YoctoHub port.

hubport→set_logicalName(**newval**)

Changes the logical name of the YoctoHub slave port.

hubport→set_userData(**data**)

Stores a user context provided as argument in the userData attribute of the function.

hubport→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

hubport→wait_async(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YHubPort.FindHubPort() YHubPort
YHubPort.FindHubPort()

Retrieves a YoctoHub slave port for a given identifier.

```
js      function yFindHubPort( func)
cpp     YHubPort* FindHubPort( string func)
m       +(YHubPort*) FindHubPort : (NSString*) func
pas     TYHubPort yFindHubPort( func: string): TYHubPort
vb      function FindHubPort( ByVal func As String) As YHubPort
cs      static YHubPort FindHubPort( string func)
java    static YHubPort FindHubPort( String func)
uwp     static YHubPort FindHubPort( string func)
py      FindHubPort( func)
php     function FindHubPort( $func)
ts      static FindHubPort( func: string): YHubPort
es      static FindHubPort( func)
dnp     static YHubPortProxy FindHubPort( string func)
cp      static YHubPortProxy * FindHubPort( string func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the YoctoHub slave port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHubPort.isOnline()` to test if the YoctoHub slave port is indeed online at a given time. In case of ambiguity when looking for a YoctoHub slave port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the YoctoHub slave port, for instance `YHUBETH1.hubPort1`.

Returns :

a `YHubPort` object allowing you to drive the YoctoHub slave port.

YHubPort.FindHubPortInContext() YHubPort
YHubPort.FindHubPortInContext()

Retrieves a YoctoHub slave port for a given identifier in a YAPI context.

```
java  static YHubPort FindHubPortInContext( YAPIContext yctx, String func)
uwp   static YHubPort FindHubPortInContext( YAPIContext yctx, string func)
ts    static FindHubPortInContext( yctx: YAPIContext, func: string): YHubPort
es    static FindHubPortInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the YoctoHub slave port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHubPort.isOnline()` to test if the YoctoHub slave port is indeed online at a given time. In case of ambiguity when looking for a YoctoHub slave port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the YoctoHub slave port, for instance `YHUBETH1.hubPort1`.

Returns :

a `YHubPort` object allowing you to drive the YoctoHub slave port.

YHubPort.FirstHubPort() YHubPort
YHubPort.FirstHubPort()

Starts the enumeration of YoctoHub slave ports currently accessible.

js	function **yFirstHubPort**( )
cpp	YHubPort * **FirstHubPort**( )
m	+(YHubPort*) **FirstHubPort**
pas	TYHubPort **yFirstHubPort**( ): TYHubPort
vb	function **FirstHubPort**( ) As YHubPort
cs	static YHubPort **FirstHubPort**( )
java	static YHubPort **FirstHubPort**( )
uwp	static YHubPort **FirstHubPort**( )
py	**FirstHubPort**( )
php	function **FirstHubPort**( )
ts	static **FirstHubPort**( ): YHubPort | null
es	static **FirstHubPort**( )

Use the method `YHubPort.nextHubPort()` to iterate on next YoctoHub slave ports.

Returns :

a pointer to a `YHubPort` object, corresponding to the first YoctoHub slave port currently online, or a `null` pointer if there are none.

YHubPort.FirstHubPortInContext() YHubPort
YHubPort.FirstHubPortInContext()

Starts the enumeration of YoctoHub slave ports currently accessible.

java static YHubPort **FirstHubPortInContext**(YAPIContext **yctx**)
uwp static YHubPort **FirstHubPortInContext**(YAPIContext **yctx**)
ts static **FirstHubPortInContext**(**yctx**: YAPIContext): YHubPort | null
es static **FirstHubPortInContext**(**yctx**)

Use the method `YHubPort.nextHubPort()` to iterate on next YoctoHub slave ports.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YHubPort` object, corresponding to the first YoctoHub slave port currently online, or a `null` pointer if there are none.

YHubPort.GetSimilarFunctions() YHubPort
YHubPort.GetSimilarFunctions()

Enumerates all functions of type HubPort available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YHubPort.FindHubPort` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

hubport→AdvertisedValue — YHubPort

Short string representing the current state of the function.

dnp string **AdvertisedValue**

hubport→Enabled — YHubPort

True if the YoctoHub port is powered, false otherwise.

dnp int **Enabled**

Writable. Changes the activation of the YoctoHub port. If the port is enabled, the connected module is powered. Otherwise, port power is shut down.

hubport→FriendlyName — YHubPort

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

hubport→FunctionId — YHubPort

Hardware identifier of the YoctoHub slave port, without reference to the module.

dnp string **FunctionId**

For example `relay1`

hubport→HardwareId — YHubPort

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

hubport→IsOnline — YHubPort

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

hubport→LogicalName — YHubPort

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

hubport→PortState — YHubPort

Current state of the YoctoHub port.

dnp int **PortState**

hubport→SerialNumber — YHubPort

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

hubport→clearCache() YHubPort

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the YoctoHub slave port attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

hubport→describe() YHubPort

Returns a short text that describes unambiguously the instance of the YoctoHub slave port in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the YoctoHub slave port (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

hubport→get_advertisedValue()
hubport→advertisedValue()

YHubPort

Returns the current value of the YoctoHub slave port (no more than 6 characters).

```
js      function get_advertisedValue( )
cpp     string get_advertisedValue( )
m       -(NSString*) advertisedValue
pas     string get_advertisedValue( ): string
vb      function get_advertisedValue( ) As String
cs      string get_advertisedValue( )
java    String get_advertisedValue( )
uwp     async Task<string> get_advertisedValue( )
py      get_advertisedValue( )
php     function get_advertisedValue( )
ts      async get_advertisedValue( ): Promise<string>
es      async get_advertisedValue( )
dnp     string get_advertisedValue( )
cp      string get_advertisedValue( )
cmd     YHubPort target get_advertisedValue
```

Returns :

a string corresponding to the current value of the YoctoHub slave port (no more than 6 characters).

On failure, throws an exception or returns `YHubPort.ADVERTISEDVALUE_INVALID`.

hubport→get_baudRate() YHubPort
hubport→baudRate()

Returns the current baud rate used by this YoctoHub port, in kbps.

js	function **get_baudRate**( )
cpp	int **get_baudRate**( )
m	-(int) baudRate
pas	LongInt **get_baudRate**( ): LongInt
vb	function **get_baudRate**( ) As Integer
cs	int **get_baudRate**( )
java	int **get_baudRate**( )
uwp	async Task<int> **get_baudRate**( )
py	**get_baudRate**( )
php	function **get_baudRate**( )
ts	async **get_baudRate**( ): Promise<number>
es	async **get_baudRate**( )
dnp	int **get_baudRate**( )
cp	int **get_baudRate**( )
cmd	YHubPort **target get_baudRate**

The default value is 1000 kbps, but a slower rate may be used if communication problems are encountered.

Returns :
an integer corresponding to the current baud rate used by this YoctoHub port, in kbps

On failure, throws an exception or returns `YHubPort.BAUDRATE_INVALID`.

hubport→get_enabled()
hubport→enabled()

YHubPort

Returns true if the YoctoHub port is powered, false otherwise.

```
js      function get_enabled( )
cpp     Y_ENABLED_enum get_enabled( )
m       -(Y_ENABLED_enum) enabled
pas     Integer get_enabled( ): Integer
vb      function get_enabled( ) As Integer
cs      int get_enabled( )
java    int get_enabled( )
uwp     async Task<int> get_enabled( )
py      get_enabled( )
php     function get_enabled( )
ts      async get_enabled( ): Promise<YHubPort_Enabled>
es      async get_enabled( )
dnp     int get_enabled( )
cp      int get_enabled( )
cmd     YHubPort target get_enabled
```

Returns :

either `YHubPort.ENABLED_FALSE` or `YHubPort.ENABLED_TRUE`, according to true if the YoctoHub port is powered, false otherwise

On failure, throws an exception or returns `YHubPort.ENABLED_INVALID`.

hubport→get_errorMessage() YHubPort
hubport→errorMessage()

Returns the error message of the latest error with the YoctoHub slave port.

js	function **get_errorMessage**( )
cpp	string **get_errorMessage**( )
m	-(NSString*) errorMessage
pas	string **get_errorMessage**( ): string
vb	function **get_errorMessage**( ) As String
cs	string **get_errorMessage**( )
java	String **get_errorMessage**( )
py	**get_errorMessage**( )
php	function **get_errorMessage**( )
ts	**get_errorMessage**( ): string
es	**get_errorMessage**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the YoctoHub slave port object

hubport→get_errorType() YHubPort
hubport→errorType()

Returns the numerical error code of the latest error with the YoctoHub slave port.

```
js      function get_errorType( )
cpp     YRETCODE get_errorType( )
m       -(YRETCODE) errorType
pas     YRETCODE get_errorType( ): YRETCODE
vb      function get_errorType( ) As YRETCODE
cs      YRETCODE get_errorType( )
java    int get_errorType( )
py      get_errorType( )
php     function get_errorType( )
ts      get_errorType( ): number
es      get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the YoctoHub slave port object

hubport→get_friendlyName() YHubPort
hubport→friendlyName()

Returns a global identifier of the YoctoHub slave port in the format MODULE_NAME.FUNCTION_NAME.

```
js      function get_friendlyName( )
cpp     string get_friendlyName( )
m       -(NSString*) friendlyName
cs      string get_friendlyName( )
java    String get_friendlyName( )
py      get_friendlyName( )
php     function get_friendlyName( )
ts      async get_friendlyName( ): Promise<string>
es      async get_friendlyName( )
dnp     string get_friendlyName( )
cp      string get_friendlyName( )
```

The returned string uses the logical names of the module and of the YoctoHub slave port if they are defined, otherwise the serial number of the module and the hardware identifier of the YoctoHub slave port (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the YoctoHub slave port using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `YHubPort.FRIENDLYNAME_INVALID`.

hubport→get_functionDescriptor() YHubPort
hubport→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

hubport→get_functionId()
hubport→functionId()

YHubPort

Returns the hardware identifier of the YoctoHub slave port, without reference to the module.

js	function **get_functionId**( )
cpp	string **get_functionId**( )
m	-(NSString*) functionId
vb	function **get_functionId**( ) As String
cs	string **get_functionId**( )
java	String **get_functionId**( )
py	**get_functionId**( )
php	function **get_functionId**( )
ts	async **get_functionId**( ): Promise<string>
es	async **get_functionId**( )
dnp	string **get_functionId**( )
cp	string **get_functionId**( )

For example `relay1`

Returns :
a string that identifies the YoctoHub slave port (ex: `relay1`)

On failure, throws an exception or returns `YHubPort.FUNCTIONID_INVALID`.

hubport→get_hardwareId()
hubport→hardwareId()

YHubPort

Returns the unique hardware identifier of the YoctoHub slave port in the form SERIAL.FUNCTIONID.

```
js      function get_hardwareId( )
cpp     string get_hardwareId( )
m       -(NSString*) hardwareId
vb      function get_hardwareId( ) As String
cs      string get_hardwareId( )
java    String get_hardwareId( )
py      get_hardwareId( )
php     function get_hardwareId( )
ts      async get_hardwareId( ): Promise<string>
es      async get_hardwareId( )
dnp     string get_hardwareId( )
cp      string get_hardwareId( )
```

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the YoctoHub slave port (for example RELAYLO1-123456.relay1).

Returns :

a string that uniquely identifies the YoctoHub slave port (ex: RELAYLO1-123456.relay1)

On failure, throws an exception or returns YHubPort.HARDWAREID_INVALID.

hubport→get_logicalName() YHubPort
hubport→logicalName()

Returns the logical name of the YoctoHub slave port.

js	function **get_logicalName**( )
cpp	string **get_logicalName**( )
m	-(NSString*) logicalName
pas	string **get_logicalName**( ): string
vb	function **get_logicalName**( ) As String
cs	string **get_logicalName**( )
java	String **get_logicalName**( )
uwp	async Task<string> **get_logicalName**( )
py	**get_logicalName**( )
php	function **get_logicalName**( )
ts	async **get_logicalName**( ): Promise<string>
es	async **get_logicalName**( )
dnp	string **get_logicalName**( )
cp	string **get_logicalName**( )
cmd	YHubPort **target get_logicalName**

Returns :
a string corresponding to the logical name of the YoctoHub slave port.

On failure, throws an exception or returns `YHubPort.LOGICALNAME_INVALID`.

hubport→get_module()
hubport→module()

YHubPort

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

hubport→get_module_async() YHubPort
hubport→module_async()

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→get_portState()
hubport→portState()

YHubPort

Returns the current state of the YoctoHub port.

```
js      function get_portState( )
cpp     Y_PORTSTATE_enum get_portState( )
m       -(Y_PORTSTATE_enum) portState
pas     Integer get_portState( ): Integer
vb      function get_portState( ) As Integer
cs      int get_portState( )
java    int get_portState( )
uwp     async Task<int> get_portState( )
py      get_portState( )
php     function get_portState( )
ts      async get_portState( ): Promise<YHubPort_PortState>
es      async get_portState( )
dnp     int get_portState( )
cp      int get_portState( )
cmd     YHubPort target get_portState
```

Returns :

a value among `YHubPort.PORTSTATE_OFF`, `YHubPort.PORTSTATE_OVRLD`, `YHubPort.PORTSTATE_ON`, `YHubPort.PORTSTATE_RUN` and `YHubPort.PORTSTATE_PROG` corresponding to the current state of the YoctoHub port

On failure, throws an exception or returns `YHubPort.PORTSTATE_INVALID`.

hubport→get_serialNumber() YHubPort
hubport→serialNumber()

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YHubPort target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

hubport→get_userData()
hubport→userData()

YHubPort

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

hubport→isOnline() YHubPort

Checks if the YoctoHub slave port is currently reachable, without raising any error.

```
js      function isOnline( )
cpp     bool isOnline( )
m       -(BOOL) isOnline
pas     boolean isOnline( ): boolean
vb      function isOnline( ) As Boolean
cs      bool isOnline( )
java    boolean isOnline( )
py      isOnline( )
php     function isOnline( )
ts      async isOnline( ): Promise<boolean>
es      async isOnline( )
dnp     bool isOnline( )
cp      bool isOnline( )
```

If there is a cached value for the YoctoHub slave port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the YoctoHub slave port.

Returns :

`true` if the YoctoHub slave port can be reached, and `false` otherwise

hubport→isOnline_async() YHubPort

Checks if the YoctoHub slave port is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the YoctoHub slave port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→isReadOnly() YHubPort

Test if the function is readOnly.

```
cpp     bool isReadOnly( )
m       -(bool) isReadOnly
pas     boolean isReadOnly( ): boolean
vb      function isReadOnly( ) As Boolean
cs      bool isReadOnly( )
java    boolean isReadOnly( )
uwp     async Task<bool> isReadOnly( )
py      isReadOnly( )
php     function isReadOnly( )
ts      async isReadOnly( ): Promise<boolean>
es      async isReadOnly( )
dnp     bool isReadOnly( )
cp      bool isReadOnly( )
cmd     YHubPort target isReadOnly
```

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

hubport→load() YHubPort

Preloads the YoctoHub slave port cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→loadAttribute() YHubPort

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

hubport→load_async() YHubPort

Preloads the YoctoHub slave port cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or `YAPI.SUCCESS`)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→muteValueCallbacks() YHubPort

Disables the propagation of every new advertised value to the parent hub.

js	function **muteValueCallbacks**( )
cpp	int **muteValueCallbacks**( )
m	-(int) **muteValueCallbacks**
pas	LongInt **muteValueCallbacks**( ): LongInt
vb	function **muteValueCallbacks**( ) As Integer
cs	int **muteValueCallbacks**( )
java	int **muteValueCallbacks**( )
uwp	async Task<int> **muteValueCallbacks**( )
py	**muteValueCallbacks**( )
php	function **muteValueCallbacks**( )
ts	async **muteValueCallbacks**( ): Promise<number>
es	async **muteValueCallbacks**( )
dnp	int **muteValueCallbacks**( )
cp	int **muteValueCallbacks**( )
cmd	YHubPort **target muteValueCallbacks**

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→nextHubPort() YHubPort

Continues the enumeration of YoctoHub slave ports started using `yFirstHubPort()`.

```
js      function nextHubPort( )
cpp     YHubPort * nextHubPort( )
m       -(nullable YHubPort*) nextHubPort
pas     TYHubPort nextHubPort( ): TYHubPort
vb      function nextHubPort( ) As YHubPort
cs      YHubPort nextHubPort( )
java    YHubPort nextHubPort( )
uwp     YHubPort nextHubPort( )
py      nextHubPort( )
php     function nextHubPort( )
ts      nextHubPort( ): YHubPort | null
es      nextHubPort( )
```

Caution: You can't make any assumption about the returned YoctoHub slave ports order. If you want to find a specific a YoctoHub slave port, use `HubPort.findHubPort()` and a hardwareID or a logical name.

Returns :

a pointer to a `YHubPort` object, corresponding to a YoctoHub slave port currently online, or a `null` pointer if there are no more YoctoHub slave ports to enumerate.

hubport→registerValueCallback() YHubPort

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YHubPortValueCallback **callback**)
m	-(int) **registerValueCallback** : (YHubPortValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYHubPortValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YHubPortValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YHubPortValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

hubport→set_enabled()
hubport→setEnabled()

YHubPort

Changes the activation of the YoctoHub port.

```
js      function set_enabled( newval)
cpp     int set_enabled( Y_ENABLED_enum newval)
m       -(int) setEnabled : (Y_ENABLED_enum) newval
pas     integer set_enabled( newval: Integer): integer
vb      function set_enabled( ByVal newval As Integer) As Integer
cs      int set_enabled( int newval)
java    int set_enabled( int newval)
uwp     async Task<int> set_enabled( int newval)
py      set_enabled( newval)
php     function set_enabled( $newval)
ts      async set_enabled( newval: YHubPort_Enabled): Promise<number>
es      async set_enabled( newval)
dnp     int set_enabled( int newval)
cp      int set_enabled( int newval)
cmd     YHubPort target set_enabled newval
```

If the port is enabled, the connected module is powered. Otherwise, port power is shut down.

Parameters :

newval either `YHubPort.ENABLED_FALSE` or `YHubPort.ENABLED_TRUE`, according to the activation of the YoctoHub port

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→set_logicalName() YHubPort
hubport→setLogicalName()

Changes the logical name of the YoctoHub slave port.

js	function **set_logicalName**(**newval**)
cpp	int **set_logicalName**(string **newval**)
m	-(int) setLogicalName : (NSString*) **newval**
pas	integer **set_logicalName**(**newval**: string): integer
vb	function **set_logicalName**(ByVal **newval** As String) As Integer
cs	int **set_logicalName**(string **newval**)
java	int **set_logicalName**(String **newval**)
uwp	async Task<int> **set_logicalName**(string **newval**)
py	**set_logicalName**(**newval**)
php	function **set_logicalName**(**$newval**)
ts	async **set_logicalName**(**newval**: string): Promise<number>
es	async **set_logicalName**(**newval**)
dnp	int **set_logicalName**(string **newval**)
cp	int **set_logicalName**(string **newval**)
cmd	YHubPort **target set_logicalName newval**

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the YoctoHub slave port.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→set_userData()
hubport→setUserData()

YHubPort

Stores a user context provided as argument in the userData attribute of the function.

```
js      function set_userData( data)
cpp     void set_userData( void * data)
m       -(void) setUserData : (id) data
pas     set_userData( data: Tobject)
vb      procedure set_userData( ByVal data As Object)
cs      void set_userData( object data)
java    void set_userData( Object data)
py      set_userData( data)
php     function set_userData( $data)
ts      async set_userData( data: object|null): Promise<void>
es      async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

hubport→unmuteValueCallbacks() YHubPort

Re-enables the propagation of every new advertised value to the parent hub.

js	function **unmuteValueCallbacks**( )
cpp	int **unmuteValueCallbacks**( )
m	-(int) **unmuteValueCallbacks**
pas	LongInt **unmuteValueCallbacks**( ): LongInt
vb	function **unmuteValueCallbacks**( ) As Integer
cs	int **unmuteValueCallbacks**( )
java	int **unmuteValueCallbacks**( )
uwp	async Task<int> **unmuteValueCallbacks**( )
py	**unmuteValueCallbacks**( )
php	function **unmuteValueCallbacks**( )
ts	async **unmuteValueCallbacks**( ): Promise<number>
es	async **unmuteValueCallbacks**( )
dnp	int **unmuteValueCallbacks**( )
cp	int **unmuteValueCallbacks**( )
cmd	YHubPort **target unmuteValueCallbacks**

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→wait_async() YHubPort

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

8.2. Class YCellular

Cellular interface control interface, available for instance in the YoctoHub-GSM-2G, the YoctoHub-GSM-3G-EU, the YoctoHub-GSM-3G-NA or the YoctoHub-GSM-4G

The `YCellular` class provides control over cellular network parameters and status for devices that are GSM-enabled. Note that TCP/IP parameters are configured separately, using class `YNetwork`.

In order to use the functions described here, you should include:

`js`	<script type='text/javascript' src='yocto_cellular.js'></script>
`cpp`	#include "yocto_cellular.h"
`m`	#import "yocto_cellular.h"
`pas`	uses yocto_cellular;
`vb`	yocto_cellular.vb
`cs`	yocto_cellular.cs
`java`	import com.yoctopuce.YoctoAPI.YCellular;
`uwp`	import com.yoctopuce.YoctoAPI.YCellular;
`py`	from yocto_cellular import *
`php`	require_once('yocto_cellular.php');
`ts`	in HTML: import { YCellular } from '../../dist/esm/yocto_cellular.js'; in Node.js: import { YCellular } from 'yoctolib-cjs/yocto_cellular.js';
`es`	in HTML: <script src="../../lib/yocto_cellular.js"></script> in node.js: require('yoctolib-es2017/yocto_cellular.js');
`dnp`	import YoctoProxyAPI.YCellularProxy
`cp`	#include "yocto_cellular_proxy.h"
`vi`	YCellular.vi
`ml`	import YoctoProxyAPI.YCellularProxy

Global functions

YCellular.FindCellular(**func**)

Retrieves a cellular interface for a given identifier.

YCellular.FindCellularInContext(**yctx**, **func**)

Retrieves a cellular interface for a given identifier in a YAPI context.

YCellular.FirstCellular()

Starts the enumeration of cellular interfaces currently accessible.

YCellular.FirstCellularInContext(**yctx**)

Starts the enumeration of cellular interfaces currently accessible.

YCellular.GetSimilarFunctions()

Enumerates all functions of type Cellular available on the devices currently reachable by the library, and returns their unique hardware ID.

`YCellular` properties

cellular→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

cellular→Apn *[writable]*

Access Point Name (APN) to be used, if needed.

cellular→CellOperator *[read-only]*

Name of the cell operator currently in use.

cellular→EnableData *[writable]*

Condition for enabling IP data services (GPRS).

cellular→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

cellular→FunctionId *[read-only]*

Hardware identifier of the cellular interface, without reference to the module.

cellular→HardwareId *[read-only]*

Unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

cellular→IsOnline *[read-only]*

Checks if the function is currently reachable.

cellular→LinkQuality *[read-only]*

Link quality, expressed in percent.

cellular→LockedOperator *[writable]*

Name of the only cell operator to use if automatic choice is disabled, or an empty string if the SIM card will automatically choose among available cell operators.

cellular→LogicalName *[writable]*

Logical name of the function.

cellular→Pin *[writable]*

N opaque string if a PIN code has been configured in the device to access the SIM card, or an empty string if none has been configured or if the code provided was rejected by the SIM card.

cellular→PingInterval *[writable]*

Automated connectivity check interval, in seconds.

cellular→RadioConfig *[writable]*

Type of protocol used over the serial line, as a string.

cellular→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

`YCellular` methods

cellular→_AT(cmd)

Sends an AT command to the GSM module and returns the command output.

cellular→clearCache()

Invalidates the cache.

cellular→clearDataCounters()

Clear the transmitted data counters.

cellular→decodePLMN(mccmnc)

Returns the cell operator brand for a given MCC/MNC pair.

cellular→describe()

Returns a short text that describes unambiguously the instance of the cellular interface in the form `TYPE(NAME)=SERIAL.FUNCTIONID`.

cellular→get_advertisedValue()

Returns the current value of the cellular interface (no more than 6 characters).

cellular→get_airplaneMode()

Returns true if the airplane mode is active (radio turned off).

cellular→get_apn()

Returns the Access Point Name (APN) to be used, if needed.

cellular→get_apnSecret()

Returns an opaque string if APN authentication parameters have been configured in the device, or an empty string otherwise.

cellular→get_availableOperators()

Returns the list detected cell operators in the neighborhood.

cellular→get_cellIdentifier()

Returns the unique identifier of the cellular antenna in use: MCC, MNC, LAC and Cell ID.

cellular→get_cellOperator()

Returns the name of the cell operator currently in use.

cellular→get_cellType()

Active cellular connection type.

cellular→get_dataReceived()

Returns the number of bytes received so far.

cellular→get_dataSent()

Returns the number of bytes sent so far.

cellular→get_enableData()

Returns the condition for enabling IP data services (GPRS).

cellular→get_errorMessage()

Returns the error message of the latest error with the cellular interface.

cellular→get_errorType()

Returns the numerical error code of the latest error with the cellular interface.

cellular→get_friendlyName()

Returns a global identifier of the cellular interface in the format `MODULE_NAME.FUNCTION_NAME`.

cellular→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

cellular→get_functionId()

Returns the hardware identifier of the cellular interface, without reference to the module.

cellular→get_hardwareId()

Returns the unique hardware identifier of the cellular interface in the form `SERIAL.FUNCTIONID`.

cellular→get_imsi()

Returns the International Mobile Subscriber Identity (MSI) that uniquely identifies the SIM card.

cellular→get_linkQuality()

Returns the link quality, expressed in percent.

cellular→get_lockedOperator()

Returns the name of the only cell operator to use if automatic choice is disabled, or an empty string if the SIM card will automatically choose among available cell operators.

cellular→get_logicalName()

Returns the logical name of the cellular interface.

cellular→get_message()

Returns the latest status message from the wireless interface.

cellular→get_module()

Gets the `YModule` object for the device on which the function is located.

cellular→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

cellular→get_pin()

Returns an opaque string if a PIN code has been configured in the device to access the SIM card, or an empty string if none has been configured or if the code provided was rejected by the SIM card.

cellular→get_pingInterval()

Returns the automated connectivity check interval, in seconds.

cellular→get_radioConfig()

Returns the type of protocol used over the serial line, as a string.

cellular→get_serialNumber()

Returns the serial number of the module, as set by the factory.

cellular→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

cellular→isOnline()

Checks if the cellular interface is currently reachable, without raising any error.

cellular→isOnline_async(**callback**, **context**)

Checks if the cellular interface is currently reachable, without raising any error (asynchronous version).

cellular→isReadOnly()

Test if the function is readOnly.

cellular→load(**msValidity**)

Preloads the cellular interface cache with a specified validity duration.

cellular→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

cellular→load_async(**msValidity**, **callback**, **context**)

Preloads the cellular interface cache with a specified validity duration (asynchronous version).

cellular→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

cellular→nextCellular()

Continues the enumeration of cellular interfaces started using `yFirstCellular()`.

cellular→quickCellSurvey()

Returns a list of nearby cellular antennas, as required for quick geolocation of the device.

cellular→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

cellular→sendPUK(**puk**, **newPin**)

Sends a PUK code to unlock the SIM card after three failed PIN code attempts, and setup a new PIN into the SIM card.

cellular→set_airplaneMode(**newval**)

Changes the activation state of airplane mode (radio turned off).

cellular→set_apn(**newval**)

Returns the Access Point Name (APN) to be used, if needed.

cellular→set_apnAuth(**username**, **password**)

Configure authentication parameters to connect to the APN.

cellular→set_dataReceived(**newval**)

Changes the value of the incoming data counter.

cellular→set_dataSent(**newval**)

Changes the value of the outgoing data counter.

cellular→set_enableData(**newval**)

Changes the condition for enabling IP data services (GPRS).

cellular→set_lockedOperator(**newval**)

Changes the name of the cell operator to be used.

cellular→set_logicalName(**newval**)

Changes the logical name of the cellular interface.

cellular→set_pin(newval)

Changes the PIN code used by the module to access the SIM card.

cellular→set_pingInterval(newval)

Changes the automated connectivity check interval, in seconds.

cellular→set_radioConfig(newval)

Changes the type of protocol used over the serial line.

cellular→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

cellular→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

cellular→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCellular.FindCellular() YCellular
YCellular.FindCellular()

Retrieves a cellular interface for a given identifier.

```
js      function yFindCellular( func)
cpp     YCellular* FindCellular( string func)
m       +(YCellular*) FindCellular : (NSString*) func
pas     TYCellular yFindCellular( func: string): TYCellular
vb      function FindCellular( ByVal func As String) As YCellular
cs      static YCellular FindCellular( string func)
java    static YCellular FindCellular( String func)
uwp     static YCellular FindCellular( string func)
py      FindCellular( func)
php     function FindCellular( $func)
ts      static FindCellular( func: string): YCellular
es      static FindCellular( func)
dnp     static YCellularProxy FindCellular( string func)
cp      static YCellularProxy * FindCellular( string func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the cellular interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCellular.isOnline()` to test if the cellular interface is indeed online at a given time. In case of ambiguity when looking for a cellular interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the cellular interface, for instance `YHUBGSM1.cellular`.

Returns :

a `YCellular` object allowing you to drive the cellular interface.

YCellular.FindCellularInContext() YCellular
YCellular.FindCellularInContext()

Retrieves a cellular interface for a given identifier in a YAPI context.

```
java  static YCellular FindCellularInContext( YAPIContext yctx, String func)
uwp   static YCellular FindCellularInContext( YAPIContext yctx, string func)
ts    static FindCellularInContext( yctx: YAPIContext, func: string): YCellular
es    static FindCellularInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the cellular interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCellular.isOnline()` to test if the cellular interface is indeed online at a given time. In case of ambiguity when looking for a cellular interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the cellular interface, for instance `YHUBGSM1.cellular`.

Returns :

a `YCellular` object allowing you to drive the cellular interface.

YCellular.FirstCellular() YCellular
YCellular.FirstCellular()

Starts the enumeration of cellular interfaces currently accessible.

js	function **yFirstCellular**( )
cpp	YCellular * **FirstCellular**( )
m	+(YCellular*) **FirstCellular**
pas	TYCellular **yFirstCellular**( ): TYCellular
vb	function **FirstCellular**( ) As YCellular
cs	static YCellular **FirstCellular**( )
java	static YCellular **FirstCellular**( )
uwp	static YCellular **FirstCellular**( )
py	**FirstCellular**( )
php	function **FirstCellular**( )
ts	static **FirstCellular**( ): YCellular | null
es	static **FirstCellular**( )

Use the method `YCellular.nextCellular()` to iterate on next cellular interfaces.

Returns :
a pointer to a `YCellular` object, corresponding to the first cellular interface currently online, or a `null` pointer if there are none.

YCellular.FirstCellularInContext() YCellular YCellular.FirstCellularInContext()

Starts the enumeration of cellular interfaces currently accessible.

java static YCellular **FirstCellularInContext**(YAPIContext **yctx**)
uwp static YCellular **FirstCellularInContext**(YAPIContext **yctx**)
ts static **FirstCellularInContext**(**yctx**: YAPIContext): YCellular | null
es static **FirstCellularInContext**(**yctx**)

Use the method `YCellular.nextCellular()` to iterate on next cellular interfaces.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YCellular` object, corresponding to the first cellular interface currently online, or a `null` pointer if there are none.

YCellular.GetSimilarFunctions() YCellular
YCellular.GetSimilarFunctions()

Enumerates all functions of type Cellular available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YCellular.FindCellular` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

cellular→AdvertisedValue — YCellular

Short string representing the current state of the function.

dnp string **AdvertisedValue**

cellular→Apn — YCellular

Access Point Name (APN) to be used, if needed.

dnp string **Apn**

When left blank, the APN suggested by the cell operator will be used.

Writable. Returns the Access Point Name (APN) to be used, if needed. When left blank, the APN suggested by the cell operator will be used. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→CellOperator — YCellular

Name of the cell operator currently in use.

dnp string **CellOperator**

cellular→EnableData YCellular

Condition for enabling IP data services (GPRS).

dnp int **EnableData**

When data services are disabled, SMS are the only mean of communication.

Writable. The service can be either fully deactivated, or limited to the SIM home network, or enabled for all partner networks (roaming). Caution: enabling data services on roaming networks may cause prohibitive communication costs !

When data services are disabled, SMS are the only mean of communication. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→FriendlyName YCellular

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

cellular→FunctionId — YCellular

Hardware identifier of the cellular interface, without reference to the module.

dnp string **FunctionId**

For example `relay1`

cellular→HardwareId — YCellular

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

cellular→IsOnline YCellular

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

cellular→LinkQuality YCellular

Link quality, expressed in percent.

dnp int **LinkQuality**

cellular→LockedOperator YCellular

Name of the only cell operator to use if automatic choice is disabled, or an empty string if the SIM card will automatically choose among available cell operators.

dnp string **LockedOperator**

Writable. Changes the name of the cell operator to be used. If the name is an empty string, the choice will be made automatically based on the SIM card. Otherwise, the selected operator is the only one that will be used. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→LogicalName YCellular

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→Pin YCellular

N opaque string if a PIN code has been configured in the device to access the SIM card, or an empty string if none has been configured or if the code provided was rejected by the SIM card.

dnp string **Pin**

Writable. Changes the PIN code used by the module to access the SIM card. This function does not change the code on the SIM card itself, but only changes the parameter used by the device to try to get access to it. If the SIM code does not work immediately on first try, it will be automatically forgotten and the message will be set to "Enter SIM PIN". The method should then be invoked again with right correct PIN code. After three failed attempts in a row, the message is changed to "Enter SIM PUK" and the SIM card PUK code must be provided using method `sendPUK`.

Remember to call the `saveToFlash()` method of the module to save the new value in the device flash.

cellular→PingInterval YCellular

Automated connectivity check interval, in seconds.

dnp int **PingInterval**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→RadioConfig YCellular

Type of protocol used over the serial line, as a string.

dnp string **RadioConfig**

Possible values are "Line" for ASCII messages separated by CR and/or LF, "Frame:[timeout]ms" for binary messages separated by a delay time, "Char" for a continuous ASCII stream or "Byte" for a continuous binary stream.

Writable. Changes the type of protocol used over the serial line. Possible values are "Line" for ASCII messages separated by CR and/or LF, "Frame:[timeout]ms" for binary messages separated by a delay time, "Char" for a continuous ASCII stream or "Byte" for a continuous binary stream. The suffix "/[wait]ms" can be added to reduce the transmit rate so that there is always at lest the specified number of milliseconds between each bytes sent. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

cellular→SerialNumber YCellular

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

cellular→_AT() YCellular

Sends an AT command to the GSM module and returns the command output.

```
cpp     string _AT( string cmd)
m       -(NSString*) _AT : (NSString*) cmd
pas     string _AT( cmd: string): string
vb      function _AT( ByVal cmd As String) As String
cs      string _AT( string cmd)
java    String _AT( String cmd)
uwp     async Task<string> _AT( string cmd)
py      _AT( cmd)
php     function _AT( $cmd)
ts      async _AT( cmd: string): Promise<string>
es      async _AT( cmd)
dnp     string _AT( string cmd)
cp      string _AT( string cmd)
cmd     YCellular target _AT cmd
```

The command will only execute when the GSM module is in standard command state, and should leave it in the exact same state. Use this function with great care !

Parameters :

cmd the AT command to execute, like for instance: "+CCLK?".

Returns :

a string with the result of the commands. Empty lines are automatically removed from the output.

cellular→clearCache() YCellular

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the cellular interface attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

cellular→clearDataCounters() YCellular

Clear the transmitted data counters.

```
js      function clearDataCounters( )
cpp     int clearDataCounters( )
m       -(int) clearDataCounters
pas     LongInt clearDataCounters( ): LongInt
vb      function clearDataCounters( ) As Integer
cs      int clearDataCounters( )
java    int clearDataCounters( )
uwp     async Task<int> clearDataCounters( )
py      clearDataCounters( )
php     function clearDataCounters( )
ts      async clearDataCounters( ): Promise<number>
es      async clearDataCounters( )
dnp     int clearDataCounters( )
cp      int clearDataCounters( )
cmd     YCellular target clearDataCounters
```

Returns :
YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→decodePLMN() YCellular

Returns the cell operator brand for a given MCC/MNC pair.

```
js    function decodePLMN( mccmnc)
cpp   string decodePLMN( string mccmnc)
m     -(NSString*) decodePLMN : (NSString*) mccmnc
pas   string decodePLMN( mccmnc: string): string
vb    function decodePLMN( ByVal mccmnc As String) As String
cs    string decodePLMN( string mccmnc)
java  String decodePLMN( String mccmnc)
uwp   async Task<string> decodePLMN( string mccmnc)
py    decodePLMN( mccmnc)
php   function decodePLMN( $mccmnc)
ts    async decodePLMN( mccmnc: string): Promise<string>
es    async decodePLMN( mccmnc)
dnp   string decodePLMN( string mccmnc)
cp    string decodePLMN( string mccmnc)
cmd   YCellular target decodePLMN mccmnc
```

Parameters :

mccmnc a string starting with a MCC code followed by a MNC code,

Returns :

a string containing the corresponding cell operator brand name.

cellular→describe() YCellular

Returns a short text that describes unambiguously the instance of the cellular interface in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the cellular interface (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

cellular→get_advertisedValue() YCellular
cellular→advertisedValue()

Returns the current value of the cellular interface (no more than 6 characters).

js	function **get_advertisedValue**( )
cpp	string **get_advertisedValue**( )
m	-(NSString*) advertisedValue
pas	string **get_advertisedValue**( ): string
vb	function **get_advertisedValue**( ) As String
cs	string **get_advertisedValue**( )
java	String **get_advertisedValue**( )
uwp	async Task<string> **get_advertisedValue**( )
py	**get_advertisedValue**( )
php	function **get_advertisedValue**( )
ts	async **get_advertisedValue**( ): Promise<string>
es	async **get_advertisedValue**( )
dnp	string **get_advertisedValue**( )
cp	string **get_advertisedValue**( )
cmd	YCellular **target get_advertisedValue**

Returns :

a string corresponding to the current value of the cellular interface (no more than 6 characters).

On failure, throws an exception or returns `YCellular.ADVERTISEDVALUE_INVALID`.

cellular→get_airplaneMode()
cellular→airplaneMode()

YCellular

Returns true if the airplane mode is active (radio turned off).

js	function **get_airplaneMode**( )
cpp	Y_AIRPLANEMODE_enum **get_airplaneMode**( )
m	-(Y_AIRPLANEMODE_enum) airplaneMode
pas	Integer **get_airplaneMode**( ): Integer
vb	function **get_airplaneMode**( ) As Integer
cs	int **get_airplaneMode**( )
java	int **get_airplaneMode**( )
uwp	async Task<int> **get_airplaneMode**( )
py	**get_airplaneMode**( )
php	function **get_airplaneMode**( )
ts	async **get_airplaneMode**( ): Promise<YCellular_AirplaneMode>
es	async **get_airplaneMode**( )
dnp	int **get_airplaneMode**( )
cp	int **get_airplaneMode**( )
cmd	YCellular **target get_airplaneMode**

Returns :

either `YCellular.AIRPLANEMODE_OFF` or `YCellular.AIRPLANEMODE_ON`, according to true if the airplane mode is active (radio turned off)

On failure, throws an exception or returns `YCellular.AIRPLANEMODE_INVALID`.

cellular→get_apn()
cellular→apn()

YCellular

Returns the Access Point Name (APN) to be used, if needed.

```
js      function get_apn( )
cpp     string get_apn( )
m       -(NSString*) apn
pas     string get_apn( ): string
vb      function get_apn( ) As String
cs      string get_apn( )
java    String get_apn( )
uwp     async Task<string> get_apn( )
py      get_apn( )
php     function get_apn( )
ts      async get_apn( ): Promise<string>
es      async get_apn( )
dnp     string get_apn( )
cp      string get_apn( )
cmd     YCellular target get_apn
```

When left blank, the APN suggested by the cell operator will be used.

Returns :
a string corresponding to the Access Point Name (APN) to be used, if needed

On failure, throws an exception or returns `YCellular.APN_INVALID`.

cellular→get_apnSecret()
cellular→apnSecret()

YCellular

Returns an opaque string if APN authentication parameters have been configured in the device, or an empty string otherwise.

```
js      function get_apnSecret( )
cpp     string get_apnSecret( )
m       -(NSString*) apnSecret
pas     string get_apnSecret( ): string
vb      function get_apnSecret( ) As String
cs      string get_apnSecret( )
java    String get_apnSecret( )
uwp     async Task<string> get_apnSecret( )
py      get_apnSecret( )
php     function get_apnSecret( )
ts      async get_apnSecret( ): Promise<string>
es      async get_apnSecret( )
dnp     string get_apnSecret( )
cp      string get_apnSecret( )
cmd     YCellular target get_apnSecret
```

To configure these parameters, use `set_apnAuth()`.

Returns :

a string corresponding to an opaque string if APN authentication parameters have been configured in the device, or an empty string otherwise

On failure, throws an exception or returns `YCellular.APNSECRET_INVALID`.

cellular→get_availableOperators()
cellular→availableOperators()

YCellular

Returns the list detected cell operators in the neighborhood.

```
js      function get_availableOperators( )
cpp     vector<string> get_availableOperators( )
m       -(NSMutableArray*) availableOperators
pas     TStringArray get_availableOperators( ): TStringArray
vb      function get_availableOperators( ) As List
cs      List<string> get_availableOperators( )
java    ArrayList<String> get_availableOperators( )
uwp     async Task<List<string>> get_availableOperators( )
py      get_availableOperators( )
php     function get_availableOperators( )
ts      async get_availableOperators( ): Promise<string[]
es      async get_availableOperators( )
dnp     string[] get_availableOperators( )
cp      vector<string> get_availableOperators( )
cmd     YCellular target get_availableOperators
```

This function will typically take between 30 seconds to 1 minute to return. Note that any SIM card can usually only connect to specific operators. All networks returned by this function might therefore not be available for connection.

Returns :
a list of string (cell operator names).

cellular→get_cellIdentifier()
cellular→cellIdentifier()

YCellular

Returns the unique identifier of the cellular antenna in use: MCC, MNC, LAC and Cell ID.

```
js      function get_cellIdentifier( )
cpp     string get_cellIdentifier( )
m       -(NSString*) cellIdentifier
pas     string get_cellIdentifier( ): string
vb      function get_cellIdentifier( ) As String
cs      string get_cellIdentifier( )
java    String get_cellIdentifier( )
uwp     async Task<string> get_cellIdentifier( )
py      get_cellIdentifier( )
php     function get_cellIdentifier( )
ts      async get_cellIdentifier( ): Promise<string>
es      async get_cellIdentifier( )
dnp     string get_cellIdentifier( )
cp      string get_cellIdentifier( )
cmd     YCellular target get_cellIdentifier
```

Returns :

a string corresponding to the unique identifier of the cellular antenna in use: MCC, MNC, LAC and Cell ID

On failure, throws an exception or returns `YCellular.CELLIDENTIFIER_INVALID`.

cellular→get_cellOperator()
cellular→cellOperator()

YCellular

Returns the name of the cell operator currently in use.

```
js      function get_cellOperator( )
cpp     string get_cellOperator( )
m       -(NSString*) cellOperator
pas     string get_cellOperator( ): string
vb      function get_cellOperator( ) As String
cs      string get_cellOperator( )
java    String get_cellOperator( )
uwp     async Task<string> get_cellOperator( )
py      get_cellOperator( )
php     function get_cellOperator( )
ts      async get_cellOperator( ): Promise<string>
es      async get_cellOperator( )
dnp     string get_cellOperator( )
cp      string get_cellOperator( )
cmd     YCellular target get_cellOperator
```

Returns :

a string corresponding to the name of the cell operator currently in use

On failure, throws an exception or returns `YCellular.CELLOPERATOR_INVALID`.

cellular→get_cellType()
cellular→cellType()

YCellular

Active cellular connection type.

js	function **get_cellType**( )
cpp	Y_CELLTYPE_enum **get_cellType**( )
m	-(Y_CELLTYPE_enum) cellType
pas	Integer **get_cellType**( ): Integer
vb	function **get_cellType**( ) As Integer
cs	int **get_cellType**( )
java	int **get_cellType**( )
uwp	async Task<int> **get_cellType**( )
py	**get_cellType**( )
php	function **get_cellType**( )
ts	async **get_cellType**( ): Promise<YCellular_CellType>
es	async **get_cellType**( )
dnp	int **get_cellType**( )
cp	int **get_cellType**( )
cmd	YCellular **target get_cellType**

Returns :

a value among `YCellular.CELLTYPE_GPRS`, `YCellular.CELLTYPE_EGPRS`, `YCellular.CELLTYPE_WCDMA`, `YCellular.CELLTYPE_HSDPA`, `YCellular.CELLTYPE_NONE`, `YCellular.CELLTYPE_CDMA`, `YCellular.CELLTYPE_LTE_M`, `YCellular.CELLTYPE_NB_IOT` and `YCellular.CELLTYPE_EC_GSM_IOT`

On failure, throws an exception or returns `YCellular.CELLTYPE_INVALID`.

cellular→get_dataReceived()
cellular→dataReceived()

YCellular

Returns the number of bytes received so far.

js	function **get_dataReceived**( )
cpp	int **get_dataReceived**( )
m	-(int) dataReceived
pas	LongInt **get_dataReceived**( ): LongInt
vb	function **get_dataReceived**( ) As Integer
cs	int **get_dataReceived**( )
java	int **get_dataReceived**( )
uwp	async Task<int> **get_dataReceived**( )
py	**get_dataReceived**( )
php	function **get_dataReceived**( )
ts	async **get_dataReceived**( ): Promise<number>
es	async **get_dataReceived**( )
dnp	int **get_dataReceived**( )
cp	int **get_dataReceived**( )
cmd	YCellular **target get_dataReceived**

Returns :

an integer corresponding to the number of bytes received so far

On failure, throws an exception or returns `YCellular.DATARECEIVED_INVALID`.

cellular→get_dataSent()
cellular→dataSent()

YCellular

Returns the number of bytes sent so far.

js	function **get_dataSent**( )
cpp	int **get_dataSent**( )
m	-(int) dataSent
pas	LongInt **get_dataSent**( ): LongInt
vb	function **get_dataSent**( ) As Integer
cs	int **get_dataSent**( )
java	int **get_dataSent**( )
uwp	async Task<int> **get_dataSent**( )
py	**get_dataSent**( )
php	function **get_dataSent**( )
ts	async **get_dataSent**( ): Promise<number>
es	async **get_dataSent**( )
dnp	int **get_dataSent**( )
cp	int **get_dataSent**( )
cmd	YCellular **target get_dataSent**

Returns :
an integer corresponding to the number of bytes sent so far

On failure, throws an exception or returns `YCellular.DATASENT_INVALID`.

cellular→get_enableData() YCellular
cellular→enableData()

Returns the condition for enabling IP data services (GPRS).

js	function **get_enableData**( )
cpp	Y_ENABLEDATA_enum **get_enableData**( )
m	-(Y_ENABLEDATA_enum) enableData
pas	Integer **get_enableData**( ): Integer
vb	function **get_enableData**( ) As Integer
cs	int **get_enableData**( )
java	int **get_enableData**( )
uwp	async Task<int> **get_enableData**( )
py	**get_enableData**( )
php	function **get_enableData**( )
ts	async **get_enableData**( ): Promise<YCellular_EnableData>
es	async **get_enableData**( )
dnp	int **get_enableData**( )
cp	int **get_enableData**( )
cmd	YCellular **target get_enableData**

When data services are disabled, SMS are the only mean of communication.

Returns :

a value among `YCellular.ENABLEDATA_HOMENETWORK`, `YCellular.ENABLEDATA_ROAMING`, `YCellular.ENABLEDATA_NEVER` and `YCellular.ENABLEDATA_NEUTRALITY` corresponding to the condition for enabling IP data services (GPRS)

On failure, throws an exception or returns `YCellular.ENABLEDATA_INVALID`.

cellular→get_errorMessage() YCellular
cellular→errorMessage()

Returns the error message of the latest error with the cellular interface.

```
js    function get_errorMessage( )
cpp   string get_errorMessage( )
m     -(NSString*) errorMessage
pas   string get_errorMessage( ): string
vb    function get_errorMessage( ) As String
cs    string get_errorMessage( )
java  String get_errorMessage( )
py    get_errorMessage( )
php   function get_errorMessage( )
ts    get_errorMessage( ): string
es    get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the cellular interface object

cellular→get_errorType()
cellular→errorType()

YCellular

Returns the numerical error code of the latest error with the cellular interface.

js	function **get_errorType**( )
cpp	YRETCODE **get_errorType**( )
m	-(YRETCODE) errorType
pas	YRETCODE **get_errorType**( ): YRETCODE
vb	function **get_errorType**( ) As YRETCODE
cs	YRETCODE **get_errorType**( )
java	int **get_errorType**( )
py	**get_errorType**( )
php	function **get_errorType**( )
ts	**get_errorType**( ): number
es	**get_errorType**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the cellular interface object

cellular→get_friendlyName()
cellular→friendlyName()

YCellular

Returns a global identifier of the cellular interface in the format `MODULE_NAME.FUNCTION_NAME`.

```
js      function get_friendlyName( )
cpp     string get_friendlyName( )
m       -(NSString*) friendlyName
cs      string get_friendlyName( )
java    String get_friendlyName( )
py      get_friendlyName( )
php     function get_friendlyName( )
ts      async get_friendlyName( ): Promise<string>
es      async get_friendlyName( )
dnp     string get_friendlyName( )
cp      string get_friendlyName( )
```

The returned string uses the logical names of the module and of the cellular interface if they are defined, otherwise the serial number of the module and the hardware identifier of the cellular interface (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the cellular interface using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `YCellular.FRIENDLYNAME_INVALID`.

cellular→get_functionDescriptor() YCellular
cellular→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of `YFunction` reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

cellular→get_functionId()
cellular→functionId()

YCellular

Returns the hardware identifier of the cellular interface, without reference to the module.

```
js      function get_functionId( )
cpp     string get_functionId( )
m       -(NSString*) functionId
vb      function get_functionId( ) As String
cs      string get_functionId( )
java    String get_functionId( )
py      get_functionId( )
php     function get_functionId( )
ts      async get_functionId( ): Promise<string>
es      async get_functionId( )
dnp     string get_functionId( )
cp      string get_functionId( )
```

For example `relay1`

Returns :
a string that identifies the cellular interface (ex: `relay1`)

On failure, throws an exception or returns `YCellular.FUNCTIONID_INVALID`.

cellular→get_hardwareId() YCellular
cellular→hardwareId()

Returns the unique hardware identifier of the cellular interface in the form `SERIAL.FUNCTIONID`.

js	function **get_hardwareId**( )
cpp	string **get_hardwareId**( )
m	-(NSString*) hardwareId
vb	function **get_hardwareId**( ) As String
cs	string **get_hardwareId**( )
java	String **get_hardwareId**( )
py	**get_hardwareId**( )
php	function **get_hardwareId**( )
ts	async **get_hardwareId**( ): Promise<string>
es	async **get_hardwareId**( )
dnp	string **get_hardwareId**( )
cp	string **get_hardwareId**( )

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the cellular interface (for example `RELAYLO1-123456.relay1`).

Returns :
a string that uniquely identifies the cellular interface (ex: `RELAYLO1-123456.relay1`)

On failure, throws an exception or returns `YCellular.HARDWAREID_INVALID`.

cellular→get_imsi()
cellular→imsi()

YCellular

Returns the International Mobile Subscriber Identity (MSI) that uniquely identifies the SIM card.

```
js      function get_imsi( )
cpp     string get_imsi( )
m       -(NSString*) imsi
pas     string get_imsi( ): string
vb      function get_imsi( ) As String
cs      string get_imsi( )
java    String get_imsi( )
uwp     async Task<string> get_imsi( )
py      get_imsi( )
php     function get_imsi( )
ts      async get_imsi( ): Promise<string>
es      async get_imsi( )
dnp     string get_imsi( )
cp      string get_imsi( )
cmd     YCellular target get_imsi
```

The first 3 digits represent the mobile country code (MCC), which is followed by the mobile network code (MNC), either 2-digit (European standard) or 3-digit (North American standard)

Returns :
a string corresponding to the International Mobile Subscriber Identity (MSI) that uniquely identifies the SIM card

On failure, throws an exception or returns `YCellular.IMSI_INVALID`.

cellular→get_linkQuality()
cellular→linkQuality()

YCellular

Returns the link quality, expressed in percent.

js	function **get_linkQuality**( )
cpp	int **get_linkQuality**( )
m	-(int) linkQuality
pas	LongInt **get_linkQuality**( ): LongInt
vb	function **get_linkQuality**( ) As Integer
cs	int **get_linkQuality**( )
java	int **get_linkQuality**( )
uwp	async Task<int> **get_linkQuality**( )
py	**get_linkQuality**( )
php	function **get_linkQuality**( )
ts	async **get_linkQuality**( ): Promise<number>
es	async **get_linkQuality**( )
dnp	int **get_linkQuality**( )
cp	int **get_linkQuality**( )
cmd	YCellular **target get_linkQuality**

Returns :

an integer corresponding to the link quality, expressed in percent

On failure, throws an exception or returns `YCellular.LINKQUALITY_INVALID`.

cellular→get_lockedOperator() YCellular
cellular→lockedOperator()

Returns the name of the only cell operator to use if automatic choice is disabled, or an empty string if the SIM card will automatically choose among available cell operators.

```
js      function get_lockedOperator( )
cpp     string get_lockedOperator( )
m       -(NSString*) lockedOperator
pas     string get_lockedOperator( ): string
vb      function get_lockedOperator( ) As String
cs      string get_lockedOperator( )
java    String get_lockedOperator( )
uwp     async Task<string> get_lockedOperator( )
py      get_lockedOperator( )
php     function get_lockedOperator( )
ts      async get_lockedOperator( ): Promise<string>
es      async get_lockedOperator( )
dnp     string get_lockedOperator( )
cp      string get_lockedOperator( )
cmd     YCellular target get_lockedOperator
```

Returns :

a string corresponding to the name of the only cell operator to use if automatic choice is disabled, or an empty string if the SIM card will automatically choose among available cell operators

On failure, throws an exception or returns `YCellular.LOCKEDOPERATOR_INVALID`.

cellular→get_logicalName()
cellular→logicalName()

YCellular

Returns the logical name of the cellular interface.

js	function **get_logicalName**( )
cpp	string **get_logicalName**( )
m	-(NSString*) logicalName
pas	string **get_logicalName**( ): string
vb	function **get_logicalName**( ) As String
cs	string **get_logicalName**( )
java	String **get_logicalName**( )
uwp	async Task<string> **get_logicalName**( )
py	**get_logicalName**( )
php	function **get_logicalName**( )
ts	async **get_logicalName**( ): Promise<string>
es	async **get_logicalName**( )
dnp	string **get_logicalName**( )
cp	string **get_logicalName**( )
cmd	YCellular **target get_logicalName**

Returns :

a string corresponding to the logical name of the cellular interface.

On failure, throws an exception or returns `YCellular.LOGICALNAME_INVALID`.

cellular→get_message()
cellular→message()

YCellular

Returns the latest status message from the wireless interface.

```
js      function get_message( )
cpp     string get_message( )
m       -(NSString*) message
pas     string get_message( ): string
vb      function get_message( ) As String
cs      string get_message( )
java    String get_message( )
uwp     async Task<string> get_message( )
py      get_message( )
php     function get_message( )
ts      async get_message( ): Promise<string>
es      async get_message( )
dnp     string get_message( )
cp      string get_message( )
cmd     YCellular target get_message
```

Returns :
a string corresponding to the latest status message from the wireless interface

On failure, throws an exception or returns `YCellular.MESSAGE_INVALID`.

cellular→get_module()
cellular→module()

YCellular

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

cellular→get_module_async()
cellular→module_async()

YCellular

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

cellular→get_pin()
cellular→pin()

YCellular

Returns an opaque string if a PIN code has been configured in the device to access the SIM card, or an empty string if none has been configured or if the code provided was rejected by the SIM card.

```
js      function get_pin( )
cpp     string get_pin( )
m       -(NSString*) pin
pas     string get_pin( ): string
vb      function get_pin( ) As String
cs      string get_pin( )
java    String get_pin( )
uwp     async Task<string> get_pin( )
py      get_pin( )
php     function get_pin( )
ts      async get_pin( ): Promise<string>
es      async get_pin( )
dnp     string get_pin( )
cp      string get_pin( )
cmd     YCellular target get_pin
```

Returns :

a string corresponding to an opaque string if a PIN code has been configured in the device to access the SIM card, or an empty string if none has been configured or if the code provided was rejected by the SIM card

On failure, throws an exception or returns `YCellular.PIN_INVALID`.

cellular→get_pingInterval()
cellular→pingInterval()

YCellular

Returns the automated connectivity check interval, in seconds.

```
js      function get_pingInterval( )
cpp     int get_pingInterval( )
m       -(int) pingInterval
pas     LongInt get_pingInterval( ): LongInt
vb      function get_pingInterval( ) As Integer
cs      int get_pingInterval( )
java    int get_pingInterval( )
uwp     async Task<int> get_pingInterval( )
py      get_pingInterval( )
php     function get_pingInterval( )
ts      async get_pingInterval( ): Promise<number>
es      async get_pingInterval( )
dnp     int get_pingInterval( )
cp      int get_pingInterval( )
cmd     YCellular target get_pingInterval
```

Returns :
an integer corresponding to the automated connectivity check interval, in seconds

On failure, throws an exception or returns `YCellular.PINGINTERVAL_INVALID`.

cellular→get_radioConfig() YCellular
cellular→radioConfig()

Returns the type of protocol used over the serial line, as a string.

```
js      function get_radioConfig( )
cpp     string get_radioConfig( )
m       -(NSString*) radioConfig
pas     string get_radioConfig( ): string
vb      function get_radioConfig( ) As String
cs      string get_radioConfig( )
java    String get_radioConfig( )
uwp     async Task<string> get_radioConfig( )
py      get_radioConfig( )
php     function get_radioConfig( )
ts      async get_radioConfig( ): Promise<string>
es      async get_radioConfig( )
dnp     string get_radioConfig( )
cp      string get_radioConfig( )
cmd     YCellular target get_radioConfig
```

Possible values are "Line" for ASCII messages separated by CR and/or LF, "Frame:[timeout]ms" for binary messages separated by a delay time, "Char" for a continuous ASCII stream or "Byte" for a continuous binary stream.

Returns :
a string corresponding to the type of protocol used over the serial line, as a string

On failure, throws an exception or returns `YCellular.RADIOCONFIG_INVALID`.

cellular→get_serialNumber()
cellular→serialNumber()

YCellular

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YCellular target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

cellular→get_userData()
cellular→userData()

YCellular

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

cellular→isOnline() YCellular

Checks if the cellular interface is currently reachable, without raising any error.

```
js      function isOnline( )
cpp     bool isOnline( )
m       -(BOOL) isOnline
pas     boolean isOnline( ): boolean
vb      function isOnline( ) As Boolean
cs      bool isOnline( )
java    boolean isOnline( )
py      isOnline( )
php     function isOnline( )
ts      async isOnline( ): Promise<boolean>
es      async isOnline( )
dnp     bool isOnline( )
cp      bool isOnline( )
```

If there is a cached value for the cellular interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the cellular interface.

Returns :

`true` if the cellular interface can be reached, and `false` otherwise

cellular→isOnline_async() YCellular

Checks if the cellular interface is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the cellular interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

cellular→isReadOnly() YCellular

Test if the function is readOnly.

cpp	bool **isReadOnly**( )
m	-(bool) **isReadOnly**
pas	boolean **isReadOnly**( ): boolean
vb	function **isReadOnly**( ) As Boolean
cs	bool **isReadOnly**( )
java	boolean **isReadOnly**( )
uwp	async Task<bool> **isReadOnly**( )
py	**isReadOnly**( )
php	function **isReadOnly**( )
ts	async **isReadOnly**( ): Promise<boolean>
es	async **isReadOnly**( )
dnp	bool **isReadOnly**( )
cp	bool **isReadOnly**( )
cmd	YCellular **target isReadOnly**

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

cellular→load() YCellular

Preloads the cellular interface cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→loadAttribute() YCellular

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

cellular→load_async() YCellular

Preloads the cellular interface cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI.SUCCESS)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

cellular→muteValueCallbacks() YCellular

Disables the propagation of every new advertised value to the parent hub.

```
js      function muteValueCallbacks( )
cpp     int muteValueCallbacks( )
m       -(int) muteValueCallbacks
pas     LongInt muteValueCallbacks( ): LongInt
vb      function muteValueCallbacks( ) As Integer
cs      int muteValueCallbacks( )
java    int muteValueCallbacks( )
uwp     async Task<int> muteValueCallbacks( )
py      muteValueCallbacks( )
php     function muteValueCallbacks( )
ts      async muteValueCallbacks( ): Promise<number>
es      async muteValueCallbacks( )
dnp     int muteValueCallbacks( )
cp      int muteValueCallbacks( )
cmd     YCellular target muteValueCallbacks
```

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→nextCellular() YCellular

Continues the enumeration of cellular interfaces started using `yFirstCellular()`.

```
js      function nextCellular( )
cpp     YCellular * nextCellular( )
m       -(nullable YCellular*) nextCellular
pas     TYCellular nextCellular( ): TYCellular
vb      function nextCellular( ) As YCellular
cs      YCellular nextCellular( )
java    YCellular nextCellular( )
uwp     YCellular nextCellular( )
py      nextCellular( )
php     function nextCellular( )
ts      nextCellular( ): YCellular | null
es      nextCellular( )
```

Caution: You can't make any assumption about the returned cellular interfaces order. If you want to find a specific a cellular interface, use `Cellular.findCellular()` and a hardwareID or a logical name.

Returns :

a pointer to a `YCellular` object, corresponding to a cellular interface currently online, or a `null` pointer if there are no more cellular interfaces to enumerate.

cellular→quickCellSurvey() YCellular

Returns a list of nearby cellular antennas, as required for quick geolocation of the device.

```
js      function quickCellSurvey( )
cpp     vector<YCellRecord> quickCellSurvey( )
m       -(NSMutableArray*) quickCellSurvey
pas     TYCellRecordArray quickCellSurvey( ): TYCellRecordArray
vb      function quickCellSurvey( ) As List
cs      List<YCellRecord> quickCellSurvey( )
java    ArrayList<YCellRecord> quickCellSurvey( )
uwp     async Task<List<YCellRecord>> quickCellSurvey( )
py      quickCellSurvey( )
php     function quickCellSurvey( )
ts      async quickCellSurvey( ): Promise<YCellRecord[]
es      async quickCellSurvey( )
dnp     YCellRecordProxy[] quickCellSurvey( )
cp      vector<YCellRecordProxy> quickCellSurvey( )
cmd     YCellular target quickCellSurvey
```

The first cell listed is the serving cell, and the next ones are the neighbor cells reported by the serving cell.

Returns :
a list of `YCellRecords`.

cellular→registerValueCallback() YCellular

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YCellularValueCallback **callback**)
m	-(int) **registerValueCallback** : (YCellularValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYCellularValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YCellularValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YCellularValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

cellular→sendPUK() YCellular

Sends a PUK code to unlock the SIM card after three failed PIN code attempts, and setup a new PIN into the SIM card.

```
js    function sendPUK( puk, newPin)
cpp   int sendPUK( string puk, string newPin)
m     -(int) sendPUK : (NSString*) puk : (NSString*) newPin
pas   LongInt sendPUK( puk: string, newPin: string): LongInt
vb    function sendPUK( ByVal puk As String, ByVal newPin As String) As Integer
cs    int sendPUK( string puk, string newPin)
java  int sendPUK( String puk, String newPin)
uwp   async Task<int> sendPUK( string puk, string newPin)
py    sendPUK( puk, newPin)
php   function sendPUK( $puk, $newPin)
ts    async sendPUK( puk: string, newPin: string): Promise<number>
es    async sendPUK( puk, newPin)
dnp   int sendPUK( string puk, string newPin)
cp    int sendPUK( string puk, string newPin)
cmd   YCellular target sendPUK puk newPin
```

Only ten consecutive tentatives are permitted: after that, the SIM card will be blocked permanently without any mean of recovery to use it again. Note that after calling this method, you have usually to invoke method `set_pin()` to tell the YoctoHub which PIN to use in the future.

Parameters :

puk the SIM PUK code

newPin new PIN code to configure into the SIM card

Returns :

`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_airplaneMode()
cellular→setAirplaneMode()

YCellular

Changes the activation state of airplane mode (radio turned off).

```
js      function set_airplaneMode( newval)
cpp     int set_airplaneMode( Y_AIRPLANEMODE_enum newval)
m       -(int) setAirplaneMode : (Y_AIRPLANEMODE_enum) newval
pas     integer set_airplaneMode( newval: Integer): integer
vb      function set_airplaneMode( ByVal newval As Integer) As Integer
cs      int set_airplaneMode( int newval)
java    int set_airplaneMode( int newval)
uwp     async Task<int> set_airplaneMode( int newval)
py      set_airplaneMode( newval)
php     function set_airplaneMode( $newval)
ts      async set_airplaneMode( newval: YCellular_AirplaneMode): Promise<number>
es      async set_airplaneMode( newval)
dnp     int set_airplaneMode( int newval)
cp      int set_airplaneMode( int newval)
cmd     YCellular target set_airplaneMode newval
```

Parameters :

newval either `YCellular.AIRPLANEMODE_OFF` or `YCellular.AIRPLANEMODE_ON`, according to the activation state of airplane mode (radio turned off)

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_apn()
cellular→setApn()

YCellular

Returns the Access Point Name (APN) to be used, if needed.

```
js      function set_apn( newval)
cpp     int set_apn( string newval)
m       -(int) setApn : (NSString*) newval
pas     integer set_apn( newval: string): integer
vb      function set_apn( ByVal newval As String) As Integer
cs      int set_apn( string newval)
java    int set_apn( String newval)
uwp     async Task<int> set_apn( string newval)
py      set_apn( newval)
php     function set_apn( $newval)
ts      async set_apn( newval: string): Promise<number>
es      async set_apn( newval)
dnp     int set_apn( string newval)
cp      int set_apn( string newval)
cmd     YCellular target set_apn newval
```

When left blank, the APN suggested by the cell operator will be used. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_apnAuth()
cellular→setApnAuth()

YCellular

Configure authentication parameters to connect to the APN.

```
js    function set_apnAuth( username, password)
cpp   int set_apnAuth( string username, string password)
m     -(int) setApnAuth : (NSString*) username
                        : (NSString*) password
pas   LongInt set_apnAuth( username: string, password: string): LongInt
vb    function set_apnAuth( ByVal username As String, ByVal password As String) As Integer
cs    int set_apnAuth( string username, string password)
java  int set_apnAuth( String username, String password)
uwp   async Task<int> set_apnAuth( string username, string password)
py    set_apnAuth( username, password)
php   function set_apnAuth( $username, $password)
ts    async set_apnAuth( username: string, password: string): Promise<number>
es    async set_apnAuth( username, password)
dnp   int set_apnAuth( string username, string password)
cp    int set_apnAuth( string username, string password)
cmd   YCellular target set_apnAuth username password
```

Both PAP and CHAP authentication are supported.

Parameters :

username APN username

password APN password

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_dataReceived()
cellular→setDataReceived()

YCellular

Changes the value of the incoming data counter.

```
js      function set_dataReceived( newval)
cpp     int set_dataReceived( int newval)
m       -(int) setDataReceived : (int) newval
pas     integer set_dataReceived( newval: LongInt): integer
vb      function set_dataReceived( ByVal newval As Integer) As Integer
cs      int set_dataReceived( int newval)
java    int set_dataReceived( int newval)
uwp     async Task<int> set_dataReceived( int newval)
py      set_dataReceived( newval)
php     function set_dataReceived( $newval)
ts      async set_dataReceived( newval: number): Promise<number>
es      async set_dataReceived( newval)
dnp     int set_dataReceived( int newval)
cp      int set_dataReceived( int newval)
cmd     YCellular target set_dataReceived newval
```

Parameters :

newval an integer corresponding to the value of the incoming data counter

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_dataSent()
cellular→setDataSent()

YCellular

Changes the value of the outgoing data counter.

```
js      function set_dataSent( newval)
cpp     int set_dataSent( int newval)
m       -(int) setDataSent : (int) newval
pas     integer set_dataSent( newval: LongInt): integer
vb      function set_dataSent( ByVal newval As Integer) As Integer
cs      int set_dataSent( int newval)
java    int set_dataSent( int newval)
uwp     async Task<int> set_dataSent( int newval)
py      set_dataSent( newval)
php     function set_dataSent( $newval)
ts      async set_dataSent( newval: number): Promise<number>
es      async set_dataSent( newval)
dnp     int set_dataSent( int newval)
cp      int set_dataSent( int newval)
cmd     YCellular target set_dataSent newval
```

Parameters :

newval an integer corresponding to the value of the outgoing data counter

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_enableData() YCellular
cellular→setEnableData()

Changes the condition for enabling IP data services (GPRS).

```
js      function set_enableData( newval)
cpp     int set_enableData( Y_ENABLEDATA_enum newval)
m       -(int) setEnableData : (Y_ENABLEDATA_enum) newval
pas     integer set_enableData( newval: Integer): integer
vb      function set_enableData( ByVal newval As Integer) As Integer
cs      int set_enableData( int newval)
java    int set_enableData( int newval)
uwp     async Task<int> set_enableData( int newval)
py      set_enableData( newval)
php     function set_enableData( $newval)
ts      async set_enableData( newval: YCellular_EnableData): Promise<number>
es      async set_enableData( newval)
dnp     int set_enableData( int newval)
cp      int set_enableData( int newval)
cmd     YCellular target set_enableData newval
```

The service can be either fully deactivated, or limited to the SIM home network, or enabled for all partner networks (roaming). Caution: enabling data services on roaming networks may cause prohibitive communication costs !

When data services are disabled, SMS are the only mean of communication. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among `YCellular.ENABLEDATA_HOMENETWORK`, `YCellular.ENABLEDATA_ROAMING`, `YCellular.ENABLEDATA_NEVER` and `YCellular.ENABLEDATA_NEUTRALITY` corresponding to the condition for enabling IP data services (GPRS)

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_lockedOperator() YCellular
cellular→setLockedOperator()

Changes the name of the cell operator to be used.

js	function **set_lockedOperator**(**newval**)
cpp	int **set_lockedOperator**(string **newval**)
m	-(int) setLockedOperator : (NSString*) **newval**
pas	integer **set_lockedOperator**(**newval**: string): integer
vb	function **set_lockedOperator**(ByVal **newval** As String) As Integer
cs	int **set_lockedOperator**(string **newval**)
java	int **set_lockedOperator**(String **newval**)
uwp	async Task<int> **set_lockedOperator**(string **newval**)
py	**set_lockedOperator**(**newval**)
php	function **set_lockedOperator**(**$newval**)
ts	async **set_lockedOperator**(**newval**: string): Promise<number>
es	async **set_lockedOperator**(**newval**)
dnp	int **set_lockedOperator**(string **newval**)
cp	int **set_lockedOperator**(string **newval**)
cmd	YCellular **target set_lockedOperator newval**

If the name is an empty string, the choice will be made automatically based on the SIM card. Otherwise, the selected operator is the only one that will be used. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the name of the cell operator to be used

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_logicalName()
cellular→setLogicalName()

YCellular

Changes the logical name of the cellular interface.

```
js      function set_logicalName( newval)
cpp     int set_logicalName( string newval)
m       -(int) setLogicalName : (NSString*) newval
pas     integer set_logicalName( newval: string): integer
vb      function set_logicalName( ByVal newval As String) As Integer
cs      int set_logicalName( string newval)
java    int set_logicalName( String newval)
uwp     async Task<int> set_logicalName( string newval)
py      set_logicalName( newval)
php     function set_logicalName( $newval)
ts      async set_logicalName( newval: string): Promise<number>
es      async set_logicalName( newval)
dnp     int set_logicalName( string newval)
cp      int set_logicalName( string newval)
cmd     YCellular target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the cellular interface.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_pin() YCellular
cellular→setPin()

Changes the PIN code used by the module to access the SIM card.

```
js      function set_pin( newval)
cpp     int set_pin( string newval)
m       -(int) setPin : (NSString*) newval
pas     integer set_pin( newval: string): integer
vb      function set_pin( ByVal newval As String) As Integer
cs      int set_pin( string newval)
java    int set_pin( String newval)
uwp     async Task<int> set_pin( string newval)
py      set_pin( newval)
php     function set_pin( $newval)
ts      async set_pin( newval: string): Promise<number>
es      async set_pin( newval)
dnp     int set_pin( string newval)
cp      int set_pin( string newval)
cmd     YCellular target set_pin newval
```

This function does not change the code on the SIM card itself, but only changes the parameter used by the device to try to get access to it. If the SIM code does not work immediately on first try, it will be automatically forgotten and the message will be set to "Enter SIM PIN". The method should then be invoked again with right correct PIN code. After three failed attempts in a row, the message is changed to "Enter SIM PUK" and the SIM card PUK code must be provided using method `sendPUK`.

Remember to call the `saveToFlash()` method of the module to save the new value in the device flash.

Parameters :

newval a string corresponding to the PIN code used by the module to access the SIM card

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_pingInterval()
cellular→setPingInterval()

YCellular

Changes the automated connectivity check interval, in seconds.

```
js      function set_pingInterval( newval)
cpp     int set_pingInterval( int newval)
m       -(int) setPingInterval : (int) newval
pas     integer set_pingInterval( newval: LongInt): integer
vb      function set_pingInterval( ByVal newval As Integer) As Integer
cs      int set_pingInterval( int newval)
java    int set_pingInterval( int newval)
uwp     async Task<int> set_pingInterval( int newval)
py      set_pingInterval( newval)
php     function set_pingInterval( $newval)
ts      async set_pingInterval( newval: number): Promise<number>
es      async set_pingInterval( newval)
dnp     int set_pingInterval( int newval)
cp      int set_pingInterval( int newval)
cmd     YCellular target set_pingInterval newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the automated connectivity check interval, in seconds

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_radioConfig() YCellular
cellular→setRadioConfig()

Changes the type of protocol used over the serial line.

```
js      function set_radioConfig( newval)
cpp     int set_radioConfig( string newval)
m       -(int) setRadioConfig : (NSString*) newval
pas     integer set_radioConfig( newval: string): integer
vb      function set_radioConfig( ByVal newval As String) As Integer
cs      int set_radioConfig( string newval)
java    int set_radioConfig( String newval)
uwp     async Task<int> set_radioConfig( string newval)
py      set_radioConfig( newval)
php     function set_radioConfig( $newval)
ts      async set_radioConfig( newval: string): Promise<number>
es      async set_radioConfig( newval)
dnp     int set_radioConfig( string newval)
cp      int set_radioConfig( string newval)
cmd     YCellular target set_radioConfig newval
```

Possible values are "Line" for ASCII messages separated by CR and/or LF, "Frame:[timeout]ms" for binary messages separated by a delay time, "Char" for a continuous ASCII stream or "Byte" for a continuous binary stream. The suffix "/[wait]ms" can be added to reduce the transmit rate so that there is always at lest the specified number of milliseconds between each bytes sent. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the type of protocol used over the serial line

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→set_userData()
cellular→setUserData()

YCellular

Stores a user context provided as argument in the userData attribute of the function.

```
js      function set_userData( data)
cpp     void set_userData( void * data)
m       -(void) setUserData : (id) data
pas     set_userData( data: Tobject)
vb      procedure set_userData( ByVal data As Object)
cs      void set_userData( object data)
java    void set_userData( Object data)
py      set_userData( data)
php     function set_userData( $data)
ts      async set_userData( data: object|null): Promise<void>
es      async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

cellular→unmuteValueCallbacks() YCellular

Re-enables the propagation of every new advertised value to the parent hub.

js	function **unmuteValueCallbacks**( )
cpp	int **unmuteValueCallbacks**( )
m	-(int) **unmuteValueCallbacks**
pas	LongInt **unmuteValueCallbacks**( ): LongInt
vb	function **unmuteValueCallbacks**( ) As Integer
cs	int **unmuteValueCallbacks**( )
java	int **unmuteValueCallbacks**( )
uwp	async Task<int> **unmuteValueCallbacks**( )
py	**unmuteValueCallbacks**( )
php	function **unmuteValueCallbacks**( )
ts	async **unmuteValueCallbacks**( ): Promise<number>
es	async **unmuteValueCallbacks**( )
dnp	int **unmuteValueCallbacks**( )
cp	int **unmuteValueCallbacks**( )
cmd	YCellular **target unmuteValueCallbacks**

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

cellular→wait_async() YCellular

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

8.3. Class YNetwork

Network interface control interface, available for instance in the YoctoHub-Ethernet, the YoctoHub-GSM-3G-NA, the YoctoHub-GSM-4G or the YoctoHub-Wireless-n

`YNetwork` objects provide access to TCP/IP parameters of Yoctopuce devices that include a built-in network interface.

In order to use the functions described here, you should include:

es	in HTML: <script src="../../lib/yocto_network.js"></script> in node.js: require('yoctolib-es2017/yocto_network.js');
js	<script type='text/javascript' src='yocto_network.js'></script>
cpp	#include "yocto_network.h"
m	#import "yocto_network.h"
pas	uses yocto_network;
vb	yocto_network.vb
cs	yocto_network.cs
java	import com.yoctopuce.YoctoAPI.YNetwork;
uwp	import com.yoctopuce.YoctoAPI.YNetwork;
py	from yocto_network import *
php	require_once('yocto_network.php');
ts	in HTML: import { YNetwork } from '../../dist/esm/yocto_network.js'; in Node.js: import { YNetwork } from 'yoctolib-cjs/yocto_network.js';
dnp	import YoctoProxyAPI.YNetworkProxy
cp	#include "yocto_network_proxy.h"
vi	YNetwork.vi
ml	import YoctoProxyAPI.YNetworkProxy

Global functions

YNetwork.FindNetwork(**func**)

Retrieves a network interface for a given identifier.

YNetwork.FindNetworkInContext(**yctx**, **func**)

Retrieves a network interface for a given identifier in a YAPI context.

YNetwork.FirstNetwork()

Starts the enumeration of network interfaces currently accessible.

YNetwork.FirstNetworkInContext(**yctx**)

Starts the enumeration of network interfaces currently accessible.

YNetwork.GetSimilarFunctions()

Enumerates all functions of type Network available on the devices currently reachable by the library, and returns their unique hardware ID.

`YNetwork` properties

network→AdminPassword *[writable]*

Hash string if a password has been set for user "admin", or an empty string otherwise.

network→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

network→CallbackCredentials *[writable]*

Hashed version of the notification callback credentials if set, or an empty string otherwise.

network→CallbackEncoding *[writable]*

Encoding standard to use for representing notification values.

network→CallbackInitialDelay *[writable]*

Initial waiting time before first callback notifications, in seconds.

network→CallbackMaxDelay *[writable]*

Waiting time between two HTTP callbacks when there is nothing new.

network→CallbackMethod *[writable]*

HTTP method used to notify callbacks for significant state changes.

network→CallbackMinDelay *[writable]*

Minimum waiting time between two HTTP callbacks, in seconds.

network→CallbackSchedule *[writable]*

HTTP callback schedule strategy, as a text string.

network→CallbackUrl *[writable]*

Callback URL to notify of significant state changes.

network→DefaultPage *[writable]*

HTML page to serve for the URL "/"" of the hub.

network→Discoverable *[writable]*

Activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

network→FunctionId *[read-only]*

Hardware identifier of the network interface, without reference to the module.

network→HardwareId *[read-only]*

Unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

network→HttpPort *[writable]*

TCP port used to serve the hub web UI.

network→IpAddress *[read-only]*

IP address currently in use by the device.

network→IsOnline *[read-only]*

Checks if the function is currently reachable.

network→LogicalName *[writable]*

Logical name of the function.

network→MacAddress *[read-only]*

MAC address of the network interface.

network→NtpServer *[writable]*

IP address of the NTP server to be used by the device.

network→PrimaryDNS *[writable]*

IP address of the primary name server to be used by the module.

network→Readiness *[read-only]*

Current established working mode of the network interface.

network→SecondaryDNS *[writable]*

IP address of the secondary name server to be used by the module.

network→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

network→UserPassword *[writable]*

Hash string if a password has been set for "user" user, or an empty string otherwise.

network→WwwWatchdogDelay *[writable]*

Allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

YNetwork methods

network→callbackLogin(username, password)

Connects to the notification callback and saves the credentials required to log into it.

network→clearCache()

Invalidates the cache.

network→describe()

Returns a short text that describes unambiguously the instance of the network interface in the form TYPE(NAME)=SERIAL.FUNCTIONID.

network→get_adminPassword()

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

network→get_advertisedValue()

Returns the current value of the network interface (no more than 6 characters).

network→get_callbackCredentials()

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

network→get_callbackEncoding()

Returns the encoding standard to use for representing notification values.

network→get_callbackInitialDelay()

Returns the initial waiting time before first callback notifications, in seconds.

network→get_callbackMaxDelay()

Returns the waiting time between two HTTP callbacks when there is nothing new.

network→get_callbackMethod()

Returns the HTTP method used to notify callbacks for significant state changes.

network→get_callbackMinDelay()

Returns the minimum waiting time between two HTTP callbacks, in seconds.

network→get_callbackSchedule()

Returns the HTTP callback schedule strategy, as a text string.

network→get_callbackUrl()

Returns the callback URL to notify of significant state changes.

network→get_defaultPage()

Returns the HTML page to serve for the URL "/"" of the hub.

network→get_discoverable()

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→get_errorMessage()

Returns the error message of the latest error with the network interface.

network→get_errorType()

Returns the numerical error code of the latest error with the network interface.

network→get_friendlyName()

Returns a global identifier of the network interface in the format MODULE_NAME.FUNCTION_NAME.

network→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

network→get_functionId()

Returns the hardware identifier of the network interface, without reference to the module.

network→get_hardwareId()

Returns the unique hardware identifier of the network interface in the form `SERIAL.FUNCTIONID`.

network→get_httpPort()

Returns the TCP port used to serve the hub web UI.

network→get_ipAddress()

Returns the IP address currently in use by the device.

network→get_ipConfig()

Returns the IP configuration of the network interface.

network→get_logicalName()

Returns the logical name of the network interface.

network→get_macAddress()

Returns the MAC address of the network interface.

network→get_module()

Gets the `YModule` object for the device on which the function is located.

network→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

network→get_ntpServer()

Returns the IP address of the NTP server to be used by the device.

network→get_poeCurrent()

Returns the current consumed by the module from Power-over-Ethernet (PoE), in milliamps.

network→get_primaryDNS()

Returns the IP address of the primary name server to be used by the module.

network→get_readiness()

Returns the current established working mode of the network interface.

network→get_router()

Returns the IP address of the router on the device subnet (default gateway).

network→get_secondaryDNS()

Returns the IP address of the secondary name server to be used by the module.

network→get_serialNumber()

Returns the serial number of the module, as set by the factory.

network→get_subnetMask()

Returns the subnet mask currently used by the device.

network→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

network→get_userPassword()

Returns a hash string if a password has been set for "user" user, or an empty string otherwise.

network→get_wwwWatchdogDelay()

Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

network→isOnline()

Checks if the network interface is currently reachable, without raising any error.

network→isOnline_async(**callback**, **context**)

Checks if the network interface is currently reachable, without raising any error (asynchronous version).

network→isReadOnly()

Test if the function is readOnly.

network→load(msValidity)

Preloads the network interface cache with a specified validity duration.

network→loadAttribute(attrName)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

network→load_async(msValidity, callback, context)

Preloads the network interface cache with a specified validity duration (asynchronous version).

network→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

network→nextNetwork()

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

network→ping(host)

Pings host to test the network connectivity.

network→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

network→set_adminPassword(newval)

Changes the password for the "admin" user.

network→set_callbackCredentials(newval)

Changes the credentials required to connect to the callback address.

network→set_callbackEncoding(newval)

Changes the encoding standard to use for representing notification values.

network→set_callbackInitialDelay(newval)

Changes the initial waiting time before first callback notifications, in seconds.

network→set_callbackMaxDelay(newval)

Changes the waiting time between two HTTP callbacks when there is nothing new.

network→set_callbackMethod(newval)

Changes the HTTP method used to notify callbacks for significant state changes.

network→set_callbackMinDelay(newval)

Changes the minimum waiting time between two HTTP callbacks, in seconds.

network→set_callbackSchedule(newval)

Changes the HTTP callback schedule strategy, as a text string.

network→set_callbackUrl(newval)

Changes the callback URL to notify significant state changes.

network→set_defaultPage(newval)

Changes the default HTML page returned by the hub.

network→set_discoverable(newval)

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→set_httpPort(newval)

Changes the the TCP port used to serve the hub web UI.

network→set_logicalName(newval)

Changes the logical name of the network interface.

network→set_ntpServer(newval)

Changes the IP address of the NTP server to be used by the module.

network→set_periodicCallbackSchedule(interval, offset)

Setup periodic HTTP callbacks (simplified function).

network→set_primaryDNS(newval)

Changes the IP address of the primary name server to be used by the module.

network→set_secondaryDNS(newval)

Changes the IP address of the secondary name server to be used by the module.

network→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

network→set_userPassword(newval)

Changes the password for the "user" user.

network→set_wwwWatchdogDelay(newval)

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

network→triggerCallback()

Trigger an HTTP callback quickly.

network→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

network→useDHCP(fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

network→useDHCPauto()

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

network→useStaticIP(ipAddress, subnetMaskLen, router)

Changes the configuration of the network interface to use a static IP address.

network→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YNetwork.FindNetwork() YNetwork
YNetwork.FindNetwork()

Retrieves a network interface for a given identifier.

```
js      function yFindNetwork( func)
cpp     YNetwork* FindNetwork( string func)
m       +(YNetwork*) FindNetwork : (NSString*) func
pas     TYNetwork yFindNetwork( func: string): TYNetwork
vb      function FindNetwork( ByVal func As String) As YNetwork
cs      static YNetwork FindNetwork( string func)
java    static YNetwork FindNetwork( String func)
uwp     static YNetwork FindNetwork( string func)
py      FindNetwork( func)
php     function FindNetwork( $func)
ts      static FindNetwork( func: string): YNetwork
es      static FindNetwork( func)
dnp     static YNetworkProxy FindNetwork( string func)
cp      static YNetworkProxy * FindNetwork( string func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the network interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YNetwork.isOnline()` to test if the network interface is indeed online at a given time. In case of ambiguity when looking for a network interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the network interface, for instance `YHUBETH1.network`.

Returns :

a `YNetwork` object allowing you to drive the network interface.

YNetwork.FindNetworkInContext() YNetwork
YNetwork.FindNetworkInContext()

Retrieves a network interface for a given identifier in a YAPI context.

```
java  static YNetwork FindNetworkInContext( YAPIContext yctx, String func)
uwp   static YNetwork FindNetworkInContext( YAPIContext yctx, string func)
ts    static FindNetworkInContext( yctx: YAPIContext, func: string): YNetwork
es    static FindNetworkInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the network interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YNetwork.isOnline()` to test if the network interface is indeed online at a given time. In case of ambiguity when looking for a network interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the network interface, for instance `YHUBETH1.network`.

Returns :

a `YNetwork` object allowing you to drive the network interface.

YNetwork.FirstNetwork() YNetwork
YNetwork.FirstNetwork()

Starts the enumeration of network interfaces currently accessible.

js	function **yFirstNetwork**( )
cpp	YNetwork * **FirstNetwork**( )
m	+(YNetwork*) **FirstNetwork**
pas	TYNetwork **yFirstNetwork**( ): TYNetwork
vb	function **FirstNetwork**( ) As YNetwork
cs	static YNetwork **FirstNetwork**( )
java	static YNetwork **FirstNetwork**( )
uwp	static YNetwork **FirstNetwork**( )
py	**FirstNetwork**( )
php	function **FirstNetwork**( )
ts	static **FirstNetwork**( ): YNetwork | null
es	static **FirstNetwork**( )

Use the method `YNetwork.nextNetwork()` to iterate on next network interfaces.

Returns :

a pointer to a `YNetwork` object, corresponding to the first network interface currently online, or a `null` pointer if there are none.

YNetwork.FirstNetworkInContext() YNetwork
YNetwork.FirstNetworkInContext()

Starts the enumeration of network interfaces currently accessible.

java	static YNetwork **FirstNetworkInContext**(YAPIContext **yctx**)
uwp	static YNetwork **FirstNetworkInContext**(YAPIContext **yctx**)
ts	static **FirstNetworkInContext**(**yctx**: YAPIContext): YNetwork | null
es	static **FirstNetworkInContext**(**yctx**)

Use the method `YNetwork.nextNetwork()` to iterate on next network interfaces.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YNetwork` object, corresponding to the first network interface currently online, or a `null` pointer if there are none.

YNetwork.GetSimilarFunctions() YNetwork
YNetwork.GetSimilarFunctions()

Enumerates all functions of type Network available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YNetwork.FindNetwork` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

network→AdminPassword YNetwork

Hash string if a password has been set for user "admin", or an empty string otherwise.

dnp string **AdminPassword**

Writable. Changes the password for the "admin" user. This password becomes instantly required to perform any change of the module state. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→AdvertisedValue — YNetwork

Short string representing the current state of the function.

dnp string **AdvertisedValue**

network→CallbackCredentials YNetwork

Hashed version of the notification callback credentials if set, or an empty string otherwise.

dnp string **CallbackCredentials**

Writable. Changes the credentials required to connect to the callback address. The credentials must be provided as returned by function `get_callbackCredentials`, in the form `username:hash`. The method used to compute the hash varies according to the the authentication scheme implemented by the callback, For Basic authentication, the hash is the MD5 of the string `username:password`. For Digest authentication, the hash is the MD5 of the string `username:realm:password`. For a simpler way to configure callback credentials, use function `callbackLogin` instead. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackEncoding YNetwork

Encoding standard to use for representing notification values.

dnp int **CallbackEncoding**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackInitialDelay — YNetwork

Initial waiting time before first callback notifications, in seconds.

dnp int **CallbackInitialDelay**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackMaxDelay YNetwork

Waiting time between two HTTP callbacks when there is nothing new.

dnp int **CallbackMaxDelay**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackMethod YNetwork

HTTP method used to notify callbacks for significant state changes.

dnp int **CallbackMethod**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackMinDelay YNetwork

Minimum waiting time between two HTTP callbacks, in seconds.

dnp int **CallbackMinDelay**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackSchedule YNetwork

HTTP callback schedule strategy, as a text string.

dnp string **CallbackSchedule**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→CallbackUrl YNetwork

Callback URL to notify of significant state changes.

dnp string **CallbackUrl**

Writable. Changes the callback URL to notify significant state changes. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→DefaultPage — YNetwork

HTML page to serve for the URL "/"" of the hub.

dnp string **DefaultPage**

Writable. Changes the default HTML page returned by the hub. If not value are set the hub return "index.html" which is the web interface of the hub. It is possible to change this page for file that has been uploaded on the hub. The maximum filename size is 15 characters. When you change this parameter, remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→Discoverable YNetwork

Activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

dnp int **Discoverable**

Writable. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→FriendlyName — YNetwork

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

network→FunctionId YNetwork

Hardware identifier of the network interface, without reference to the module.

dnp string **FunctionId**

For example `relay1`

network→HardwareId — YNetwork

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

network→HttpPort YNetwork

TCP port used to serve the hub web UI.

dnp int **HttpPort**

Writable. Changes the the TCP port used to serve the hub web UI. The default value is port 80, which is the default for all Web servers. Regardless of the value set here, the hub will always reply on port 4444, which is used by default by Yoctopuce API library. When you change this parameter, remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→IpAddress — YNetwork

IP address currently in use by the device.

dnp string **IpAddress**

The address may have been configured statically, or provided by a DHCP server.

network→IsOnline YNetwork

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

network→LogicalName YNetwork

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→MacAddress YNetwork

MAC address of the network interface.

dnp string **MacAddress**

The MAC address is also available on a sticker on the module, in both numeric and barcode forms.

network→NtpServer YNetwork

IP address of the NTP server to be used by the device.

dnp string **NtpServer**

Writable. Changes the IP address of the NTP server to be used by the module. Use an empty string to restore the factory set address. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

network→PrimaryDNS YNetwork

IP address of the primary name server to be used by the module.

dnp string **PrimaryDNS**

Writable. When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

network→Readiness YNetwork

Current established working mode of the network interface.

dnp int **Readiness**

Level zero (DOWN_0) means that no hardware link has been detected. Either there is no signal on the network cable, or the selected wireless access point cannot be detected. Level 1 (LIVE_1) is reached when the network is detected, but is not yet connected. For a wireless network, this shows that the requested SSID is present. Level 2 (LINK_2) is reached when the hardware connection is established. For a wired network connection, level 2 means that the cable is attached at both ends. For a connection to a wireless access point, it shows that the security parameters are properly configured. For an ad-hoc wireless connection, it means that there is at least one other device connected on the ad-hoc network. Level 3 (DHCP_3) is reached when an IP address has been obtained using DHCP. Level 4 (DNS_4) is reached when the DNS server is reachable on the network. Level 5 (WWW_5) is reached when global connectivity is demonstrated by properly loading the current time from an NTP server.

network→SecondaryDNS YNetwork

IP address of the secondary name server to be used by the module.

dnp string **SecondaryDNS**

Writable. When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

network→SerialNumber YNetwork

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

network→UserPassword — YNetwork

Hash string if a password has been set for "user" user, or an empty string otherwise.

dnp string **UserPassword**

Writable. Changes the password for the "user" user. This password becomes instantly required to perform any use of the module. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→WwwWatchdogDelay YNetwork

Allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

dnp int **WwwWatchdogDelay**

A zero value disables automated reboot in case of Internet connectivity loss.

Writable. A zero value disables automated reboot in case of Internet connectivity loss. The smallest valid non-zero timeout is 90 seconds. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

network→callbackLogin() YNetwork

Connects to the notification callback and saves the credentials required to log into it.

```
js    function callbackLogin( username, password)
cpp   int callbackLogin( string username, string password)
m     -(int) callbackLogin : (NSString*) username
                           : (NSString*) password
pas   integer callbackLogin( username: string, password: string): integer
vb    function callbackLogin( ByVal username As String,
                              ByVal password As String) As Integer
cs    int callbackLogin( string username, string password)
java  int callbackLogin( String username, String password)
py    callbackLogin( username, password)
php   function callbackLogin( $username, $password)
ts    async callbackLogin( username: string, password: string): Promise<number>
es    async callbackLogin( username, password)
dnp   int callbackLogin( string username, string password)
cp    int callbackLogin( string username, string password)
cmd   YNetwork target callbackLogin username password
```

The password is not stored into the module, only a hashed copy of the credentials are saved. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

username username required to log to the callback

password password required to log to the callback

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→clearCache() YNetwork

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the network interface attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

network→describe() YNetwork

Returns a short text that describes unambiguously the instance of the network interface in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the network interface (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

network→get_adminPassword() YNetwork
network→adminPassword()

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

```
js      function get_adminPassword( )
cpp     string get_adminPassword( )
m       -(NSString*) adminPassword
pas     string get_adminPassword( ): string
vb      function get_adminPassword( ) As String
cs      string get_adminPassword( )
java    String get_adminPassword( )
uwp     async Task<string> get_adminPassword( )
py      get_adminPassword( )
php     function get_adminPassword( )
ts      async get_adminPassword( ): Promise<string>
es      async get_adminPassword( )
dnp     string get_adminPassword( )
cp      string get_adminPassword( )
cmd     YNetwork target get_adminPassword
```

Returns :

a string corresponding to a hash string if a password has been set for user "admin", or an empty string otherwise

On failure, throws an exception or returns `YNetwork.ADMINPASSWORD_INVALID`.

network→get_advertisedValue()
network→advertisedValue()

YNetwork

Returns the current value of the network interface (no more than 6 characters).

js	function **get_advertisedValue**( )
cpp	string **get_advertisedValue**( )
m	-(NSString*) advertisedValue
pas	string **get_advertisedValue**( ): string
vb	function **get_advertisedValue**( ) As String
cs	string **get_advertisedValue**( )
java	String **get_advertisedValue**( )
uwp	async Task<string> **get_advertisedValue**( )
py	**get_advertisedValue**( )
php	function **get_advertisedValue**( )
ts	async **get_advertisedValue**( ): Promise<string>
es	async **get_advertisedValue**( )
dnp	string **get_advertisedValue**( )
cp	string **get_advertisedValue**( )
cmd	YNetwork **target get_advertisedValue**

Returns :

a string corresponding to the current value of the network interface (no more than 6 characters).

On failure, throws an exception or returns `YNetwork.ADVERTISEDVALUE_INVALID`.

network→get_callbackCredentials() YNetwork
network→callbackCredentials()

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

js	function **get_callbackCredentials**( )
cpp	string **get_callbackCredentials**( )
m	-(NSString*) callbackCredentials
pas	string **get_callbackCredentials**( ): string
vb	function **get_callbackCredentials**( ) As String
cs	string **get_callbackCredentials**( )
java	String **get_callbackCredentials**( )
uwp	async Task<string> **get_callbackCredentials**( )
py	**get_callbackCredentials**( )
php	function **get_callbackCredentials**( )
ts	async **get_callbackCredentials**( ): Promise<string>
es	async **get_callbackCredentials**( )
dnp	string **get_callbackCredentials**( )
cp	string **get_callbackCredentials**( )
cmd	YNetwork **target get_callbackCredentials**

Returns :

a string corresponding to a hashed version of the notification callback credentials if set, or an empty string otherwise

On failure, throws an exception or returns `YNetwork.CALLBACKCREDENTIALS_INVALID`.

network→get_callbackEncoding() YNetwork
network→callbackEncoding()

Returns the encoding standard to use for representing notification values.

js	function **get_callbackEncoding**( )
cpp	Y_CALLBACKENCODING_enum **get_callbackEncoding**( )
m	-(Y_CALLBACKENCODING_enum) callbackEncoding
pas	Integer **get_callbackEncoding**( ): Integer
vb	function **get_callbackEncoding**( ) As Integer
cs	int **get_callbackEncoding**( )
java	int **get_callbackEncoding**( )
uwp	async Task<int> **get_callbackEncoding**( )
py	**get_callbackEncoding**( )
php	function **get_callbackEncoding**( )
ts	async **get_callbackEncoding**( ): Promise<YNetwork_CallbackEncoding>
es	async **get_callbackEncoding**( )
dnp	int **get_callbackEncoding**( )
cp	int **get_callbackEncoding**( )
cmd	YNetwork **target get_callbackEncoding**

Returns :

a value among `YNetwork.CALLBACKENCODING_FORM`, `YNetwork.CALLBACKENCODING_JSON`, `YNetwork.CALLBACKENCODING_JSON_ARRAY`, `YNetwork.CALLBACKENCODING_CSV`, `YNetwork.CALLBACKENCODING_YOCTO_API`, `YNetwork.CALLBACKENCODING_JSON_NUM`, `YNetwork.CALLBACKENCODING_EMONCMS`, `YNetwork.CALLBACKENCODING_AZURE`, `YNetwork.CALLBACKENCODING_INFLUXDB`, `YNetwork.CALLBACKENCODING_MQTT`, `YNetwork.CALLBACKENCODING_YOCTO_API_JZON`, `YNetwork.CALLBACKENCODING_PRTG` and `YNetwork.CALLBACKENCODING_INFLUXDB_V2` corresponding to the encoding standard to use for representing notification values

On failure, throws an exception or returns `YNetwork.CALLBACKENCODING_INVALID`.

network→get_callbackInitialDelay()
network→callbackInitialDelay()

YNetwork

Returns the initial waiting time before first callback notifications, in seconds.

js	function **get_callbackInitialDelay**( )
cpp	int **get_callbackInitialDelay**( )
m	-(int) callbackInitialDelay
pas	LongInt **get_callbackInitialDelay**( ): LongInt
vb	function **get_callbackInitialDelay**( ) As Integer
cs	int **get_callbackInitialDelay**( )
java	int **get_callbackInitialDelay**( )
uwp	async Task<int> **get_callbackInitialDelay**( )
py	**get_callbackInitialDelay**( )
php	function **get_callbackInitialDelay**( )
ts	async **get_callbackInitialDelay**( ): Promise<number>
es	async **get_callbackInitialDelay**( )
dnp	int **get_callbackInitialDelay**( )
cp	int **get_callbackInitialDelay**( )
cmd	YNetwork **target get_callbackInitialDelay**

Returns :

an integer corresponding to the initial waiting time before first callback notifications, in seconds

On failure, throws an exception or returns `YNetwork.CALLBACKINITIALDELAY_INVALID`.

network→get_callbackMaxDelay() YNetwork
network→callbackMaxDelay()

Returns the waiting time between two HTTP callbacks when there is nothing new.

js	function **get_callbackMaxDelay**( )
cpp	int **get_callbackMaxDelay**( )
m	-(int) callbackMaxDelay
pas	LongInt **get_callbackMaxDelay**( ): LongInt
vb	function **get_callbackMaxDelay**( ) As Integer
cs	int **get_callbackMaxDelay**( )
java	int **get_callbackMaxDelay**( )
uwp	async Task<int> **get_callbackMaxDelay**( )
py	**get_callbackMaxDelay**( )
php	function **get_callbackMaxDelay**( )
ts	async **get_callbackMaxDelay**( ): Promise<number>
es	async **get_callbackMaxDelay**( )
dnp	int **get_callbackMaxDelay**( )
cp	int **get_callbackMaxDelay**( )
cmd	YNetwork **target get_callbackMaxDelay**

Returns :

an integer corresponding to the waiting time between two HTTP callbacks when there is nothing new

On failure, throws an exception or returns `YNetwork.CALLBACKMAXDELAY_INVALID`.

network→get_callbackMethod() YNetwork
network→callbackMethod()

Returns the HTTP method used to notify callbacks for significant state changes.

js	function **get_callbackMethod**( )
cpp	Y_CALLBACKMETHOD_enum **get_callbackMethod**( )
m	-(Y_CALLBACKMETHOD_enum) callbackMethod
pas	Integer **get_callbackMethod**( ): Integer
vb	function **get_callbackMethod**( ) As Integer
cs	int **get_callbackMethod**( )
java	int **get_callbackMethod**( )
uwp	async Task<int> **get_callbackMethod**( )
py	**get_callbackMethod**( )
php	function **get_callbackMethod**( )
ts	async **get_callbackMethod**( ): Promise<YNetwork_CallbackMethod>
es	async **get_callbackMethod**( )
dnp	int **get_callbackMethod**( )
cp	int **get_callbackMethod**( )
cmd	YNetwork **target get_callbackMethod**

Returns :

a value among `YNetwork.CALLBACKMETHOD_POST`, `YNetwork.CALLBACKMETHOD_GET` and `YNetwork.CALLBACKMETHOD_PUT` corresponding to the HTTP method used to notify callbacks for significant state changes

On failure, throws an exception or returns `YNetwork.CALLBACKMETHOD_INVALID`.

network→get_callbackMinDelay() YNetwork
network→callbackMinDelay()

Returns the minimum waiting time between two HTTP callbacks, in seconds.

```
js      function get_callbackMinDelay( )
cpp     int get_callbackMinDelay( )
m       -(int) callbackMinDelay
pas     LongInt get_callbackMinDelay( ): LongInt
vb      function get_callbackMinDelay( ) As Integer
cs      int get_callbackMinDelay( )
java    int get_callbackMinDelay( )
uwp     async Task<int> get_callbackMinDelay( )
py      get_callbackMinDelay( )
php     function get_callbackMinDelay( )
ts      async get_callbackMinDelay( ): Promise<number>
es      async get_callbackMinDelay( )
dnp     int get_callbackMinDelay( )
cp      int get_callbackMinDelay( )
cmd     YNetwork target get_callbackMinDelay
```

Returns :

an integer corresponding to the minimum waiting time between two HTTP callbacks, in seconds

On failure, throws an exception or returns `YNetwork.CALLBACKMINDELAY_INVALID`.

network→get_callbackSchedule()
network→callbackSchedule()

YNetwork

Returns the HTTP callback schedule strategy, as a text string.

```
js      function get_callbackSchedule( )
cpp     string get_callbackSchedule( )
m       -(NSString*) callbackSchedule
pas     string get_callbackSchedule( ): string
vb      function get_callbackSchedule( ) As String
cs      string get_callbackSchedule( )
java    String get_callbackSchedule( )
uwp     async Task<string> get_callbackSchedule( )
py      get_callbackSchedule( )
php     function get_callbackSchedule( )
ts      async get_callbackSchedule( ): Promise<string>
es      async get_callbackSchedule( )
dnp     string get_callbackSchedule( )
cp      string get_callbackSchedule( )
cmd     YNetwork target get_callbackSchedule
```

Returns :
a string corresponding to the HTTP callback schedule strategy, as a text string

On failure, throws an exception or returns `YNetwork.CALLBACKSCHEDULE_INVALID`.

network→get_callbackUrl() YNetwork
network→callbackUrl()

Returns the callback URL to notify of significant state changes.

js	function **get_callbackUrl**( )
cpp	string **get_callbackUrl**( )
m	-(NSString*) callbackUrl
pas	string **get_callbackUrl**( ): string
vb	function **get_callbackUrl**( ) As String
cs	string **get_callbackUrl**( )
java	String **get_callbackUrl**( )
uwp	async Task<string> **get_callbackUrl**( )
py	**get_callbackUrl**( )
php	function **get_callbackUrl**( )
ts	async **get_callbackUrl**( ): Promise<string>
es	async **get_callbackUrl**( )
dnp	string **get_callbackUrl**( )
cp	string **get_callbackUrl**( )
cmd	YNetwork **target get_callbackUrl**

Returns :
a string corresponding to the callback URL to notify of significant state changes

On failure, throws an exception or returns `YNetwork.CALLBACKURL_INVALID`.

network→get_defaultPage()
network→defaultPage()

YNetwork

Returns the HTML page to serve for the URL "/"" of the hub.

js	function **get_defaultPage**( )
cpp	string **get_defaultPage**( )
m	-(NSString*) defaultPage
pas	string **get_defaultPage**( ): string
vb	function **get_defaultPage**( ) As String
cs	string **get_defaultPage**( )
java	String **get_defaultPage**( )
uwp	async Task<string> **get_defaultPage**( )
py	**get_defaultPage**( )
php	function **get_defaultPage**( )
ts	async **get_defaultPage**( ): Promise<string>
es	async **get_defaultPage**( )
dnp	string **get_defaultPage**( )
cp	string **get_defaultPage**( )
cmd	YNetwork **target get_defaultPage**

Returns :
a string corresponding to the HTML page to serve for the URL "/"" of the hub

On failure, throws an exception or returns `YNetwork.DEFAULTPAGE_INVALID`.

network→get_discoverable()
network→discoverable()

YNetwork

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

js	function **get_discoverable**( )
cpp	Y_DISCOVERABLE_enum **get_discoverable**( )
m	-(Y_DISCOVERABLE_enum) discoverable
pas	Integer **get_discoverable**( ): Integer
vb	function **get_discoverable**( ) As Integer
cs	int **get_discoverable**( )
java	int **get_discoverable**( )
uwp	async Task<int> **get_discoverable**( )
py	**get_discoverable**( )
php	function **get_discoverable**( )
ts	async **get_discoverable**( ): Promise<YNetwork_Discoverable>
es	async **get_discoverable**( )
dnp	int **get_discoverable**( )
cp	int **get_discoverable**( )
cmd	YNetwork **target** **get_discoverable**

Returns :

either `YNetwork.DISCOVERABLE_FALSE` or `YNetwork.DISCOVERABLE_TRUE`, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

On failure, throws an exception or returns `YNetwork.DISCOVERABLE_INVALID`.

network→get_errorMessage()
network→errorMessage()

YNetwork

Returns the error message of the latest error with the network interface.

```
js      function get_errorMessage( )
cpp     string get_errorMessage( )
m       -(NSString*) errorMessage
pas     string get_errorMessage( ): string
vb      function get_errorMessage( ) As String
cs      string get_errorMessage( )
java    String get_errorMessage( )
py      get_errorMessage( )
php     function get_errorMessage( )
ts      get_errorMessage( ): string
es      get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the network interface object

network→get_errorType()
network→errorType()

YNetwork

Returns the numerical error code of the latest error with the network interface.

js	function **get_errorType**( )
cpp	YRETCODE **get_errorType**( )
m	-(YRETCODE) errorType
pas	YRETCODE **get_errorType**( ): YRETCODE
vb	function **get_errorType**( ) As YRETCODE
cs	YRETCODE **get_errorType**( )
java	int **get_errorType**( )
py	**get_errorType**( )
php	function **get_errorType**( )
ts	**get_errorType**( ): number
es	**get_errorType**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the network interface object

network→get_friendlyName()
network→friendlyName()

YNetwork

Returns a global identifier of the network interface in the format MODULE_NAME.FUNCTION_NAME.

```
js      function get_friendlyName( )
cpp     string get_friendlyName( )
m       -(NSString*) friendlyName
cs      string get_friendlyName( )
java    String get_friendlyName( )
py      get_friendlyName( )
php     function get_friendlyName( )
ts      async get_friendlyName( ): Promise<string>
es      async get_friendlyName( )
dnp     string get_friendlyName( )
cp      string get_friendlyName( )
```

The returned string uses the logical names of the module and of the network interface if they are defined, otherwise the serial number of the module and the hardware identifier of the network interface (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the network interface using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `YNetwork.FRIENDLYNAME_INVALID`.

network→get_functionDescriptor() YNetwork
network→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

network→get_functionId()
network→functionId()

YNetwork

Returns the hardware identifier of the network interface, without reference to the module.

```
js      function get_functionId( )
cpp     string get_functionId( )
m       -(NSString*) functionId
vb      function get_functionId( ) As String
cs      string get_functionId( )
java    String get_functionId( )
py      get_functionId( )
php     function get_functionId( )
ts      async get_functionId( ): Promise<string>
es      async get_functionId( )
dnp     string get_functionId( )
cp      string get_functionId( )
```

For example `relay1`

Returns :
a string that identifies the network interface (ex: `relay1`)

On failure, throws an exception or returns `YNetwork.FUNCTIONID_INVALID`.

network→get_hardwareId() YNetwork
network→hardwareId()

Returns the unique hardware identifier of the network interface in the form `SERIAL.FUNCTIONID`.

```
js      function get_hardwareId( )
cpp     string get_hardwareId( )
m       -(NSString*) hardwareId
vb      function get_hardwareId( ) As String
cs      string get_hardwareId( )
java    String get_hardwareId( )
py      get_hardwareId( )
php     function get_hardwareId( )
ts      async get_hardwareId( ): Promise<string>
es      async get_hardwareId( )
dnp     string get_hardwareId( )
cp      string get_hardwareId( )
```

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the network interface (for example `RELAYLO1-123456.relay1`).

Returns :

a string that uniquely identifies the network interface (ex: `RELAYLO1-123456.relay1`)

On failure, throws an exception or returns `YNetwork.HARDWAREID_INVALID`.

network→get_httpPort()
network→httpPort()

YNetwork

Returns the TCP port used to serve the hub web UI.

```
js      function get_httpPort( )
cpp     int get_httpPort( )
m       -(int) httpPort
pas     LongInt get_httpPort( ): LongInt
vb      function get_httpPort( ) As Integer
cs      int get_httpPort( )
java    int get_httpPort( )
uwp     async Task<int> get_httpPort( )
py      get_httpPort( )
php     function get_httpPort( )
ts      async get_httpPort( ): Promise<number>
es      async get_httpPort( )
dnp     int get_httpPort( )
cp      int get_httpPort( )
cmd     YNetwork target get_httpPort
```

Returns :
an integer corresponding to the TCP port used to serve the hub web UI

On failure, throws an exception or returns `YNetwork.HTTPPORT_INVALID`.

network→get_ipAddress()
network→ipAddress()

YNetwork

Returns the IP address currently in use by the device.

js	function **get_ipAddress**( )
cpp	string **get_ipAddress**( )
m	-(NSString*) ipAddress
pas	string **get_ipAddress**( ): string
vb	function **get_ipAddress**( ) As String
cs	string **get_ipAddress**( )
java	String **get_ipAddress**( )
uwp	async Task<string> **get_ipAddress**( )
py	**get_ipAddress**( )
php	function **get_ipAddress**( )
ts	async **get_ipAddress**( ): Promise<string>
es	async **get_ipAddress**( )
dnp	string **get_ipAddress**( )
cp	string **get_ipAddress**( )
cmd	YNetwork **target get_ipAddress**

The address may have been configured statically, or provided by a DHCP server.

Returns :
a string corresponding to the IP address currently in use by the device

On failure, throws an exception or returns `YNetwork.IPADDRESS_INVALID`.

network→get_ipConfig()
network→ipConfig()

YNetwork

Returns the IP configuration of the network interface.

```
js      function get_ipConfig( )
cpp     string get_ipConfig( )
m       -(NSString*) ipConfig
pas     string get_ipConfig( ): string
vb      function get_ipConfig( ) As String
cs      string get_ipConfig( )
java    String get_ipConfig( )
uwp     async Task<string> get_ipConfig( )
py      get_ipConfig( )
php     function get_ipConfig( )
ts      async get_ipConfig( ): Promise<string>
es      async get_ipConfig( )
dnp     string get_ipConfig( )
cp      string get_ipConfig( )
cmd     YNetwork target get_ipConfig
```

If the network interface is setup to use a static IP address, the string starts with "STATIC:" and is followed by three parameters, separated by "/". The first is the device IP address, followed by the subnet mask length, and finally the router IP address (default gateway). For instance: "STATIC:192.168.1.14/16/192.168.1.1"

If the network interface is configured to receive its IP from a DHCP server, the string start with "DHCP:" and is followed by three parameters separated by "/". The first is the fallback IP address, then the fallback subnet mask length and finally the fallback router IP address. These three parameters are used when no DHCP reply is received.

Returns :
a string corresponding to the IP configuration of the network interface

On failure, throws an exception or returns `YNetwork.IPCONFIG_INVALID`.

network→get_logicalName()
network→logicalName()

YNetwork

Returns the logical name of the network interface.

js	function **get_logicalName**( )
cpp	string **get_logicalName**( )
m	-(NSString*) logicalName
pas	string **get_logicalName**( ): string
vb	function **get_logicalName**( ) As String
cs	string **get_logicalName**( )
java	String **get_logicalName**( )
uwp	async Task<string> **get_logicalName**( )
py	**get_logicalName**( )
php	function **get_logicalName**( )
ts	async **get_logicalName**( ): Promise<string>
es	async **get_logicalName**( )
dnp	string **get_logicalName**( )
cp	string **get_logicalName**( )
cmd	YNetwork **target get_logicalName**

Returns :

a string corresponding to the logical name of the network interface.

On failure, throws an exception or returns `YNetwork.LOGICALNAME_INVALID`.

network→get_macAddress()
network→macAddress()

YNetwork

Returns the MAC address of the network interface.

js	function **get_macAddress**( )
cpp	string **get_macAddress**( )
m	-(NSString*) macAddress
pas	string **get_macAddress**( ): string
vb	function **get_macAddress**( ) As String
cs	string **get_macAddress**( )
java	String **get_macAddress**( )
uwp	async Task<string> **get_macAddress**( )
py	**get_macAddress**( )
php	function **get_macAddress**( )
ts	async **get_macAddress**( ): Promise<string>
es	async **get_macAddress**( )
dnp	string **get_macAddress**( )
cp	string **get_macAddress**( )
cmd	YNetwork **target get_macAddress**

The MAC address is also available on a sticker on the module, in both numeric and barcode forms.

Returns :
a string corresponding to the MAC address of the network interface

On failure, throws an exception or returns `YNetwork.MACADDRESS_INVALID`.

network→get_module()
network→module()

YNetwork

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

network→get_module_async() YNetwork
network→module_async()

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→get_ntpServer()
network→ntpServer()

YNetwork

Returns the IP address of the NTP server to be used by the device.

```
js      function get_ntpServer( )
cpp     string get_ntpServer( )
m       -(NSString*) ntpServer
pas     string get_ntpServer( ): string
vb      function get_ntpServer( ) As String
cs      string get_ntpServer( )
java    String get_ntpServer( )
uwp     async Task<string> get_ntpServer( )
py      get_ntpServer( )
php     function get_ntpServer( )
ts      async get_ntpServer( ): Promise<string>
es      async get_ntpServer( )
dnp     string get_ntpServer( )
cp      string get_ntpServer( )
cmd     YNetwork target get_ntpServer
```

Returns :

a string corresponding to the IP address of the NTP server to be used by the device

On failure, throws an exception or returns `YNetwork.NTPSERVER_INVALID`.

network→get_poeCurrent() YNetwork
network→poeCurrent()

Returns the current consumed by the module from Power-over-Ethernet (PoE), in milliamps.

```
js      function get_poeCurrent( )
cpp     int get_poeCurrent( )
m       -(int) poeCurrent
pas     LongInt get_poeCurrent( ): LongInt
vb      function get_poeCurrent( ) As Integer
cs      int get_poeCurrent( )
java    int get_poeCurrent( )
uwp     async Task<int> get_poeCurrent( )
py      get_poeCurrent( )
php     function get_poeCurrent( )
ts      async get_poeCurrent( ): Promise<number>
es      async get_poeCurrent( )
dnp     int get_poeCurrent( )
cp      int get_poeCurrent( )
cmd     YNetwork target get_poeCurrent
```

The current consumption is measured after converting PoE source to 5 Volt, and should never exceed 1800 mA.

Returns :

an integer corresponding to the current consumed by the module from Power-over-Ethernet (PoE), in milliamps

On failure, throws an exception or returns `YNetwork.POECURRENT_INVALID`.

network→get_primaryDNS() YNetwork
network→primaryDNS()

Returns the IP address of the primary name server to be used by the module.

```
js      function get_primaryDNS( )
cpp     string get_primaryDNS( )
m       -(NSString*) primaryDNS
pas     string get_primaryDNS( ): string
vb      function get_primaryDNS( ) As String
cs      string get_primaryDNS( )
java    String get_primaryDNS( )
uwp     async Task<string> get_primaryDNS( )
py      get_primaryDNS( )
php     function get_primaryDNS( )
ts      async get_primaryDNS( ): Promise<string>
es      async get_primaryDNS( )
dnp     string get_primaryDNS( )
cp      string get_primaryDNS( )
cmd     YNetwork target get_primaryDNS
```

Returns :

a string corresponding to the IP address of the primary name server to be used by the module

On failure, throws an exception or returns `YNetwork.PRIMARYDNS_INVALID`.

network→get_readiness()
network→readiness()

YNetwork

Returns the current established working mode of the network interface.

```
js      function get_readiness( )
cpp     Y_READINESS_enum get_readiness( )
m       -(Y_READINESS_enum) readiness
pas     Integer get_readiness( ): Integer
vb      function get_readiness( ) As Integer
cs      int get_readiness( )
java    int get_readiness( )
uwp     async Task<int> get_readiness( )
py      get_readiness( )
php     function get_readiness( )
ts      async get_readiness( ): Promise<YNetwork_Readiness>
es      async get_readiness( )
dnp     int get_readiness( )
cp      int get_readiness( )
cmd     YNetwork target get_readiness
```

Level zero (DOWN_0) means that no hardware link has been detected. Either there is no signal on the network cable, or the selected wireless access point cannot be detected. Level 1 (LIVE_1) is reached when the network is detected, but is not yet connected. For a wireless network, this shows that the requested SSID is present. Level 2 (LINK_2) is reached when the hardware connection is established. For a wired network connection, level 2 means that the cable is attached at both ends. For a connection to a wireless access point, it shows that the security parameters are properly configured. For an ad-hoc wireless connection, it means that there is at least one other device connected on the ad-hoc network. Level 3 (DHCP_3) is reached when an IP address has been obtained using DHCP. Level 4 (DNS_4) is reached when the DNS server is reachable on the network. Level 5 (WWW_5) is reached when global connectivity is demonstrated by properly loading the current time from an NTP server.

Returns :

a value among `YNetwork.READINESS_DOWN`, `YNetwork.READINESS_EXISTS`, `YNetwork.READINESS_LINKED`, `YNetwork.READINESS_LAN_OK` and `YNetwork.READINESS_WWW_OK` corresponding to the current established working mode of the network interface

On failure, throws an exception or returns `YNetwork.READINESS_INVALID`.

network→get_router()
network→router()

YNetwork

Returns the IP address of the router on the device subnet (default gateway).

```
js      function get_router( )
cpp     string get_router( )
m       -(NSString*) router
pas     string get_router( ): string
vb      function get_router( ) As String
cs      string get_router( )
java    String get_router( )
uwp     async Task<string> get_router( )
py      get_router( )
php     function get_router( )
ts      async get_router( ): Promise<string>
es      async get_router( )
dnp     string get_router( )
cp      string get_router( )
cmd     YNetwork target get_router
```

Returns :

a string corresponding to the IP address of the router on the device subnet (default gateway)

On failure, throws an exception or returns `YNetwork.ROUTER_INVALID`.

network→get_secondaryDNS()
network→secondaryDNS()

YNetwork

Returns the IP address of the secondary name server to be used by the module.

```
js      function get_secondaryDNS( )
cpp     string get_secondaryDNS( )
m       -(NSString*) secondaryDNS
pas     string get_secondaryDNS( ): string
vb      function get_secondaryDNS( ) As String
cs      string get_secondaryDNS( )
java    String get_secondaryDNS( )
uwp     async Task<string> get_secondaryDNS( )
py      get_secondaryDNS( )
php     function get_secondaryDNS( )
ts      async get_secondaryDNS( ): Promise<string>
es      async get_secondaryDNS( )
dnp     string get_secondaryDNS( )
cp      string get_secondaryDNS( )
cmd     YNetwork target get_secondaryDNS
```

Returns :

a string corresponding to the IP address of the secondary name server to be used by the module

On failure, throws an exception or returns `YNetwork.SECONDARYDNS_INVALID`.

network→get_serialNumber() YNetwork
network→serialNumber()

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YNetwork target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

network→get_subnetMask()
network→subnetMask()

YNetwork

Returns the subnet mask currently used by the device.

```
js      function get_subnetMask( )
cpp     string get_subnetMask( )
m       -(NSString*) subnetMask
pas     string get_subnetMask( ): string
vb      function get_subnetMask( ) As String
cs      string get_subnetMask( )
java    String get_subnetMask( )
uwp     async Task<string> get_subnetMask( )
py      get_subnetMask( )
php     function get_subnetMask( )
ts      async get_subnetMask( ): Promise<string>
es      async get_subnetMask( )
dnp     string get_subnetMask( )
cp      string get_subnetMask( )
cmd     YNetwork target get_subnetMask
```

Returns :

a string corresponding to the subnet mask currently used by the device

On failure, throws an exception or returns `YNetwork.SUBNETMASK_INVALID`.

network→get_userData()
network→userData()

YNetwork

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

network→get_userPassword() YNetwork
network→userPassword()

Returns a hash string if a password has been set for "user" user, or an empty string otherwise.

```
js      function get_userPassword( )
cpp     string get_userPassword( )
m       -(NSString*) userPassword
pas     string get_userPassword( ): string
vb      function get_userPassword( ) As String
cs      string get_userPassword( )
java    String get_userPassword( )
uwp     async Task<string> get_userPassword( )
py      get_userPassword( )
php     function get_userPassword( )
ts      async get_userPassword( ): Promise<string>
es      async get_userPassword( )
dnp     string get_userPassword( )
cp      string get_userPassword( )
cmd     YNetwork target get_userPassword
```

Returns :

a string corresponding to a hash string if a password has been set for "user" user, or an empty string otherwise

On failure, throws an exception or returns `YNetwork.USERPASSWORD_INVALID`.

network→get_wwwWatchdogDelay() YNetwork
network→wwwWatchdogDelay()

Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

```
js      function get_wwwWatchdogDelay( )
cpp     int get_wwwWatchdogDelay( )
m       -(int) wwwWatchdogDelay
pas     LongInt get_wwwWatchdogDelay( ): LongInt
vb      function get_wwwWatchdogDelay( ) As Integer
cs      int get_wwwWatchdogDelay( )
java    int get_wwwWatchdogDelay( )
uwp     async Task<int> get_wwwWatchdogDelay( )
py      get_wwwWatchdogDelay( )
php     function get_wwwWatchdogDelay( )
ts      async get_wwwWatchdogDelay( ): Promise<number>
es      async get_wwwWatchdogDelay( )
dnp     int get_wwwWatchdogDelay( )
cp      int get_wwwWatchdogDelay( )
cmd     YNetwork target get_wwwWatchdogDelay
```

A zero value disables automated reboot in case of Internet connectivity loss.

Returns :

an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

On failure, throws an exception or returns `YNetwork.WWWWATCHDOGDELAY_INVALID`.

network→isOnline() YNetwork

Checks if the network interface is currently reachable, without raising any error.

```
js      function isOnline( )
cpp     bool isOnline( )
m       -(BOOL) isOnline
pas     boolean isOnline( ): boolean
vb      function isOnline( ) As Boolean
cs      bool isOnline( )
java    boolean isOnline( )
py      isOnline( )
php     function isOnline( )
ts      async isOnline( ): Promise<boolean>
es      async isOnline( )
dnp     bool isOnline( )
cp      bool isOnline( )
```

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the network interface.

Returns :
`true` if the network interface can be reached, and `false` otherwise

network→isOnline_async() YNetwork

Checks if the network interface is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→isReadOnly() YNetwork

Test if the function is readOnly.

```
cpp     bool isReadOnly( )
m       -(bool) isReadOnly
pas     boolean isReadOnly( ): boolean
vb      function isReadOnly( ) As Boolean
cs      bool isReadOnly( )
java    boolean isReadOnly( )
uwp     async Task<bool> isReadOnly( )
py      isReadOnly( )
php     function isReadOnly( )
ts      async isReadOnly( ): Promise<boolean>
es      async isReadOnly( )
dnp     bool isReadOnly( )
cp      bool isReadOnly( )
cmd     YNetwork target isReadOnly
```

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

network→load() YNetwork

Preloads the network interface cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→loadAttribute() YNetwork

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

network→load_async() YNetwork

Preloads the network interface cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI.SUCCESS)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→muteValueCallbacks() YNetwork

Disables the propagation of every new advertised value to the parent hub.

```
js      function muteValueCallbacks( )
cpp     int muteValueCallbacks( )
m       -(int) muteValueCallbacks
pas     LongInt muteValueCallbacks( ): LongInt
vb      function muteValueCallbacks( ) As Integer
cs      int muteValueCallbacks( )
java    int muteValueCallbacks( )
uwp     async Task<int> muteValueCallbacks( )
py      muteValueCallbacks( )
php     function muteValueCallbacks( )
ts      async muteValueCallbacks( ): Promise<number>
es      async muteValueCallbacks( )
dnp     int muteValueCallbacks( )
cp      int muteValueCallbacks( )
cmd     YNetwork target muteValueCallbacks
```

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→nextNetwork() YNetwork

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

`js`	function **nextNetwork**( )
`cpp`	YNetwork * **nextNetwork**( )
`m`	-(nullable YNetwork*) **nextNetwork**
`pas`	TYNetwork **nextNetwork**( ): TYNetwork
`vb`	function **nextNetwork**( ) As YNetwork
`cs`	YNetwork **nextNetwork**( )
`java`	YNetwork **nextNetwork**( )
`uwp`	YNetwork **nextNetwork**( )
`py`	**nextNetwork**( )
`php`	function **nextNetwork**( )
`ts`	**nextNetwork**( ): YNetwork | null
`es`	**nextNetwork**( )

Caution: You can't make any assumption about the returned network interfaces order. If you want to find a specific a network interface, use `Network.findNetwork()` and a hardwareID or a logical name.

Returns :

a pointer to a `YNetwork` object, corresponding to a network interface currently online, or a `null` pointer if there are no more network interfaces to enumerate.

network→ping() YNetwork

Pings host to test the network connectivity.

```
js      function ping( host)
cpp     string ping( string host)
m       -(NSString*) ping : (NSString*) host
pas     string ping( host: string): string
vb      function ping( ByVal host As String) As String
cs      string ping( string host)
java    String ping( String host)
uwp     async Task<string> ping( string host)
py      ping( host)
php     function ping( $host)
ts      async ping( host: string): Promise<string>
es      async ping( host)
dnp     string ping( string host)
cp      string ping( string host)
cmd     YNetwork target ping host
```

Sends four ICMP ECHO_REQUEST requests from the module to the target host. This method returns a string with the result of the 4 ICMP ECHO_REQUEST requests.

Parameters :

host the hostname or the IP address of the target

Returns :

a string with the result of the ping.

network→registerValueCallback() YNetwork

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YNetworkValueCallback **callback**)
m	-(int) **registerValueCallback** : (YNetworkValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYNetworkValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YNetworkValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YNetworkValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

network→set_adminPassword() YNetwork
network→setAdminPassword()

Changes the password for the "admin" user.

```
js      function set_adminPassword( newval)
cpp     int set_adminPassword( string newval)
m       -(int) setAdminPassword : (NSString*) newval
pas     integer set_adminPassword( newval: string): integer
vb      function set_adminPassword( ByVal newval As String) As Integer
cs      int set_adminPassword( string newval)
java    int set_adminPassword( String newval)
uwp     async Task<int> set_adminPassword( string newval)
py      set_adminPassword( newval)
php     function set_adminPassword( $newval)
ts      async set_adminPassword( newval: string): Promise<number>
es      async set_adminPassword( newval)
dnp     int set_adminPassword( string newval)
cp      int set_adminPassword( string newval)
cmd     YNetwork target set_adminPassword newval
```

This password becomes instantly required to perform any change of the module state. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "admin" user

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackCredentials() YNetwork
network→setCallbackCredentials()

Changes the credentials required to connect to the callback address.

```
js      function set_callbackCredentials( newval)
cpp     int set_callbackCredentials( string newval)
m       -(int) setCallbackCredentials : (NSString*) newval
pas     integer set_callbackCredentials( newval: string): integer
vb      function set_callbackCredentials( ByVal newval As String) As Integer
cs      int set_callbackCredentials( string newval)
java    int set_callbackCredentials( String newval)
uwp     async Task<int> set_callbackCredentials( string newval)
py      set_callbackCredentials( newval)
php     function set_callbackCredentials( $newval)
ts      async set_callbackCredentials( newval: string): Promise<number>
es      async set_callbackCredentials( newval)
dnp     int set_callbackCredentials( string newval)
cp      int set_callbackCredentials( string newval)
cmd     YNetwork target set_callbackCredentials newval
```

The credentials must be provided as returned by function `get_callbackCredentials`, in the form `username:hash`. The method used to compute the hash varies according to the the authentication scheme implemented by the callback, For Basic authentication, the hash is the MD5 of the string `username:password`. For Digest authentication, the hash is the MD5 of the string `username:realm:password`. For a simpler way to configure callback credentials, use function `callbackLogin` instead. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the credentials required to connect to the callback address

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackEncoding() YNetwork
network→setCallbackEncoding()

Changes the encoding standard to use for representing notification values.

```
js      function set_callbackEncoding( newval)
cpp     int set_callbackEncoding( Y_CALLBACKENCODING_enum newval)
m       -(int) setCallbackEncoding : (Y_CALLBACKENCODING_enum) newval
pas     integer set_callbackEncoding( newval: Integer): integer
vb      function set_callbackEncoding( ByVal newval As Integer) As Integer
cs      int set_callbackEncoding( int newval)
java    int set_callbackEncoding( int newval)
uwp     async Task<int> set_callbackEncoding( int newval)
py      set_callbackEncoding( newval)
php     function set_callbackEncoding( $newval)
ts      async set_callbackEncoding( newval: YNetwork_CallbackEncoding): Promise<number>
es      async set_callbackEncoding( newval)
dnp     int set_callbackEncoding( int newval)
cp      int set_callbackEncoding( int newval)
cmd     YNetwork target set_callbackEncoding newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among `YNetwork.CALLBACKENCODING_FORM`, `YNetwork.CALLBACKENCODING_JSON`, `YNetwork.CALLBACKENCODING_JSON_ARRAY`, `YNetwork.CALLBACKENCODING_CSV`, `YNetwork.CALLBACKENCODING_YOCTO_API`, `YNetwork.CALLBACKENCODING_JSON_NUM`, `YNetwork.CALLBACKENCODING_EMONCMS`, `YNetwork.CALLBACKENCODING_AZURE`, `YNetwork.CALLBACKENCODING_INFLUXDB`, `YNetwork.CALLBACKENCODING_MQTT`, `YNetwork.CALLBACKENCODING_YOCTO_API_JZON`, `YNetwork.CALLBACKENCODING_PRTG` and `YNetwork.CALLBACKENCODING_INFLUXDB_V2` corresponding to the encoding standard to use for representing notification values

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackInitialDelay() YNetwork
network→setCallbackInitialDelay()

Changes the initial waiting time before first callback notifications, in seconds.

```
js      function set_callbackInitialDelay( newval)
cpp     int set_callbackInitialDelay( int newval)
m       -(int) setCallbackInitialDelay : (int) newval
pas     integer set_callbackInitialDelay( newval: LongInt): integer
vb      function set_callbackInitialDelay( ByVal newval As Integer) As Integer
cs      int set_callbackInitialDelay( int newval)
java    int set_callbackInitialDelay( int newval)
uwp     async Task<int> set_callbackInitialDelay( int newval)
py      set_callbackInitialDelay( newval)
php     function set_callbackInitialDelay( $newval)
ts      async set_callbackInitialDelay( newval: number): Promise<number>
es      async set_callbackInitialDelay( newval)
dnp     int set_callbackInitialDelay( int newval)
cp      int set_callbackInitialDelay( int newval)
cmd     YNetwork target set_callbackInitialDelay newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the initial waiting time before first callback notifications, in seconds

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMaxDelay() YNetwork
network→setCallbackMaxDelay()

Changes the waiting time between two HTTP callbacks when there is nothing new.

```
js      function set_callbackMaxDelay( newval)
cpp     int set_callbackMaxDelay( int newval)
m       -(int) setCallbackMaxDelay : (int) newval
pas     integer set_callbackMaxDelay( newval: LongInt): integer
vb      function set_callbackMaxDelay( ByVal newval As Integer) As Integer
cs      int set_callbackMaxDelay( int newval)
java    int set_callbackMaxDelay( int newval)
uwp     async Task<int> set_callbackMaxDelay( int newval)
py      set_callbackMaxDelay( newval)
php     function set_callbackMaxDelay( $newval)
ts      async set_callbackMaxDelay( newval: number): Promise<number>
es      async set_callbackMaxDelay( newval)
dnp     int set_callbackMaxDelay( int newval)
cp      int set_callbackMaxDelay( int newval)
cmd     YNetwork target set_callbackMaxDelay newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the waiting time between two HTTP callbacks when there is nothing new

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMethod() YNetwork
network→setCallbackMethod()

Changes the HTTP method used to notify callbacks for significant state changes.

```
js      function set_callbackMethod( newval)
cpp     int set_callbackMethod( Y_CALLBACKMETHOD_enum newval)
m       -(int) setCallbackMethod : (Y_CALLBACKMETHOD_enum) newval
pas     integer set_callbackMethod( newval: Integer): integer
vb      function set_callbackMethod( ByVal newval As Integer) As Integer
cs      int set_callbackMethod( int newval)
java    int set_callbackMethod( int newval)
uwp     async Task<int> set_callbackMethod( int newval)
py      set_callbackMethod( newval)
php     function set_callbackMethod( $newval)
ts      async set_callbackMethod( newval: YNetwork_CallbackMethod): Promise<number>
es      async set_callbackMethod( newval)
dnp     int set_callbackMethod( int newval)
cp      int set_callbackMethod( int newval)
cmd     YNetwork target set_callbackMethod newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among `YNetwork.CALLBACKMETHOD_POST`, `YNetwork.CALLBACKMETHOD_GET` and `YNetwork.CALLBACKMETHOD_PUT` corresponding to the HTTP method used to notify callbacks for significant state changes

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMinDelay() YNetwork
network→setCallbackMinDelay()

Changes the minimum waiting time between two HTTP callbacks, in seconds.

```
js      function set_callbackMinDelay( newval)
cpp     int set_callbackMinDelay( int newval)
m       -(int) setCallbackMinDelay : (int) newval
pas     integer set_callbackMinDelay( newval: LongInt): integer
vb      function set_callbackMinDelay( ByVal newval As Integer) As Integer
cs      int set_callbackMinDelay( int newval)
java    int set_callbackMinDelay( int newval)
uwp     async Task<int> set_callbackMinDelay( int newval)
py      set_callbackMinDelay( newval)
php     function set_callbackMinDelay( $newval)
ts      async set_callbackMinDelay( newval: number): Promise<number>
es      async set_callbackMinDelay( newval)
dnp     int set_callbackMinDelay( int newval)
cp      int set_callbackMinDelay( int newval)
cmd     YNetwork target set_callbackMinDelay newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the minimum waiting time between two HTTP callbacks, in seconds

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackSchedule() YNetwork
network→setCallbackSchedule()

Changes the HTTP callback schedule strategy, as a text string.

js	function **set_callbackSchedule**(**newval**)
cpp	int **set_callbackSchedule**(string **newval**)
m	-(int) setCallbackSchedule : (NSString*) **newval**
pas	integer **set_callbackSchedule**(**newval**: string): integer
vb	function **set_callbackSchedule**(ByVal **newval** As String) As Integer
cs	int **set_callbackSchedule**(string **newval**)
java	int **set_callbackSchedule**(String **newval**)
uwp	async Task<int> **set_callbackSchedule**(string **newval**)
py	**set_callbackSchedule**(**newval**)
php	function **set_callbackSchedule**(**$newval**)
ts	async **set_callbackSchedule**(**newval**: string): Promise<number>
es	async **set_callbackSchedule**(**newval**)
dnp	int **set_callbackSchedule**(string **newval**)
cp	int **set_callbackSchedule**(string **newval**)
cmd	YNetwork **target set_callbackSchedule newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the HTTP callback schedule strategy, as a text string

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackUrl()
network→setCallbackUrl()

YNetwork

Changes the callback URL to notify significant state changes.

js	function **set_callbackUrl**(**newval**)
cpp	int **set_callbackUrl**(string **newval**)
m	-(int) setCallbackUrl : (NSString*) **newval**
pas	integer **set_callbackUrl**(**newval**: string): integer
vb	function **set_callbackUrl**(ByVal **newval** As String) As Integer
cs	int **set_callbackUrl**(string **newval**)
java	int **set_callbackUrl**(String **newval**)
uwp	async Task<int> **set_callbackUrl**(string **newval**)
py	**set_callbackUrl**(**newval**)
php	function **set_callbackUrl**(**$newval**)
ts	async **set_callbackUrl**(**newval**: string): Promise<number>
es	async **set_callbackUrl**(**newval**)
dnp	int **set_callbackUrl**(string **newval**)
cp	int **set_callbackUrl**(string **newval**)
cmd	YNetwork **target set_callbackUrl newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the callback URL to notify significant state changes

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_defaultPage()
network→setDefaultPage()

YNetwork

Changes the default HTML page returned by the hub.

```
js      function set_defaultPage( newval)
cpp     int set_defaultPage( string newval)
m       -(int) setDefaultPage : (NSString*) newval
pas     integer set_defaultPage( newval: string): integer
vb      function set_defaultPage( ByVal newval As String) As Integer
cs      int set_defaultPage( string newval)
java    int set_defaultPage( String newval)
uwp     async Task<int> set_defaultPage( string newval)
py      set_defaultPage( newval)
php     function set_defaultPage( $newval)
ts      async set_defaultPage( newval: string): Promise<number>
es      async set_defaultPage( newval)
dnp     int set_defaultPage( string newval)
cp      int set_defaultPage( string newval)
cmd     YNetwork target set_defaultPage newval
```

If not value are set the hub return "index.html" which is the web interface of the hub. It is possible to change this page for file that has been uploaded on the hub. The maximum filename size is 15 characters. When you change this parameter, remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the default HTML page returned by the hub

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_discoverable() YNetwork
network→setDiscoverable()

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

```
js      function set_discoverable( newval)
cpp     int set_discoverable( Y_DISCOVERABLE_enum newval)
m       -(int) setDiscoverable : (Y_DISCOVERABLE_enum) newval
pas     integer set_discoverable( newval: Integer): integer
vb      function set_discoverable( ByVal newval As Integer) As Integer
cs      int set_discoverable( int newval)
java    int set_discoverable( int newval)
uwp     async Task<int> set_discoverable( int newval)
py      set_discoverable( newval)
php     function set_discoverable( $newval)
ts      async set_discoverable( newval: YNetwork_Discoverable): Promise<number>
es      async set_discoverable( newval)
dnp     int set_discoverable( int newval)
cp      int set_discoverable( int newval)
cmd     YNetwork target set_discoverable newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval either `YNetwork.DISCOVERABLE_FALSE` or `YNetwork.DISCOVERABLE_TRUE`, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_httpPort() YNetwork
network→setHttpPort()

Changes the the TCP port used to serve the hub web UI.

```
js      function set_httpPort( newval)
cpp     int set_httpPort( int newval)
m       -(int) setHttpPort : (int) newval
pas     integer set_httpPort( newval: LongInt): integer
vb      function set_httpPort( ByVal newval As Integer) As Integer
cs      int set_httpPort( int newval)
java    int set_httpPort( int newval)
uwp     async Task<int> set_httpPort( int newval)
py      set_httpPort( newval)
php     function set_httpPort( $newval)
ts      async set_httpPort( newval: number): Promise<number>
es      async set_httpPort( newval)
dnp     int set_httpPort( int newval)
cp      int set_httpPort( int newval)
cmd     YNetwork target set_httpPort newval
```

The default value is port 80, which is the default for all Web servers. Regardless of the value set here, the hub will always reply on port 4444, which is used by default by Yoctopuce API library. When you change this parameter, remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the the TCP port used to serve the hub web UI

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_logicalName()
network→setLogicalName()

YNetwork

Changes the logical name of the network interface.

```
js      function set_logicalName( newval)
cpp     int set_logicalName( string newval)
m       -(int) setLogicalName : (NSString*) newval
pas     integer set_logicalName( newval: string): integer
vb      function set_logicalName( ByVal newval As String) As Integer
cs      int set_logicalName( string newval)
java    int set_logicalName( String newval)
uwp     async Task<int> set_logicalName( string newval)
py      set_logicalName( newval)
php     function set_logicalName( $newval)
ts      async set_logicalName( newval: string): Promise<number>
es      async set_logicalName( newval)
dnp     int set_logicalName( string newval)
cp      int set_logicalName( string newval)
cmd     YNetwork target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the network interface.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_ntpServer() YNetwork
network→setNtpServer()

Changes the IP address of the NTP server to be used by the module.

```
js      function set_ntpServer( newval)
cpp     int set_ntpServer( string newval)
m       -(int) setNtpServer : (NSString*) newval
pas     integer set_ntpServer( newval: string): integer
vb      function set_ntpServer( ByVal newval As String) As Integer
cs      int set_ntpServer( string newval)
java    int set_ntpServer( String newval)
uwp     async Task<int> set_ntpServer( string newval)
py      set_ntpServer( newval)
php     function set_ntpServer( $newval)
ts      async set_ntpServer( newval: string): Promise<number>
es      async set_ntpServer( newval)
dnp     int set_ntpServer( string newval)
cp      int set_ntpServer( string newval)
cmd     YNetwork target set_ntpServer newval
```

Use an empty string to restore the factory set address. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the NTP server to be used by the module

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_periodicCallbackSchedule() YNetwork
network→setPeriodicCallbackSchedule()

Setup periodic HTTP callbacks (simplified function).

```
js    function set_periodicCallbackSchedule( interval, offset)
cpp   int set_periodicCallbackSchedule( string interval, int offset)
m     -(int) setPeriodicCallbackSchedule : (NSString*) interval
                                         : (int) offset
pas   LongInt set_periodicCallbackSchedule( interval: string,
                                            offset: LongInt): LongInt
vb    function set_periodicCallbackSchedule( ByVal interval As String,
                                             ByVal offset As Integer) As Integer
cs    int set_periodicCallbackSchedule( string interval, int offset)
java  int set_periodicCallbackSchedule( String interval, int offset)
uwp   async Task<int> set_periodicCallbackSchedule( string interval,
                                                    int offset)
py    set_periodicCallbackSchedule( interval, offset)
php   function set_periodicCallbackSchedule( $interval, $offset)
ts    async set_periodicCallbackSchedule( interval: string, offset: number): Promise<number>
es    async set_periodicCallbackSchedule( interval, offset)
dnp   int set_periodicCallbackSchedule( string interval, int offset)
cp    int set_periodicCallbackSchedule( string interval, int offset)
cmd   YNetwork target set_periodicCallbackSchedule interval offset
```

Parameters :

interval a string representing the callback periodicity, expressed in seconds, minutes or hours, eg. "60s", "5m", "1h", "48h".

offset an integer representing the time offset relative to the period when the callback should occur. For instance, if the periodicity is 24h, an offset of 7 will make the callback occur each day at 7AM.

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_primaryDNS() YNetwork
network→setPrimaryDNS()

Changes the IP address of the primary name server to be used by the module.

js	function **set_primaryDNS**(**newval**)
cpp	int **set_primaryDNS**(string **newval**)
m	-(int) setPrimaryDNS : (NSString*) **newval**
pas	integer **set_primaryDNS**(**newval**: string): integer
vb	function **set_primaryDNS**(ByVal **newval** As String) As Integer
cs	int **set_primaryDNS**(string **newval**)
java	int **set_primaryDNS**(String **newval**)
uwp	async Task<int> **set_primaryDNS**(string **newval**)
py	**set_primaryDNS**(**newval**)
php	function **set_primaryDNS**(**$newval**)
ts	async **set_primaryDNS**(**newval**: string): Promise<number>
es	async **set_primaryDNS**(**newval**)
dnp	int **set_primaryDNS**(string **newval**)
cp	int **set_primaryDNS**(string **newval**)
cmd	YNetwork **target set_primaryDNS newval**

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the primary name server to be used by the module

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_secondaryDNS() YNetwork
network→setSecondaryDNS()

Changes the IP address of the secondary name server to be used by the module.

```
js      function set_secondaryDNS( newval)
cpp     int set_secondaryDNS( string newval)
m       -(int) setSecondaryDNS : (NSString*) newval
pas     integer set_secondaryDNS( newval: string): integer
vb      function set_secondaryDNS( ByVal newval As String) As Integer
cs      int set_secondaryDNS( string newval)
java    int set_secondaryDNS( String newval)
uwp     async Task<int> set_secondaryDNS( string newval)
py      set_secondaryDNS( newval)
php     function set_secondaryDNS( $newval)
ts      async set_secondaryDNS( newval: string): Promise<number>
es      async set_secondaryDNS( newval)
dnp     int set_secondaryDNS( string newval)
cp      int set_secondaryDNS( string newval)
cmd     YNetwork target set_secondaryDNS newval
```

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the secondary name server to be used by the module

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_userData() YNetwork
network→setUserData()

Stores a user context provided as argument in the userData attribute of the function.

```
js      function set_userData( data)
cpp     void set_userData( void * data)
m       -(void) setUserData : (id) data
pas     set_userData( data: Tobject)
vb      procedure set_userData( ByVal data As Object)
cs      void set_userData( object data)
java    void set_userData( Object data)
py      set_userData( data)
php     function set_userData( $data)
ts      async set_userData( data: object|null): Promise<void>
es      async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

network→set_userPassword()
network→setUserPassword()

YNetwork

Changes the password for the "user" user.

```
js      function set_userPassword( newval)
cpp     int set_userPassword( string newval)
m       -(int) setUserPassword : (NSString*) newval
pas     integer set_userPassword( newval: string): integer
vb      function set_userPassword( ByVal newval As String) As Integer
cs      int set_userPassword( string newval)
java    int set_userPassword( String newval)
uwp     async Task<int> set_userPassword( string newval)
py      set_userPassword( newval)
php     function set_userPassword( $newval)
ts      async set_userPassword( newval: string): Promise<number>
es      async set_userPassword( newval)
dnp     int set_userPassword( string newval)
cp      int set_userPassword( string newval)
cmd     YNetwork target set_userPassword newval
```

This password becomes instantly required to perform any use of the module. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "user" user

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_wwwWatchdogDelay() YNetwork
network→setWwwWatchdogDelay()

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

js	function **set_wwwWatchdogDelay**(**newval**)
cpp	int **set_wwwWatchdogDelay**(int **newval**)
m	-(int) setWwwWatchdogDelay : (int) **newval**
pas	integer **set_wwwWatchdogDelay**(**newval**: LongInt): integer
vb	function **set_wwwWatchdogDelay**(ByVal **newval** As Integer) As Integer
cs	int **set_wwwWatchdogDelay**(int **newval**)
java	int **set_wwwWatchdogDelay**(int **newval**)
uwp	async Task<int> **set_wwwWatchdogDelay**(int **newval**)
py	**set_wwwWatchdogDelay**(**newval**)
php	function **set_wwwWatchdogDelay**(**$newval**)
ts	async **set_wwwWatchdogDelay**(**newval**: number): Promise<number>
es	async **set_wwwWatchdogDelay**(**newval**)
dnp	int **set_wwwWatchdogDelay**(int **newval**)
cp	int **set_wwwWatchdogDelay**(int **newval**)
cmd	YNetwork **target set_wwwWatchdogDelay newval**

A zero value disables automated reboot in case of Internet connectivity loss. The smallest valid non-zero timeout is 90 seconds. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→triggerCallback() YNetwork

Trigger an HTTP callback quickly.

```
js    function triggerCallback( )
cpp   int triggerCallback( )
m     -(int) triggerCallback
pas   LongInt triggerCallback( ): LongInt
vb    function triggerCallback( ) As Integer
cs    int triggerCallback( )
java  int triggerCallback( )
uwp   async Task<int> triggerCallback( )
py    triggerCallback( )
php   function triggerCallback( )
ts    async triggerCallback( ): Promise<number>
es    async triggerCallback( )
dnp   int triggerCallback( )
cp    int triggerCallback( )
cmd   YNetwork target triggerCallback
```

This function can even be called within an HTTP callback, in which case the next callback will be triggered 5 seconds after the end of the current callback, regardless if the minimum time between callbacks configured in the device.

Returns :
YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→unmuteValueCallbacks() YNetwork

Re-enables the propagation of every new advertised value to the parent hub.

```
js    function unmuteValueCallbacks( )
cpp   int unmuteValueCallbacks( )
m     -(int) unmuteValueCallbacks
pas   LongInt unmuteValueCallbacks( ): LongInt
vb    function unmuteValueCallbacks( ) As Integer
cs    int unmuteValueCallbacks( )
java  int unmuteValueCallbacks( )
uwp   async Task<int> unmuteValueCallbacks( )
py    unmuteValueCallbacks( )
php   function unmuteValueCallbacks( )
ts    async unmuteValueCallbacks( ): Promise<number>
es    async unmuteValueCallbacks( )
dnp   int unmuteValueCallbacks( )
cp    int unmuteValueCallbacks( )
cmd   YNetwork target unmuteValueCallbacks
```

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useDHCP() YNetwork

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

```
js    function useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
cpp   int useDHCP( string fallbackIpAddr,
                   int fallbackSubnetMaskLen,
                   string fallbackRouter)
m     -(int) useDHCP : (NSString*) fallbackIpAddr
                     : (int) fallbackSubnetMaskLen
                     : (NSString*) fallbackRouter
pas   LongInt useDHCP( fallbackIpAddr: string,
                       fallbackSubnetMaskLen: LongInt,
                       fallbackRouter: string): LongInt
vb    function useDHCP( ByVal fallbackIpAddr As String,
                        ByVal fallbackSubnetMaskLen As Integer,
                        ByVal fallbackRouter As String) As Integer
cs    int useDHCP( string fallbackIpAddr,
                   int fallbackSubnetMaskLen,
                   string fallbackRouter)
java  int useDHCP( String fallbackIpAddr,
                   int fallbackSubnetMaskLen,
                   String fallbackRouter)
uwp   async Task<int> useDHCP( string fallbackIpAddr,
                               int fallbackSubnetMaskLen,
                               string fallbackRouter)
py    useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
php   function useDHCP( $fallbackIpAddr, $fallbackSubnetMaskLen, $fallbackRouter)
ts    async useDHCP( fallbackIpAddr: string, fallbackSubnetMaskLen: number, fallbackRouter: string):
                     Promise<number>
es    async useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
dnp   int useDHCP( string fallbackIpAddr,
                   int fallbackSubnetMaskLen,
                   string fallbackRouter)
cp    int useDHCP( string fallbackIpAddr,
                   int fallbackSubnetMaskLen,
                   string fallbackRouter)
cmd   YNetwork target useDHCP fallbackIpAddr fallbackSubnetMaskLen fallbackRouter
```

Until an address is received from a DHCP server, the module uses the IP parameters specified to this function. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

fallbackIpAddr	fallback IP address, to be used when no DHCP reply is received
fallbackSubnetMaskLen	fallback subnet mask length when no DHCP reply is received, as an integer (e.g. 24 means 255.255.255.0)
fallbackRouter	fallback router IP address, to be used when no DHCP reply is received

Returns :
YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useDHCPauto() YNetwork

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

```
js    function useDHCPauto( )
cpp   int useDHCPauto( )
m     -(int) useDHCPauto
pas   LongInt useDHCPauto( ): LongInt
vb    function useDHCPauto( ) As Integer
cs    int useDHCPauto( )
java  int useDHCPauto( )
uwp   async Task<int> useDHCPauto( )
py    useDHCPauto( )
php   function useDHCPauto( )
ts    async useDHCPauto( ): Promise<number>
es    async useDHCPauto( )
dnp   int useDHCPauto( )
cp    int useDHCPauto( )
cmd   YNetwork target useDHCPauto
```

Until an address is received from a DHCP server, the module uses an IP of the network 169.254.0.0/16 (APIPA). Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useStaticIP() YNetwork

Changes the configuration of the network interface to use a static IP address.

```
js      function useStaticIP( ipAddress, subnetMaskLen, router)
cpp     int useStaticIP( string ipAddress, int subnetMaskLen, string router)
m       -(int) useStaticIP : (NSString*) ipAddress
                           : (int) subnetMaskLen
                           : (NSString*) router
pas     LongInt useStaticIP( ipAddress: string,
                             subnetMaskLen: LongInt,
                             router: string): LongInt
vb      function useStaticIP( ByVal ipAddress As String,
                              ByVal subnetMaskLen As Integer,
                              ByVal router As String) As Integer
cs      int useStaticIP( string ipAddress,
                         int subnetMaskLen,
                         string router)
java    int useStaticIP( String ipAddress,
                         int subnetMaskLen,
                         String router)
uwp     async Task<int> useStaticIP( string ipAddress,
                                     int subnetMaskLen,
                                     string router)
py      useStaticIP( ipAddress, subnetMaskLen, router)
php     function useStaticIP( $ipAddress, $subnetMaskLen, $router)
ts      async useStaticIP( ipAddress: string, subnetMaskLen: number, router: string): Promise<number>
es      async useStaticIP( ipAddress, subnetMaskLen, router)
dnp     int useStaticIP( string ipAddress,
                         int subnetMaskLen,
                         string router)
cp      int useStaticIP( string ipAddress,
                         int subnetMaskLen,
                         string router)
cmd     YNetwork target useStaticIP ipAddress subnetMaskLen router
```

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ipAddress	device IP address
subnetMaskLen	subnet mask length, as an integer (e.g. 24 means 255.255.255.0)
router	router IP address (default gateway)

Returns :

`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

network→wait_async() YNetwork

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

8.4. Class YFiles

Filesystem control interface, available for instance in the Yocto-Color-V2, the Yocto-Serial, the YoctoHub-Ethernet or the YoctoHub-Wireless-n

The YFiles class is used to access the filesystem embedded on some Yoctopuce devices. This filesystem makes it possible for instance to design a custom web UI (for networked devices) or to add fonts (on display devices).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_files.js'></script>
cpp	#include "yocto_files.h"
m	#import "yocto_files.h"
pas	uses yocto_files;
vb	yocto_files.vb
cs	yocto_files.cs
java	import com.yoctopuce.YoctoAPI.YFiles;
uwp	import com.yoctopuce.YoctoAPI.YFiles;
py	from yocto_files import *
php	require_once('yocto_files.php');
ts	in HTML: import { YFiles } from '../../dist/esm/yocto_files.js'; in Node.js: import { YFiles } from 'yoctolib-cjs/yocto_files.js';
es	in HTML: <script src="../../lib/yocto_files.js"></script> in node.js: require('yoctolib-es2017/yocto_files.js');
dnp	import YoctoProxyAPI.YFilesProxy
cp	#include "yocto_files_proxy.h"
vi	YFiles.vi
ml	import YoctoProxyAPI.YFilesProxy

Global functions

YFiles.FindFiles(**func**)

Retrieves a filesystem for a given identifier.

YFiles.FindFilesInContext(**yctx**, **func**)

Retrieves a filesystem for a given identifier in a YAPI context.

YFiles.FirstFiles()

Starts the enumeration of filesystems currently accessible.

YFiles.FirstFilesInContext(**yctx**)

Starts the enumeration of filesystems currently accessible.

YFiles.GetSimilarFunctions()

Enumerates all functions of type Files available on the devices currently reachable by the library, and returns their unique hardware ID.

YFiles properties

files→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

files→FilesCount *[read-only]*

Number of files currently loaded in the filesystem.

files→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

files→FunctionId *[read-only]*

Hardware identifier of the filesystem, without reference to the module.

files→HardwareId *[read-only]*

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

files→IsOnline *[read-only]*

Checks if the function is currently reachable.

files→LogicalName *[writable]*

Logical name of the function.

files→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

YFiles methods

files→clearCache()

Invalidates the cache.

files→describe()

Returns a short text that describes unambiguously the instance of the filesystem in the form TYPE(NAME)=SERIAL.FUNCTIONID.

files→download(**pathname**)

Downloads the requested file and returns a binary buffer with its content.

files→download_async(**pathname**, **callback**, **context**)

Downloads the requested file and returns a binary buffer with its content.

files→fileExist(**filename**)

Test if a file exist on the filesystem of the module.

files→format_fs()

Reinitialize the filesystem to its clean, unfragmented, empty state.

files→get_advertisedValue()

Returns the current value of the filesystem (no more than 6 characters).

files→get_errorMessage()

Returns the error message of the latest error with the filesystem.

files→get_errorType()

Returns the numerical error code of the latest error with the filesystem.

files→get_filesCount()

Returns the number of files currently loaded in the filesystem.

files→get_freeSpace()

Returns the free space for uploading new files to the filesystem, in bytes.

files→get_friendlyName()

Returns a global identifier of the filesystem in the format MODULE_NAME.FUNCTION_NAME.

files→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

files→get_functionId()

Returns the hardware identifier of the filesystem, without reference to the module.

files→get_hardwareId()

Returns the unique hardware identifier of the filesystem in the form SERIAL.FUNCTIONID.

files→get_list(**pattern**)

Returns a list of YFileRecord objects that describe files currently loaded in the filesystem.

files→get_logicalName()

Returns the logical name of the filesystem.

files→get_module()

Gets the `YModule` object for the device on which the function is located.

files→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

files→get_serialNumber()

Returns the serial number of the module, as set by the factory.

files→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

files→isOnline()

Checks if the filesystem is currently reachable, without raising any error.

files→isOnline_async(**callback**, **context**)

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

files→isReadOnly()

Test if the function is readOnly.

files→load(**msValidity**)

Preloads the filesystem cache with a specified validity duration.

files→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

files→load_async(**msValidity**, **callback**, **context**)

Preloads the filesystem cache with a specified validity duration (asynchronous version).

files→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

files→nextFiles()

Continues the enumeration of filesystems started using `yFirstFiles()`.

files→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

files→remove(**pathname**)

Deletes a file, given by its full path name, from the filesystem.

files→set_logicalName(**newval**)

Changes the logical name of the filesystem.

files→set_userData(**data**)

Stores a user context provided as argument in the userData attribute of the function.

files→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

files→upload(**pathname**, **content**)

Uploads a file to the filesystem, to the specified full path name.

files→wait_async(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YFiles.FindFiles() YFiles
YFiles.FindFiles()

Retrieves a filesystem for a given identifier.

js	function **yFindFiles**(**func**)
cpp	YFiles* **FindFiles**(string **func**)
m	+(YFiles*) **FindFiles** : (NSString*) **func**
pas	TYFiles **yFindFiles**(**func**: string): TYFiles
vb	function **FindFiles**(ByVal **func** As String) As YFiles
cs	static YFiles **FindFiles**(string **func**)
java	static YFiles **FindFiles**(String **func**)
uwp	static YFiles **FindFiles**(string **func**)
py	**FindFiles**(**func**)
php	function **FindFiles**(**$func**)
ts	static **FindFiles**(**func**: string): YFiles
es	static **FindFiles**(**func**)
dnp	static YFilesProxy **FindFiles**(string **func**)
cp	static YFilesProxy * **FindFiles**(string **func**)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the filesystem is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YFiles.isOnline()` to test if the filesystem is indeed online at a given time. In case of ambiguity when looking for a filesystem by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the filesystem, for instance `YRGBLED2.files`.

Returns :

a `YFiles` object allowing you to drive the filesystem.

YFiles.FindFilesInContext() YFiles
YFiles.FindFilesInContext()

Retrieves a filesystem for a given identifier in a YAPI context.

```
java  static YFiles FindFilesInContext( YAPIContext yctx, String func)
uwp   static YFiles FindFilesInContext( YAPIContext yctx, string func)
ts    static FindFilesInContext( yctx: YAPIContext, func: string): YFiles
es    static FindFilesInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the filesystem is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YFiles.isOnline()` to test if the filesystem is indeed online at a given time. In case of ambiguity when looking for a filesystem by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the filesystem, for instance `YRGBLED2.files`.

Returns :

a `YFiles` object allowing you to drive the filesystem.

YFiles.FirstFiles() YFiles

YFiles.FirstFiles()

Starts the enumeration of filesystems currently accessible.

js	function **yFirstFiles**( )
cpp	YFiles * **FirstFiles**( )
m	+(YFiles*) **FirstFiles**
pas	TYFiles **yFirstFiles**( ): TYFiles
vb	function **FirstFiles**( ) As YFiles
cs	static YFiles **FirstFiles**( )
java	static YFiles **FirstFiles**( )
uwp	static YFiles **FirstFiles**( )
py	**FirstFiles**( )
php	function **FirstFiles**( )
ts	static **FirstFiles**( ): YFiles | null
es	static **FirstFiles**( )

Use the method `YFiles.nextFiles()` to iterate on next filesystems.

Returns :

a pointer to a `YFiles` object, corresponding to the first filesystem currently online, or a `null` pointer if there are none.

YFiles.FirstFilesInContext() YFiles
YFiles.FirstFilesInContext()

Starts the enumeration of filesystems currently accessible.

java static YFiles **FirstFilesInContext**(YAPIContext **yctx**)
uwp static YFiles **FirstFilesInContext**(YAPIContext **yctx**)
ts static **FirstFilesInContext**(**yctx**: YAPIContext): YFiles | null
es static **FirstFilesInContext**(**yctx**)

Use the method `YFiles.nextFiles()` to iterate on next filesystems.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YFiles` object, corresponding to the first filesystem currently online, or a `null` pointer if there are none.

YFiles.GetSimilarFunctions() YFiles
YFiles.GetSimilarFunctions()

Enumerates all functions of type Files available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YFiles.FindFiles` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

files→AdvertisedValue — YFiles

Short string representing the current state of the function.

dnp string **AdvertisedValue**

files→FilesCount

YFiles

Number of files currently loaded in the filesystem.

dnp int **FilesCount**

files→FriendlyName YFiles

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

files→FunctionId — YFiles

Hardware identifier of the filesystem, without reference to the module.

dnp string **FunctionId**

For example `relay1`

files→HardwareId — YFiles

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

files→IsOnline YFiles

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

files→LogicalName YFiles

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

files→SerialNumber YFiles

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

files→clearCache() YFiles

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the filesystem attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

files→describe() YFiles

Returns a short text that describes unambiguously the instance of the filesystem in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the filesystem (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

files→download() YFiles

Downloads the requested file and returns a binary buffer with its content.

```
js      function download( pathname)
cpp     string download( string pathname)
m       -(NSMutableData*) download : (NSString*) pathname
pas     TByteArray download( pathname: string): TByteArray
vb      function download( ByVal pathname As String) As Byte
cs      byte[] download( string pathname)
java    byte[] download( String pathname)
uwp     async Task<byte[]> download( string pathname)
py      download( pathname)
php     function download( $pathname)
ts      async download( pathname: string): Promise<Uint8Array>
es      async download( pathname)
dnp     byte[] download( string pathname)
cp      string download( string pathname)
cmd     YFiles target download pathname
```

Parameters :

pathname path and name of the file to download

Returns :

a binary buffer with the file content

On failure, throws an exception or returns an empty content.

files→download_async() YFiles

Downloads the requested file and returns a binary buffer with its content.

```
js  function download_async( pathname, callback, context)
```

This is the asynchronous version that uses a callback to pass the result when the download is completed.

Parameters :

pathname	path and name of the new file to load
callback	callback function that is invoked when the w The callback function receives three arguments: - the user-specific context object - the YFiles object whose download_async was invoked - a binary buffer with the file content
context	user-specific object that is passed as-is to the callback function

Returns :

nothing.

files→fileExist() YFiles

Test if a file exist on the filesystem of the module.

```
js    function fileExist( filename)
cpp   bool fileExist( string filename)
m     -(bool) fileExist : (NSString*) filename
pas   boolean fileExist( filename: string): boolean
vb    function fileExist( ByVal filename As String) As Boolean
cs    bool fileExist( string filename)
java  boolean fileExist( String filename)
uwp   async Task<bool> fileExist( string filename)
py    fileExist( filename)
php   function fileExist( $filename)
ts    async fileExist( filename: string): Promise<boolean>
es    async fileExist( filename)
dnp   bool fileExist( string filename)
cp    bool fileExist( string filename)
cmd   YFiles target fileExist filename
```

Parameters :

filename the file name to test.

Returns :

a true if the file exist, false otherwise.

On failure, throws an exception.

files→format_fs() YFiles

Reinitialize the filesystem to its clean, unfragmented, empty state.

```
js      function format_fs( )
cpp     int format_fs( )
m       -(int) format_fs
pas     LongInt format_fs( ): LongInt
vb      function format_fs( ) As Integer
cs      int format_fs( )
java    int format_fs( )
uwp     async Task<int> format_fs( )
py      format_fs( )
php     function format_fs( )
ts      async format_fs( ): Promise<number>
es      async format_fs( )
dnp     int format_fs( )
cp      int format_fs( )
cmd     YFiles target format_fs
```

All files previously uploaded are permanently lost.

Returns :
YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→get_advertisedValue() YFiles
files→advertisedValue()

Returns the current value of the filesystem (no more than 6 characters).

js	function **get_advertisedValue**( )
cpp	string **get_advertisedValue**( )
m	-(NSString*) advertisedValue
pas	string **get_advertisedValue**( ): string
vb	function **get_advertisedValue**( ) As String
cs	string **get_advertisedValue**( )
java	String **get_advertisedValue**( )
uwp	async Task<string> **get_advertisedValue**( )
py	**get_advertisedValue**( )
php	function **get_advertisedValue**( )
ts	async **get_advertisedValue**( ): Promise<string>
es	async **get_advertisedValue**( )
dnp	string **get_advertisedValue**( )
cp	string **get_advertisedValue**( )
cmd	YFiles **target get_advertisedValue**

Returns :
a string corresponding to the current value of the filesystem (no more than 6 characters).

On failure, throws an exception or returns `YFiles.ADVERTISEDVALUE_INVALID`.

files→get_errorMessage()
files→errorMessage()

YFiles

Returns the error message of the latest error with the filesystem.

```
js      function get_errorMessage( )
cpp     string get_errorMessage( )
m       -(NSString*) errorMessage
pas     string get_errorMessage( ): string
vb      function get_errorMessage( ) As String
cs      string get_errorMessage( )
java    String get_errorMessage( )
py      get_errorMessage( )
php     function get_errorMessage( )
ts      get_errorMessage( ): string
es      get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the filesystem object

files→get_errorType() YFiles
files→errorType()

Returns the numerical error code of the latest error with the filesystem.

js	function **get_errorType**( )
cpp	YRETCODE **get_errorType**( )
m	-(YRETCODE) errorType
pas	YRETCODE **get_errorType**( ): YRETCODE
vb	function **get_errorType**( ) As YRETCODE
cs	YRETCODE **get_errorType**( )
java	int **get_errorType**( )
py	**get_errorType**( )
php	function **get_errorType**( )
ts	**get_errorType**( ): number
es	**get_errorType**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the filesystem object

files→get_filesCount()
files→filesCount()

YFiles

Returns the number of files currently loaded in the filesystem.

```
js      function get_filesCount( )
cpp     int get_filesCount( )
m       -(int) filesCount
pas     LongInt get_filesCount( ): LongInt
vb      function get_filesCount( ) As Integer
cs      int get_filesCount( )
java    int get_filesCount( )
uwp     async Task<int> get_filesCount( )
py      get_filesCount( )
php     function get_filesCount( )
ts      async get_filesCount( ): Promise<number>
es      async get_filesCount( )
dnp     int get_filesCount( )
cp      int get_filesCount( )
cmd     YFiles target get_filesCount
```

Returns :
an integer corresponding to the number of files currently loaded in the filesystem

On failure, throws an exception or returns `YFiles.FILESCOUNT_INVALID`.

files→get_freeSpace()
files→freeSpace()

YFiles

Returns the free space for uploading new files to the filesystem, in bytes.

```
js      function get_freeSpace( )
cpp     int get_freeSpace( )
m       -(int) freeSpace
pas     LongInt get_freeSpace( ): LongInt
vb      function get_freeSpace( ) As Integer
cs      int get_freeSpace( )
java    int get_freeSpace( )
uwp     async Task<int> get_freeSpace( )
py      get_freeSpace( )
php     function get_freeSpace( )
ts      async get_freeSpace( ): Promise<number>
es      async get_freeSpace( )
dnp     int get_freeSpace( )
cp      int get_freeSpace( )
cmd     YFiles target get_freeSpace
```

Returns :

an integer corresponding to the free space for uploading new files to the filesystem, in bytes

On failure, throws an exception or returns `YFiles.FREESPACE_INVALID`.

files→get_friendlyName()
files→friendlyName()

YFiles

Returns a global identifier of the filesystem in the format MODULE_NAME.FUNCTION_NAME.

```
js      function get_friendlyName( )
cpp     string get_friendlyName( )
m       -(NSString*) friendlyName
cs      string get_friendlyName( )
java    String get_friendlyName( )
py      get_friendlyName( )
php     function get_friendlyName( )
ts      async get_friendlyName( ): Promise<string>
es      async get_friendlyName( )
dnp     string get_friendlyName( )
cp      string get_friendlyName( )
```

The returned string uses the logical names of the module and of the filesystem if they are defined, otherwise the serial number of the module and the hardware identifier of the filesystem (for example: MyCustomName.relay1)

Returns :

a string that uniquely identifies the filesystem using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns YFiles.FRIENDLYNAME_INVALID.

files→get_functionDescriptor() YFiles
files→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

files→get_functionId()
files→functionId()

YFiles

Returns the hardware identifier of the filesystem, without reference to the module.

```
js      function get_functionId( )
cpp     string get_functionId( )
m       -(NSString*) functionId
vb      function get_functionId( ) As String
cs      string get_functionId( )
java    String get_functionId( )
py      get_functionId( )
php     function get_functionId( )
ts      async get_functionId( ): Promise<string>
es      async get_functionId( )
dnp     string get_functionId( )
cp      string get_functionId( )
```

For example `relay1`

Returns :
a string that identifies the filesystem (ex: `relay1`)

On failure, throws an exception or returns `YFiles.FUNCTIONID_INVALID`.

files→get_hardwareId() YFiles
files→hardwareId()

Returns the unique hardware identifier of the filesystem in the form SERIAL.FUNCTIONID.

js	function **get_hardwareId**( )
cpp	string **get_hardwareId**( )
m	-(NSString*) hardwareId
vb	function **get_hardwareId**( ) As String
cs	string **get_hardwareId**( )
java	String **get_hardwareId**( )
py	**get_hardwareId**( )
php	function **get_hardwareId**( )
ts	async **get_hardwareId**( ): Promise<string>
es	async **get_hardwareId**( )
dnp	string **get_hardwareId**( )
cp	string **get_hardwareId**( )

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the filesystem (for example RELAYLO1-123456.relay1).

Returns :
a string that uniquely identifies the filesystem (ex: RELAYLO1-123456.relay1)

On failure, throws an exception or returns YFiles.HARDWAREID_INVALID.

files→get_list()
files→list()

YFiles

Returns a list of YFileRecord objects that describe files currently loaded in the filesystem.

```
js      function get_list( pattern)
cpp     vector<YFileRecord> get_list( string pattern)
m       -(NSMutableArray*) list : (NSString*) pattern
pas     TYFileRecordArray get_list( pattern: string): TYFileRecordArray
vb      function get_list( ByVal pattern As String) As List
cs      List<YFileRecord> get_list( string pattern)
java    ArrayList<YFileRecord> get_list( String pattern)
uwp     async Task<List<YFileRecord>> get_list( string pattern)
py      get_list( pattern)
php     function get_list( $pattern)
ts      async get_list( pattern: string): Promise<YFileRecord[]
es      async get_list( pattern)
dnp     YFileRecordProxy[] get_list( string pattern)
cp      vector<YFileRecordProxy> get_list( string pattern)
cmd     YFiles target get_list pattern
```

Parameters :

pattern an optional filter pattern, using star and question marks as wild cards. When an empty pattern is provided, all file records are returned.

Returns :

a list of `YFileRecord` objects, containing the file path and name, byte size and 32-bit CRC of the file content.

On failure, throws an exception or returns an empty list.

files→get_logicalName() YFiles
files→logicalName()

Returns the logical name of the filesystem.

```
js      function get_logicalName( )
cpp     string get_logicalName( )
m       -(NSString*) logicalName
pas     string get_logicalName( ): string
vb      function get_logicalName( ) As String
cs      string get_logicalName( )
java    String get_logicalName( )
uwp     async Task<string> get_logicalName( )
py      get_logicalName( )
php     function get_logicalName( )
ts      async get_logicalName( ): Promise<string>
es      async get_logicalName( )
dnp     string get_logicalName( )
cp      string get_logicalName( )
cmd     YFiles target get_logicalName
```

Returns :
a string corresponding to the logical name of the filesystem.

On failure, throws an exception or returns `YFiles.LOGICALNAME_INVALID`.

files→get_module()
files→module()

YFiles

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

files→get_module_async() YFiles
files→module_async()

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→get_serialNumber()
files→serialNumber()

YFiles

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YFiles target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

files→get_userData()
files→userData()

YFiles

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

files→isOnline() YFiles

Checks if the filesystem is currently reachable, without raising any error.

```
js      function isOnline( )
cpp     bool isOnline( )
m       -(BOOL) isOnline
pas     boolean isOnline( ): boolean
vb      function isOnline( ) As Boolean
cs      bool isOnline( )
java    boolean isOnline( )
py      isOnline( )
php     function isOnline( )
ts      async isOnline( ): Promise<boolean>
es      async isOnline( )
dnp     bool isOnline( )
cp      bool isOnline( )
```

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the filesystem.

Returns :

`true` if the filesystem can be reached, and `false` otherwise

files→isOnline_async() YFiles

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→isReadOnly() YFiles

Test if the function is readOnly.

cpp	bool **isReadOnly**( )
m	-(bool) **isReadOnly**
pas	boolean **isReadOnly**( ): boolean
vb	function **isReadOnly**( ) As Boolean
cs	bool **isReadOnly**( )
java	boolean **isReadOnly**( )
uwp	async Task<bool> **isReadOnly**( )
py	**isReadOnly**( )
php	function **isReadOnly**( )
ts	async **isReadOnly**( ): Promise<boolean>
es	async **isReadOnly**( )
dnp	bool **isReadOnly**( )
cp	bool **isReadOnly**( )
cmd	YFiles **target isReadOnly**

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

files→load() YFiles

Preloads the filesystem cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

files→loadAttribute() YFiles

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

files→load_async() YFiles

Preloads the filesystem cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI.SUCCESS)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→muteValueCallbacks() YFiles

Disables the propagation of every new advertised value to the parent hub.

```
js      function muteValueCallbacks( )
cpp     int muteValueCallbacks( )
m       -(int) muteValueCallbacks
pas     LongInt muteValueCallbacks( ): LongInt
vb      function muteValueCallbacks( ) As Integer
cs      int muteValueCallbacks( )
java    int muteValueCallbacks( )
uwp     async Task<int> muteValueCallbacks( )
py      muteValueCallbacks( )
php     function muteValueCallbacks( )
ts      async muteValueCallbacks( ): Promise<number>
es      async muteValueCallbacks( )
dnp     int muteValueCallbacks( )
cp      int muteValueCallbacks( )
cmd     YFiles target muteValueCallbacks
```

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

files→nextFiles() YFiles

Continues the enumeration of filesystems started using `yFirstFiles()`.

`js`	function **nextFiles**( )
`cpp`	YFiles * **nextFiles**( )
`m`	-(nullable YFiles*) **nextFiles**
`pas`	TYFiles **nextFiles**( ): TYFiles
`vb`	function **nextFiles**( ) As YFiles
`cs`	YFiles **nextFiles**( )
`java`	YFiles **nextFiles**( )
`uwp`	YFiles **nextFiles**( )
`py`	**nextFiles**( )
`php`	function **nextFiles**( )
`ts`	**nextFiles**( ): YFiles | null
`es`	**nextFiles**( )

Caution: You can't make any assumption about the returned filesystems order. If you want to find a specific a filesystem, use `Files.findFiles()` and a hardwareID or a logical name.

Returns :

a pointer to a `YFiles` object, corresponding to a filesystem currently online, or a `null` pointer if there are no more filesystems to enumerate.

files→registerValueCallback() YFiles

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YFilesValueCallback **callback**)
m	-(int) **registerValueCallback** : (YFilesValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYFilesValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YFilesValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YFilesValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

files→remove() YFiles

Deletes a file, given by its full path name, from the filesystem.

```
js      function remove( pathname)
cpp     int remove( string pathname)
m       -(int) remove : (NSString*) pathname
pas     LongInt remove( pathname: string): LongInt
vb      function remove( ByVal pathname As String) As Integer
cs      int remove( string pathname)
java    int remove( String pathname)
uwp     async Task<int> remove( string pathname)
py      remove( pathname)
php     function remove( $pathname)
ts      async remove( pathname: string): Promise<number>
es      async remove( pathname)
dnp     int remove( string pathname)
cp      int remove( string pathname)
cmd     YFiles target remove pathname
```

Because of filesystem fragmentation, deleting a file may not always free up the whole space used by the file. However, rewriting a file with the same path name will always reuse any space not freed previously. If you need to ensure that no space is taken by previously deleted files, you can use `format_fs` to fully reinitialize the filesystem.

Parameters :

pathname path and name of the file to remove.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→set_logicalName()
files→setLogicalName()

YFiles

Changes the logical name of the filesystem.

```
js      function set_logicalName( newval)
cpp     int set_logicalName( string newval)
m       -(int) setLogicalName : (NSString*) newval
pas     integer set_logicalName( newval: string): integer
vb      function set_logicalName( ByVal newval As String) As Integer
cs      int set_logicalName( string newval)
java    int set_logicalName( String newval)
uwp     async Task<int> set_logicalName( string newval)
py      set_logicalName( newval)
php     function set_logicalName( $newval)
ts      async set_logicalName( newval: string): Promise<number>
es      async set_logicalName( newval)
dnp     int set_logicalName( string newval)
cp      int set_logicalName( string newval)
cmd     YFiles target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the filesystem.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→set_userData()
files→setUserData()

YFiles

Stores a user context provided as argument in the userData attribute of the function.

js	function **set_userData**(**data**)
cpp	void **set_userData**(void * **data**)
m	-(void) setUserData : (id) **data**
pas	**set_userData**(**data**: Tobject)
vb	procedure **set_userData**(ByVal **data** As Object)
cs	void **set_userData**(object **data**)
java	void **set_userData**(Object **data**)
py	**set_userData**(**data**)
php	function **set_userData**(**$data**)
ts	async **set_userData**(**data**: object|null): Promise<void>
es	async **set_userData**(**data**)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

files→unmuteValueCallbacks() YFiles

Re-enables the propagation of every new advertised value to the parent hub.

```
js    function unmuteValueCallbacks( )
cpp   int unmuteValueCallbacks( )
m     -(int) unmuteValueCallbacks
pas   LongInt unmuteValueCallbacks( ): LongInt
vb    function unmuteValueCallbacks( ) As Integer
cs    int unmuteValueCallbacks( )
java  int unmuteValueCallbacks( )
uwp   async Task<int> unmuteValueCallbacks( )
py    unmuteValueCallbacks( )
php   function unmuteValueCallbacks( )
ts    async unmuteValueCallbacks( ): Promise<number>
es    async unmuteValueCallbacks( )
dnp   int unmuteValueCallbacks( )
cp    int unmuteValueCallbacks( )
cmd   YFiles target unmuteValueCallbacks
```

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

files→upload() YFiles

Uploads a file to the filesystem, to the specified full path name.

```
js      function upload( pathname, content)
cpp     int upload( string pathname, string content)
m       -(int) upload : (NSString*) pathname
                      : (NSData*) content
pas     LongInt upload( pathname: string, content: TByteArray): LongInt
vb      procedure upload( ByVal pathname As String, ByVal content As Byte()
cs      int upload( string pathname, byte[] content)
java    int upload( String pathname, byte[] content)
uwp     async Task<int> upload( string pathname, byte[] content)
py      upload( pathname, content)
php     function upload( $pathname, $content)
ts      async upload( pathname: string, content: Uint8Array): Promise<number>
es      async upload( pathname, content)
dnp     int upload( string pathname, byte[] content)
cp      int upload( string pathname, string content)
cmd     YFiles target upload pathname content
```

If a file already exists with the same path name, its content is overwritten.

Parameters :

pathname path and name of the new file to create

content binary buffer with the content to set

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→wait_async() YFiles

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

8.5. Class YRealTimeClock

Real-time clock control interface, available for instance in the YoctoHub-GSM-3G-EU, the YoctoHub-GSM-3G-NA, the YoctoHub-GSM-4G or the YoctoHub-Wireless-n

The `YRealTimeClock` class provide access to the embedded real-time clock available on some Yoctopuce devices. It can provide current date and time, even after a power outage lasting several days. It is the base for automated wake-up functions provided by the WakeUpScheduler. The current time may represent a local time as well as an UTC time, but no automatic time change will occur to account for daylight saving time.

In order to use the functions described here, you should include:

es	in HTML: <script src="../../lib/yocto_realtimeclock.js"></script> in node.js: require('yoctolib-es2017/yocto_realtimeclock.js');
js	<script type='text/javascript' src='yocto_realtimeclock.js'></script>
cpp	#include "yocto_realtimeclock.h"
m	#import "yocto_realtimeclock.h"
pas	uses yocto_realtimeclock;
vb	yocto_realtimeclock.vb
cs	yocto_realtimeclock.cs
java	import com.yoctopuce.YoctoAPI.YRealTimeClock;
uwp	import com.yoctopuce.YoctoAPI.YRealTimeClock;
py	from yocto_realtimeclock import *
php	require_once('yocto_realtimeclock.php');
ts	in HTML: import { YRealTimeClock } from '../../dist/esm/yocto_realtimeclock.js'; in Node.js: import { YRealTimeClock } from 'yoctolib-cjs/yocto_realtimeclock.js';
dnp	import YoctoProxyAPI.YRealTimeClockProxy
cp	#include "yocto_realtimeclock_proxy.h"
vi	YRealTimeClock.vi
ml	import YoctoProxyAPI.YRealTimeClockProxy

Global functions

YRealTimeClock.FindRealTimeClock(**func**)

Retrieves a real-time clock for a given identifier.

YRealTimeClock.FindRealTimeClockInContext(**yctx**, **func**)

Retrieves a real-time clock for a given identifier in a YAPI context.

YRealTimeClock.FirstRealTimeClock()

Starts the enumeration of real-time clocks currently accessible.

YRealTimeClock.FirstRealTimeClockInContext(**yctx**)

Starts the enumeration of real-time clocks currently accessible.

YRealTimeClock.GetSimilarFunctions()

Enumerates all functions of type RealTimeClock available on the devices currently reachable by the library, and returns their unique hardware ID.

`YRealTimeClock` properties

realtimeclock→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

realtimeclock→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

realtimeclock→FunctionId *[read-only]*

Hardware identifier of the real-time clock, without reference to the module.

realtimeclock→HardwareId *[read-only]*

Unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

realtimeclock→IsOnline *[read-only]*

Checks if the function is currently reachable.

realtimeclock→LogicalName *[writable]*

Logical name of the function.

realtimeclock→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

realtimeclock→UtcOffset *[writable]*

Number of seconds between current time and UTC time (time zone).

`YRealTimeClock` methods

realtimeclock→clearCache()

Invalidates the cache.

realtimeclock→describe()

Returns a short text that describes unambiguously the instance of the real-time clock in the form `TYPE(NAME)=SERIAL.FUNCTIONID`.

realtimeclock→get_advertisedValue()

Returns the current value of the real-time clock (no more than 6 characters).

realtimeclock→get_dateTime()

Returns the current time in the form "YYYY/MM/DD hh:mm:ss".

realtimeclock→get_errorMessage()

Returns the error message of the latest error with the real-time clock.

realtimeclock→get_errorType()

Returns the numerical error code of the latest error with the real-time clock.

realtimeclock→get_friendlyName()

Returns a global identifier of the real-time clock in the format `MODULE_NAME.FUNCTION_NAME`.

realtimeclock→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

realtimeclock→get_functionId()

Returns the hardware identifier of the real-time clock, without reference to the module.

realtimeclock→get_hardwareId()

Returns the unique hardware identifier of the real-time clock in the form `SERIAL.FUNCTIONID`.

realtimeclock→get_logicalName()

Returns the logical name of the real-time clock.

realtimeclock→get_module()

Gets the `YModule` object for the device on which the function is located.

realtimeclock→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

realtimeclock→get_serialNumber()

Returns the serial number of the module, as set by the factory.

realtimeclock→get_timeSet()

Returns true if the clock has been set, and false otherwise.

realtimeclock→get_unixTime()

Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).

realtimeclock→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

realtimeclock→get_utcOffset()

Returns the number of seconds between current time and UTC time (time zone).

realtimeclock→isOnline()

Checks if the real-time clock is currently reachable, without raising any error.

realtimeclock→isOnline_async(**callback**, **context**)

Checks if the real-time clock is currently reachable, without raising any error (asynchronous version).

realtimeclock→isReadOnly()

Test if the function is readOnly.

realtimeclock→load(**msValidity**)

Preloads the real-time clock cache with a specified validity duration.

realtimeclock→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

realtimeclock→load_async(**msValidity**, **callback**, **context**)

Preloads the real-time clock cache with a specified validity duration (asynchronous version).

realtimeclock→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

realtimeclock→nextRealTimeClock()

Continues the enumeration of real-time clocks started using `yFirstRealTimeClock()`.

realtimeclock→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

realtimeclock→set_logicalName(**newval**)

Changes the logical name of the real-time clock.

realtimeclock→set_unixTime(**newval**)

Changes the current time.

realtimeclock→set_userData(**data**)

Stores a user context provided as argument in the userData attribute of the function.

realtimeclock→set_utcOffset(**newval**)

Changes the number of seconds between current time and UTC time (time zone).

realtimeclock→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

realtimeclock→wait_async(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRealTimeClock.FindRealTimeClock() YRealTimeClock
YRealTimeClock.FindRealTimeClock()

Retrieves a real-time clock for a given identifier.

```
js      function yFindRealTimeClock( func)
cpp     YRealTimeClock* FindRealTimeClock( string func)
m       +(YRealTimeClock*) FindRealTimeClock : (NSString*) func
pas     TYRealTimeClock yFindRealTimeClock( func: string): TYRealTimeClock
vb      function FindRealTimeClock( ByVal func As String) As YRealTimeClock
cs      static YRealTimeClock FindRealTimeClock( string func)
java    static YRealTimeClock FindRealTimeClock( String func)
uwp     static YRealTimeClock FindRealTimeClock( string func)
py      FindRealTimeClock( func)
php     function FindRealTimeClock( $func)
ts      static FindRealTimeClock( func: string): YRealTimeClock
es      static FindRealTimeClock( func)
dnp     static YRealTimeClockProxy FindRealTimeClock( string func)
cp      static YRealTimeClockProxy * FindRealTimeClock( string func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the real-time clock is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRealTimeClock.isOnline()` to test if the real-time clock is indeed online at a given time. In case of ambiguity when looking for a real-time clock by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the real-time clock, for instance `YHUBGSM3.realTimeClock`.

Returns :

a `YRealTimeClock` object allowing you to drive the real-time clock.

YRealTimeClock.FindRealTimeClockInContext() YRealTimeClock YRealTimeClock.FindRealTimeClockInContext()

Retrieves a real-time clock for a given identifier in a YAPI context.

```
java  static YRealTimeClock FindRealTimeClockInContext( YAPIContext yctx,
                                                        String func)
uwp   static YRealTimeClock FindRealTimeClockInContext( YAPIContext yctx,
                                                        string func)
ts    static FindRealTimeClockInContext( yctx: YAPIContext, func: string): YRealTimeClock
es    static FindRealTimeClockInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the real-time clock is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRealTimeClock.isOnline()` to test if the real-time clock is indeed online at a given time. In case of ambiguity when looking for a real-time clock by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the real-time clock, for instance `YHUBGSM3.realTimeClock`.

Returns :

a `YRealTimeClock` object allowing you to drive the real-time clock.

YRealTimeClock.FirstRealTimeClock() YRealTimeClock
YRealTimeClock.FirstRealTimeClock()

Starts the enumeration of real-time clocks currently accessible.

js	function **yFirstRealTimeClock**( )
cpp	YRealTimeClock * **FirstRealTimeClock**( )
m	+(YRealTimeClock*) **FirstRealTimeClock**
pas	TYRealTimeClock **yFirstRealTimeClock**( ): TYRealTimeClock
vb	function **FirstRealTimeClock**( ) As YRealTimeClock
cs	static YRealTimeClock **FirstRealTimeClock**( )
java	static YRealTimeClock **FirstRealTimeClock**( )
uwp	static YRealTimeClock **FirstRealTimeClock**( )
py	**FirstRealTimeClock**( )
php	function **FirstRealTimeClock**( )
ts	static **FirstRealTimeClock**( ): YRealTimeClock | null
es	static **FirstRealTimeClock**( )

Use the method `YRealTimeClock.nextRealTimeClock()` to iterate on next real-time clocks.

Returns :

a pointer to a `YRealTimeClock` object, corresponding to the first real-time clock currently online, or a `null` pointer if there are none.

YRealTimeClock.FirstRealTimeClockInContext() YRealTimeClock YRealTimeClock.FirstRealTimeClockInContext()

Starts the enumeration of real-time clocks currently accessible.

java	static YRealTimeClock **FirstRealTimeClockInContext**(YAPIContext **yctx**)
uwp	static YRealTimeClock **FirstRealTimeClockInContext**(YAPIContext **yctx**)
ts	static **FirstRealTimeClockInContext**(**yctx**: YAPIContext): YRealTimeClock | null
es	static **FirstRealTimeClockInContext**(**yctx**)

Use the method `YRealTimeClock.nextRealTimeClock()` to iterate on next real-time clocks.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YRealTimeClock` object, corresponding to the first real-time clock currently online, or a `null` pointer if there are none.

YRealTimeClock.GetSimilarFunctions() YRealTimeClock
YRealTimeClock.GetSimilarFunctions()

Enumerates all functions of type RealTimeClock available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YRealTimeClock.FindRealTimeClock` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

realtimeclock→AdvertisedValue — YRealTimeClock

Short string representing the current state of the function.

dnp string **AdvertisedValue**

realtimeclock→FriendlyName — YRealTimeClock

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

realtimeclock→FunctionId — YRealTimeClock

Hardware identifier of the real-time clock, without reference to the module.

dnp string **FunctionId**

For example `relay1`

realtimeclock→HardwareId — YRealTimeClock

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

realtimeclock→IsOnline — YRealTimeClock

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

realtimeclock→LogicalName YRealTimeClock

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

realtimeclock→SerialNumber — YRealTimeClock

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

realtimeclock→UtcOffset — YRealTimeClock

Number of seconds between current time and UTC time (time zone).

dnp int **UtcOffset**

Writable. The timezone is automatically rounded to the nearest multiple of 15 minutes. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

realtimeclock→clearCache() YRealTimeClock

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the real-time clock attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

realtimeclock→describe() YRealTimeClock

Returns a short text that describes unambiguously the instance of the real-time clock in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js    function describe( )
cpp   string describe( )
m     -(NSString*) describe
pas   string describe( ): string
vb    function describe( ) As String
cs    string describe( )
java  String describe( )
py    describe( )
php   function describe( )
ts    async describe( ): Promise<string>
es    async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the real-time clock (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

realtimeclock→get_advertisedValue()
realtimeclock→advertisedValue()

YRealTimeClock

Returns the current value of the real-time clock (no more than 6 characters).

js	function **get_advertisedValue**( )
cpp	string **get_advertisedValue**( )
m	-(NSString*) advertisedValue
pas	string **get_advertisedValue**( ): string
vb	function **get_advertisedValue**( ) As String
cs	string **get_advertisedValue**( )
java	String **get_advertisedValue**( )
uwp	async Task<string> **get_advertisedValue**( )
py	**get_advertisedValue**( )
php	function **get_advertisedValue**( )
ts	async **get_advertisedValue**( ): Promise<string>
es	async **get_advertisedValue**( )
dnp	string **get_advertisedValue**( )
cp	string **get_advertisedValue**( )
cmd	YRealTimeClock **target get_advertisedValue**

Returns :

a string corresponding to the current value of the real-time clock (no more than 6 characters).

On failure, throws an exception or returns `YRealTimeClock.ADVERTISEDVALUE_INVALID`.

realtimeclock→get_dateTime()
realtimeclock→dateTime()

YRealTimeClock

Returns the current time in the form "YYYY/MM/DD hh:mm:ss".

```
js      function get_dateTime( )
cpp     string get_dateTime( )
m       -(NSString*) dateTime
pas     string get_dateTime( ): string
vb      function get_dateTime( ) As String
cs      string get_dateTime( )
java    String get_dateTime( )
uwp     async Task<string> get_dateTime( )
py      get_dateTime( )
php     function get_dateTime( )
ts      async get_dateTime( ): Promise<string>
es      async get_dateTime( )
dnp     string get_dateTime( )
cp      string get_dateTime( )
cmd     YRealTimeClock target get_dateTime
```

Returns :
a string corresponding to the current time in the form "YYYY/MM/DD hh:mm:ss"

On failure, throws an exception or returns `YRealTimeClock.DATETIME_INVALID`.

realtimeclock→get_errorMessage() YRealTimeClock
realtimeclock→errorMessage()

Returns the error message of the latest error with the real-time clock.

js	function **get_errorMessage**( )
cpp	string **get_errorMessage**( )
m	-(NSString*) errorMessage
pas	string **get_errorMessage**( ): string
vb	function **get_errorMessage**( ) As String
cs	string **get_errorMessage**( )
java	String **get_errorMessage**( )
py	**get_errorMessage**( )
php	function **get_errorMessage**( )
ts	**get_errorMessage**( ): string
es	**get_errorMessage**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the real-time clock object

realtimeclock→get_errorType() YRealTimeClock
realtimeclock→errorType()

Returns the numerical error code of the latest error with the real-time clock.

```
js    function get_errorType( )
cpp   YRETCODE get_errorType( )
m     -(YRETCODE) errorType
pas   YRETCODE get_errorType( ): YRETCODE
vb    function get_errorType( ) As YRETCODE
cs    YRETCODE get_errorType( )
java  int get_errorType( )
py    get_errorType( )
php   function get_errorType( )
ts    get_errorType( ): number
es    get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the real-time clock object

realtimeclock→get_friendlyName()
realtimeclock→friendlyName()

YRealTimeClock

Returns a global identifier of the real-time clock in the format MODULE_NAME.FUNCTION_NAME.

js	function **get_friendlyName**( )
cpp	string **get_friendlyName**( )
m	-(NSString*) friendlyName
cs	string **get_friendlyName**( )
java	String **get_friendlyName**( )
py	**get_friendlyName**( )
php	function **get_friendlyName**( )
ts	async **get_friendlyName**( ): Promise<string>
es	async **get_friendlyName**( )
dnp	string **get_friendlyName**( )
cp	string **get_friendlyName**( )

The returned string uses the logical names of the module and of the real-time clock if they are defined, otherwise the serial number of the module and the hardware identifier of the real-time clock (for example: MyCustomName.relay1)

Returns :

a string that uniquely identifies the real-time clock using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns YRealTimeClock.FRIENDLYNAME_INVALID.

realtimeclock→get_functionDescriptor() YRealTimeClock
realtimeclock→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

realtimeclock→get_functionId()
realtimeclock→functionId()

YRealTimeClock

Returns the hardware identifier of the real-time clock, without reference to the module.

js	function **get_functionId**( )
cpp	string **get_functionId**( )
m	-(NSString*) functionId
vb	function **get_functionId**( ) As String
cs	string **get_functionId**( )
java	String **get_functionId**( )
py	**get_functionId**( )
php	function **get_functionId**( )
ts	async **get_functionId**( ): Promise<string>
es	async **get_functionId**( )
dnp	string **get_functionId**( )
cp	string **get_functionId**( )

For example `relay1`

Returns :
a string that identifies the real-time clock (ex: `relay1`)

On failure, throws an exception or returns `YRealTimeClock.FUNCTIONID_INVALID`.

realtimeclock→get_hardwareId() YRealTimeClock
realtimeclock→hardwareId()

Returns the unique hardware identifier of the real-time clock in the form SERIAL.FUNCTIONID.

```
js      function get_hardwareId( )
cpp     string get_hardwareId( )
m       -(NSString*) hardwareId
vb      function get_hardwareId( ) As String
cs      string get_hardwareId( )
java    String get_hardwareId( )
py      get_hardwareId( )
php     function get_hardwareId( )
ts      async get_hardwareId( ): Promise<string>
es      async get_hardwareId( )
dnp     string get_hardwareId( )
cp      string get_hardwareId( )
```

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the real-time clock (for example RELAYLO1-123456.relay1).

Returns :
a string that uniquely identifies the real-time clock (ex: RELAYLO1-123456.relay1)

On failure, throws an exception or returns YRealTimeClock.HARDWAREID_INVALID.

realtimeclock→get_logicalName()
realtimeclock→logicalName()

YRealTimeClock

Returns the logical name of the real-time clock.

js	function **get_logicalName**( )
cpp	string **get_logicalName**( )
m	-(NSString*) logicalName
pas	string **get_logicalName**( ): string
vb	function **get_logicalName**( ) As String
cs	string **get_logicalName**( )
java	String **get_logicalName**( )
uwp	async Task<string> **get_logicalName**( )
py	**get_logicalName**( )
php	function **get_logicalName**( )
ts	async **get_logicalName**( ): Promise<string>
es	async **get_logicalName**( )
dnp	string **get_logicalName**( )
cp	string **get_logicalName**( )
cmd	YRealTimeClock **target get_logicalName**

Returns :

a string corresponding to the logical name of the real-time clock.

On failure, throws an exception or returns `YRealTimeClock.LOGICALNAME_INVALID`.

realtimeclock→get_module()
realtimeclock→module()

YRealTimeClock

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

realtimeclock→get_module_async()
realtimeclock→module_async()

YRealTimeClock

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→get_serialNumber()
realtimeclock→serialNumber()

YRealTimeClock

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YRealTimeClock target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

realtimeclock→get_timeSet()
realtimeclock→timeSet()

YRealTimeClock

Returns true if the clock has been set, and false otherwise.

```
js      function get_timeSet( )
cpp     Y_TIMESET_enum get_timeSet( )
m       -(Y_TIMESET_enum) timeSet
pas     Integer get_timeSet( ): Integer
vb      function get_timeSet( ) As Integer
cs      int get_timeSet( )
java    int get_timeSet( )
uwp     async Task<int> get_timeSet( )
py      get_timeSet( )
php     function get_timeSet( )
ts      async get_timeSet( ): Promise<YRealTimeClock_TimeSet>
es      async get_timeSet( )
dnp     int get_timeSet( )
cp      int get_timeSet( )
cmd     YRealTimeClock target get_timeSet
```

Returns :

either `YRealTimeClock.TIMESET_FALSE` or `YRealTimeClock.TIMESET_TRUE`, according to true if the clock has been set, and false otherwise

On failure, throws an exception or returns `YRealTimeClock.TIMESET_INVALID`.

realtimeclock→get_unixTime()
realtimeclock→unixTime()

YRealTimeClock

Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).

```
js      function get_unixTime( )
cpp     s64 get_unixTime( )
m       -(s64) unixTime
pas     int64 get_unixTime( ): int64
vb      function get_unixTime( ) As Long
cs      long get_unixTime( )
java    long get_unixTime( )
uwp     async Task<long> get_unixTime( )
py      get_unixTime( )
php     function get_unixTime( )
ts      async get_unixTime( ): Promise<number>
es      async get_unixTime( )
dnp     long get_unixTime( )
cp      s64 get_unixTime( )
cmd     YRealTimeClock target get_unixTime
```

Returns :

an integer corresponding to the current time in Unix format (number of elapsed seconds since Jan 1st, 1970)

On failure, throws an exception or returns `YRealTimeClock.UNIXTIME_INVALID`.

realtimeclock→get_userData()
realtimeclock→userData()

YRealTimeClock

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

realtimeclock→get_utcOffset()
realtimeclock→utcOffset()

YRealTimeClock

Returns the number of seconds between current time and UTC time (time zone).

```
js      function get_utcOffset( )
cpp     int get_utcOffset( )
m       -(int) utcOffset
pas     LongInt get_utcOffset( ): LongInt
vb      function get_utcOffset( ) As Integer
cs      int get_utcOffset( )
java    int get_utcOffset( )
uwp     async Task<int> get_utcOffset( )
py      get_utcOffset( )
php     function get_utcOffset( )
ts      async get_utcOffset( ): Promise<number>
es      async get_utcOffset( )
dnp     int get_utcOffset( )
cp      int get_utcOffset( )
cmd     YRealTimeClock target get_utcOffset
```

Returns :

an integer corresponding to the number of seconds between current time and UTC time (time zone)

On failure, throws an exception or returns `YRealTimeClock.UTCOFFSET_INVALID`.

realtimeclock→isOnline() YRealTimeClock

Checks if the real-time clock is currently reachable, without raising any error.

```
js      function isOnline( )
cpp     bool isOnline( )
m       -(BOOL) isOnline
pas     boolean isOnline( ): boolean
vb      function isOnline( ) As Boolean
cs      bool isOnline( )
java    boolean isOnline( )
py      isOnline( )
php     function isOnline( )
ts      async isOnline( ): Promise<boolean>
es      async isOnline( )
dnp     bool isOnline( )
cp      bool isOnline( )
```

If there is a cached value for the real-time clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the real-time clock.

Returns :

`true` if the real-time clock can be reached, and `false` otherwise

realtimeclock→isOnline_async() YRealTimeClock

Checks if the real-time clock is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the real-time clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→isReadOnly() YRealTimeClock

Test if the function is readOnly.

cpp	bool **isReadOnly**( )
m	-(bool) **isReadOnly**
pas	boolean **isReadOnly**( ): boolean
vb	function **isReadOnly**( ) As Boolean
cs	bool **isReadOnly**( )
java	boolean **isReadOnly**( )
uwp	async Task<bool> **isReadOnly**( )
py	**isReadOnly**( )
php	function **isReadOnly**( )
ts	async **isReadOnly**( ): Promise<boolean>
es	async **isReadOnly**( )
dnp	bool **isReadOnly**( )
cp	bool **isReadOnly**( )
cmd	YRealTimeClock **target isReadOnly**

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

realtimeclock→load() YRealTimeClock

Preloads the real-time clock cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→loadAttribute() YRealTimeClock

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

realtimeclock→load_async() YRealTimeClock

Preloads the real-time clock cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or `YAPI.SUCCESS`)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→muteValueCallbacks() YRealTimeClock

Disables the propagation of every new advertised value to the parent hub.

js	function **muteValueCallbacks**( )
cpp	int **muteValueCallbacks**( )
m	-(int) **muteValueCallbacks**
pas	LongInt **muteValueCallbacks**( ): LongInt
vb	function **muteValueCallbacks**( ) As Integer
cs	int **muteValueCallbacks**( )
java	int **muteValueCallbacks**( )
uwp	async Task<int> **muteValueCallbacks**( )
py	**muteValueCallbacks**( )
php	function **muteValueCallbacks**( )
ts	async **muteValueCallbacks**( ): Promise<number>
es	async **muteValueCallbacks**( )
dnp	int **muteValueCallbacks**( )
cp	int **muteValueCallbacks**( )
cmd	YRealTimeClock **target muteValueCallbacks**

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→nextRealTimeClock() YRealTimeClock

Continues the enumeration of real-time clocks started using `yFirstRealTimeClock()`.

js	function **nextRealTimeClock**( )
cpp	YRealTimeClock * **nextRealTimeClock**( )
m	-(nullable YRealTimeClock*) **nextRealTimeClock**
pas	TYRealTimeClock **nextRealTimeClock**( ): TYRealTimeClock
vb	function **nextRealTimeClock**( ) As YRealTimeClock
cs	YRealTimeClock **nextRealTimeClock**( )
java	YRealTimeClock **nextRealTimeClock**( )
uwp	YRealTimeClock **nextRealTimeClock**( )
py	**nextRealTimeClock**( )
php	function **nextRealTimeClock**( )
ts	**nextRealTimeClock**( ): YRealTimeClock | null
es	**nextRealTimeClock**( )

Caution: You can't make any assumption about the returned real-time clocks order. If you want to find a specific a real-time clock, use `RealTimeClock.findRealTimeClock()` and a hardwareID or a logical name.

Returns :

a pointer to a `YRealTimeClock` object, corresponding to a real-time clock currently online, or a `null` pointer if there are no more real-time clocks to enumerate.

realtimeclock→registerValueCallback() YRealTimeClock

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YRealTimeClockValueCallback **callback**)
m	-(int) **registerValueCallback** : (YRealTimeClockValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYRealTimeClockValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YRealTimeClockValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YRealTimeClockValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

realtimeclock→set_logicalName()
realtimeclock→setLogicalName()

YRealTimeClock

Changes the logical name of the real-time clock.

```
js      function set_logicalName( newval)
cpp     int set_logicalName( string newval)
m       -(int) setLogicalName : (NSString*) newval
pas     integer set_logicalName( newval: string): integer
vb      function set_logicalName( ByVal newval As String) As Integer
cs      int set_logicalName( string newval)
java    int set_logicalName( String newval)
uwp     async Task<int> set_logicalName( string newval)
py      set_logicalName( newval)
php     function set_logicalName( $newval)
ts      async set_logicalName( newval: string): Promise<number>
es      async set_logicalName( newval)
dnp     int set_logicalName( string newval)
cp      int set_logicalName( string newval)
cmd     YRealTimeClock target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the real-time clock.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→set_unixTime()
realtimeclock→setUnixTime()

YRealTimeClock

Changes the current time.

js	function **set_unixTime**(**newval**)
cpp	int **set_unixTime**(s64 **newval**)
m	-(int) setUnixTime : (s64) **newval**
pas	integer **set_unixTime**(**newval**: int64): integer
vb	function **set_unixTime**(ByVal **newval** As Long) As Integer
cs	int **set_unixTime**(long **newval**)
java	int **set_unixTime**(long **newval**)
uwp	async Task<int> **set_unixTime**(long **newval**)
py	**set_unixTime**(**newval**)
php	function **set_unixTime**(**$newval**)
ts	async **set_unixTime**(**newval**: number): Promise<number>
es	async **set_unixTime**(**newval**)
dnp	int **set_unixTime**(long **newval**)
cp	int **set_unixTime**(s64 **newval**)
cmd	YRealTimeClock **target set_unixTime newval**

Time is specifid in Unix format (number of elapsed seconds since Jan 1st, 1970).

Parameters :

newval an integer corresponding to the current time

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→set_userData() YRealTimeClock
realtimeclock→setUserData()

Stores a user context provided as argument in the userData attribute of the function.

```
js    function set_userData( data)
cpp   void set_userData( void * data)
m     -(void) setUserData : (id) data
pas   set_userData( data: Tobject)
vb    procedure set_userData( ByVal data As Object)
cs    void set_userData( object data)
java  void set_userData( Object data)
py    set_userData( data)
php   function set_userData( $data)
ts    async set_userData( data: object|null): Promise<void>
es    async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

realtimeclock→set_utcOffset()
realtimeclock→setUtcOffset()

YRealTimeClock

Changes the number of seconds between current time and UTC time (time zone).

```
js      function set_utcOffset( newval)
cpp     int set_utcOffset( int newval)
m       -(int) setUtcOffset : (int) newval
pas     integer set_utcOffset( newval: LongInt): integer
vb      function set_utcOffset( ByVal newval As Integer) As Integer
cs      int set_utcOffset( int newval)
java    int set_utcOffset( int newval)
uwp     async Task<int> set_utcOffset( int newval)
py      set_utcOffset( newval)
php     function set_utcOffset( $newval)
ts      async set_utcOffset( newval: number): Promise<number>
es      async set_utcOffset( newval)
dnp     int set_utcOffset( int newval)
cp      int set_utcOffset( int newval)
cmd     YRealTimeClock target set_utcOffset newval
```

The timezone is automatically rounded to the nearest multiple of 15 minutes. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the number of seconds between current time and UTC time (time zone)

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→unmuteValueCallbacks() YRealTimeClock

Re-enables the propagation of every new advertised value to the parent hub.

```
js      function unmuteValueCallbacks( )
cpp     int unmuteValueCallbacks( )
m       -(int) unmuteValueCallbacks
pas     LongInt unmuteValueCallbacks( ): LongInt
vb      function unmuteValueCallbacks( ) As Integer
cs      int unmuteValueCallbacks( )
java    int unmuteValueCallbacks( )
uwp     async Task<int> unmuteValueCallbacks( )
py      unmuteValueCallbacks( )
php     function unmuteValueCallbacks( )
ts      async unmuteValueCallbacks( ): Promise<number>
es      async unmuteValueCallbacks( )
dnp     int unmuteValueCallbacks( )
cp      int unmuteValueCallbacks( )
cmd     YRealTimeClock target unmuteValueCallbacks
```

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→wait_async() YRealTimeClock

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

8.6. Class YWakeUpMonitor

Wake-up monitor control interface, available for instance in the YoctoHub-GSM-3G-EU, the YoctoHub-GSM-3G-NA, the YoctoHub-GSM-4G or the YoctoHub-Wireless-n

The `YWakeUpMonitor` class handles globally all wake-up sources, as well as automated sleep mode.

In order to use the functions described here, you should include:

es	in HTML: <script src="../../lib/yocto_wakeupmonitor.js"></script> in node.js: require('yoctolib-es2017/yocto_wakeupmonitor.js');
js	<script type='text/javascript' src='yocto_wakeupmonitor.js'></script>
cpp	#include "yocto_wakeupmonitor.h"
m	#import "yocto_wakeupmonitor.h"
pas	uses yocto_wakeupmonitor;
vb	yocto_wakeupmonitor.vb
cs	yocto_wakeupmonitor.cs
java	import com.yoctopuce.YoctoAPI.YWakeUpMonitor;
uwp	import com.yoctopuce.YoctoAPI.YWakeUpMonitor;
py	from yocto_wakeupmonitor import *
php	require_once('yocto_wakeupmonitor.php');
ts	in HTML: import { YWakeUpMonitor } from '../../dist/esm/yocto_wakeupmonitor.js'; in Node.js: import { YWakeUpMonitor } from 'yoctolib-cjs/yocto_wakeupmonitor.js';
dnp	import YoctoProxyAPI.YWakeUpMonitorProxy
cp	#include "yocto_wakeupmonitor_proxy.h"
vi	YWakeUpMonitor.vi
ml	import YoctoProxyAPI.YWakeUpMonitorProxy

Global functions

YWakeUpMonitor.FindWakeUpMonitor(**func**)

Retrieves a wake-up monitor for a given identifier.

YWakeUpMonitor.FindWakeUpMonitorInContext(**yctx**, **func**)

Retrieves a wake-up monitor for a given identifier in a YAPI context.

YWakeUpMonitor.FirstWakeUpMonitor()

Starts the enumeration of wake-up monitors currently accessible.

YWakeUpMonitor.FirstWakeUpMonitorInContext(**yctx**)

Starts the enumeration of wake-up monitors currently accessible.

YWakeUpMonitor.GetSimilarFunctions()

Enumerates all functions of type WakeUpMonitor available on the devices currently reachable by the library, and returns their unique hardware ID.

`YWakeUpMonitor` properties

wakeupmonitor→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

wakeupmonitor→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

wakeupmonitor→FunctionId *[read-only]*

Hardware identifier of the wake-up monitor, without reference to the module.

wakeupmonitor→HardwareId *[read-only]*

Unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

wakeupmonitor→IsOnline *[read-only]*

Checks if the function is currently reachable.

wakeupmonitor→LogicalName *[writable]*

Logical name of the function.

wakeupmonitor→NextWakeUp *[writable]*

Next scheduled wake up date/time (UNIX format).

wakeupmonitor→PowerDuration *[writable]*

Maximal wake up time (in seconds) before automatically going to sleep.

wakeupmonitor→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

`YWakeUpMonitor` methods

wakeupmonitor→clearCache()

Invalidates the cache.

wakeupmonitor→describe()

Returns a short text that describes unambiguously the instance of the wake-up monitor in the form `TYPE(NAME)=SERIAL.FUNCTIONID`.

wakeupmonitor→get_advertisedValue()

Returns the current value of the wake-up monitor (no more than 6 characters).

wakeupmonitor→get_errorMessage()

Returns the error message of the latest error with the wake-up monitor.

wakeupmonitor→get_errorType()

Returns the numerical error code of the latest error with the wake-up monitor.

wakeupmonitor→get_friendlyName()

Returns a global identifier of the wake-up monitor in the format `MODULE_NAME.FUNCTION_NAME`.

wakeupmonitor→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

wakeupmonitor→get_functionId()

Returns the hardware identifier of the wake-up monitor, without reference to the module.

wakeupmonitor→get_hardwareId()

Returns the unique hardware identifier of the wake-up monitor in the form `SERIAL.FUNCTIONID`.

wakeupmonitor→get_logicalName()

Returns the logical name of the wake-up monitor.

wakeupmonitor→get_module()

Gets the `YModule` object for the device on which the function is located.

wakeupmonitor→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

wakeupmonitor→get_nextWakeUp()

Returns the next scheduled wake up date/time (UNIX format).

wakeupmonitor→get_powerDuration()

Returns the maximal wake up time (in seconds) before automatically going to sleep.

wakeupmonitor→get_serialNumber()

Returns the serial number of the module, as set by the factory.

wakeupmonitor→get_sleepCountdown()

Returns the delay before the next sleep period.

wakeupmonitor→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

wakeupmonitor→get_wakeUpReason()

Returns the latest wake up reason.

wakeupmonitor→get_wakeUpState()

Returns the current state of the monitor.

wakeupmonitor→isOnline()

Checks if the wake-up monitor is currently reachable, without raising any error.

wakeupmonitor→isOnline_async(**callback**, **context**)

Checks if the wake-up monitor is currently reachable, without raising any error (asynchronous version).

wakeupmonitor→isReadOnly()

Test if the function is readOnly.

wakeupmonitor→load(**msValidity**)

Preloads the wake-up monitor cache with a specified validity duration.

wakeupmonitor→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

wakeupmonitor→load_async(**msValidity**, **callback**, **context**)

Preloads the wake-up monitor cache with a specified validity duration (asynchronous version).

wakeupmonitor→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

wakeupmonitor→nextWakeUpMonitor()

Continues the enumeration of wake-up monitors started using `yFirstWakeUpMonitor()`.

wakeupmonitor→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

wakeupmonitor→resetSleepCountDown()

Resets the sleep countdown.

wakeupmonitor→set_logicalName(**newval**)

Changes the logical name of the wake-up monitor.

wakeupmonitor→set_nextWakeUp(**newval**)

Changes the days of the week when a wake up must take place.

wakeupmonitor→set_powerDuration(**newval**)

Changes the maximal wake up time (seconds) before automatically going to sleep.

wakeupmonitor→set_sleepCountdown(**newval**)

Changes the delay before the next sleep period.

wakeupmonitor→set_userData(**data**)

Stores a user context provided as argument in the userData attribute of the function.

wakeupmonitor→sleep(**secBeforeSleep**)

Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.

wakeupmonitor→sleepFor(**secUntilWakeUp**, **secBeforeSleep**)

Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.

wakeupmonitor→sleepUntil(**wakeUpTime**, **secBeforeSleep**)

Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.

wakeupmonitor→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

wakeupmonitor→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

wakeupmonitor→wakeUp()

Forces a wake up.

YWakeUpMonitor.FindWakeUpMonitor() YWakeUpMonitor
YWakeUpMonitor.FindWakeUpMonitor()

Retrieves a wake-up monitor for a given identifier.

js	function **yFindWakeUpMonitor**(**func**)
cpp	YWakeUpMonitor* **FindWakeUpMonitor**(string **func**)
m	+(YWakeUpMonitor*) **FindWakeUpMonitor** : (NSString*) **func**
pas	TYWakeUpMonitor **yFindWakeUpMonitor**(**func**: string): TYWakeUpMonitor
vb	function **FindWakeUpMonitor**(ByVal **func** As String) As YWakeUpMonitor
cs	static YWakeUpMonitor **FindWakeUpMonitor**(string **func**)
java	static YWakeUpMonitor **FindWakeUpMonitor**(String **func**)
uwp	static YWakeUpMonitor **FindWakeUpMonitor**(string **func**)
py	**FindWakeUpMonitor**(**func**)
php	function **FindWakeUpMonitor**(**$func**)
ts	static **FindWakeUpMonitor**(**func**: string): YWakeUpMonitor
es	static **FindWakeUpMonitor**(**func**)
dnp	static YWakeUpMonitorProxy **FindWakeUpMonitor**(string **func**)
cp	static YWakeUpMonitorProxy * **FindWakeUpMonitor**(string **func**)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake-up monitor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpMonitor.isOnline()` to test if the wake-up monitor is indeed online at a given time. In case of ambiguity when looking for a wake-up monitor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the wake-up monitor, for instance `YHUBGSM3.wakeUpMonitor`.

Returns :

a `YWakeUpMonitor` object allowing you to drive the wake-up monitor.

YWakeUpMonitor.FindWakeUpMonitorInContext() YWakeUpMonitor YWakeUpMonitor.FindWakeUpMonitorInContext()

Retrieves a wake-up monitor for a given identifier in a YAPI context.

```
java  static YWakeUpMonitor FindWakeUpMonitorInContext( YAPIContext yctx,
                                                        String func)
uwp   static YWakeUpMonitor FindWakeUpMonitorInContext( YAPIContext yctx,
                                                        string func)
ts    static FindWakeUpMonitorInContext( yctx: YAPIContext, func: string): YWakeUpMonitor
es    static FindWakeUpMonitorInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake-up monitor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpMonitor.isOnline()` to test if the wake-up monitor is indeed online at a given time. In case of ambiguity when looking for a wake-up monitor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the wake-up monitor, for instance `YHUBGSM3.wakeUpMonitor`.

Returns :

a `YWakeUpMonitor` object allowing you to drive the wake-up monitor.

YWakeUpMonitor.FirstWakeUpMonitor() YWakeUpMonitor
YWakeUpMonitor.FirstWakeUpMonitor()

Starts the enumeration of wake-up monitors currently accessible.

js	function **yFirstWakeUpMonitor**( )
cpp	YWakeUpMonitor * **FirstWakeUpMonitor**( )
m	+(YWakeUpMonitor*) **FirstWakeUpMonitor**
pas	TYWakeUpMonitor **yFirstWakeUpMonitor**( ): TYWakeUpMonitor
vb	function **FirstWakeUpMonitor**( ) As YWakeUpMonitor
cs	static YWakeUpMonitor **FirstWakeUpMonitor**( )
java	static YWakeUpMonitor **FirstWakeUpMonitor**( )
uwp	static YWakeUpMonitor **FirstWakeUpMonitor**( )
py	**FirstWakeUpMonitor**( )
php	function **FirstWakeUpMonitor**( )
ts	static **FirstWakeUpMonitor**( ): YWakeUpMonitor | null
es	static **FirstWakeUpMonitor**( )

Use the method `YWakeUpMonitor.nextWakeUpMonitor()` to iterate on next wake-up monitors.

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to the first wake-up monitor currently online, or a `null` pointer if there are none.

YWakeUpMonitor.FirstWakeUpMonitorInContext() YWakeUpMonitor YWakeUpMonitor.FirstWakeUpMonitorInContext()

Starts the enumeration of wake-up monitors currently accessible.

java	static YWakeUpMonitor **FirstWakeUpMonitorInContext**(YAPIContext **yctx**)
uwp	static YWakeUpMonitor **FirstWakeUpMonitorInContext**(YAPIContext **yctx**)
ts	static **FirstWakeUpMonitorInContext**(**yctx**: YAPIContext): YWakeUpMonitor | null
es	static **FirstWakeUpMonitorInContext**(**yctx**)

Use the method `YWakeUpMonitor.nextWakeUpMonitor()` to iterate on next wake-up monitors.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to the first wake-up monitor currently online, or a `null` pointer if there are none.

YWakeUpMonitor.GetSimilarFunctions() YWakeUpMonitor YWakeUpMonitor.GetSimilarFunctions()

Enumerates all functions of type WakeUpMonitor available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YWakeUpMonitor.FindWakeUpMonitor` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

wakeupmonitor→AdvertisedValue — YWakeUpMonitor

Short string representing the current state of the function.

dnp string **AdvertisedValue**

wakeupmonitor→FriendlyName — YWakeUpMonitor

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

wakeupmonitor→FunctionId YWakeUpMonitor

Hardware identifier of the wake-up monitor, without reference to the module.

dnp string **FunctionId**

For example `relay1`

wakeupmonitor→HardwareId — YWakeUpMonitor

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

wakeupmonitor→IsOnline — YWakeUpMonitor

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

wakeupmonitor→LogicalName — YWakeUpMonitor

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupmonitor→NextWakeUp — YWakeUpMonitor

Next scheduled wake up date/time (UNIX format).

dnp long **NextWakeUp**

Writable. Changes the days of the week when a wake up must take place.

wakeupmonitor→PowerDuration — YWakeUpMonitor

Maximal wake up time (in seconds) before automatically going to sleep.

dnp int **PowerDuration**

Writable. Changes the maximal wake up time (seconds) before automatically going to sleep. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupmonitor→SerialNumber — YWakeUpMonitor

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

wakeupmonitor→clearCache() YWakeUpMonitor

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the wake-up monitor attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

wakeupmonitor→describe() YWakeUpMonitor

Returns a short text that describes unambiguously the instance of the wake-up monitor in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the wake-up monitor (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

wakeupmonitor→get_advertisedValue() YWakeUpMonitor
wakeupmonitor→advertisedValue()

Returns the current value of the wake-up monitor (no more than 6 characters).

```
js      function get_advertisedValue( )
cpp     string get_advertisedValue( )
m       -(NSString*) advertisedValue
pas     string get_advertisedValue( ): string
vb      function get_advertisedValue( ) As String
cs      string get_advertisedValue( )
java    String get_advertisedValue( )
uwp     async Task<string> get_advertisedValue( )
py      get_advertisedValue( )
php     function get_advertisedValue( )
ts      async get_advertisedValue( ): Promise<string>
es      async get_advertisedValue( )
dnp     string get_advertisedValue( )
cp      string get_advertisedValue( )
cmd     YWakeUpMonitor target get_advertisedValue
```

Returns :

a string corresponding to the current value of the wake-up monitor (no more than 6 characters).

On failure, throws an exception or returns `YWakeUpMonitor.ADVERTISEDVALUE_INVALID`.

wakeupmonitor→get_errorMessage() YWakeUpMonitor
wakeupmonitor→errorMessage()

Returns the error message of the latest error with the wake-up monitor.

js	function **get_errorMessage**( )
cpp	string **get_errorMessage**( )
m	-(NSString*) errorMessage
pas	string **get_errorMessage**( ): string
vb	function **get_errorMessage**( ) As String
cs	string **get_errorMessage**( )
java	String **get_errorMessage**( )
py	**get_errorMessage**( )
php	function **get_errorMessage**( )
ts	**get_errorMessage**( ): string
es	**get_errorMessage**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the wake-up monitor object

wakeupmonitor→get_errorType()
wakeupmonitor→errorType()

YWakeUpMonitor

Returns the numerical error code of the latest error with the wake-up monitor.

```
js      function get_errorType( )
cpp     YRETCODE get_errorType( )
m       -(YRETCODE) errorType
pas     YRETCODE get_errorType( ): YRETCODE
vb      function get_errorType( ) As YRETCODE
cs      YRETCODE get_errorType( )
java    int get_errorType( )
py      get_errorType( )
php     function get_errorType( )
ts      get_errorType( ): number
es      get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the wake-up monitor object

wakeupmonitor→get_friendlyName()
wakeupmonitor→friendlyName()

YWakeUpMonitor

Returns a global identifier of the wake-up monitor in the format `MODULE_NAME.FUNCTION_NAME`.

```
js      function get_friendlyName( )
cpp     string get_friendlyName( )
m       -(NSString*) friendlyName
cs      string get_friendlyName( )
java    String get_friendlyName( )
py      get_friendlyName( )
php     function get_friendlyName( )
ts      async get_friendlyName( ): Promise<string>
es      async get_friendlyName( )
dnp     string get_friendlyName( )
cp      string get_friendlyName( )
```

The returned string uses the logical names of the module and of the wake-up monitor if they are defined, otherwise the serial number of the module and the hardware identifier of the wake-up monitor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the wake-up monitor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `YWakeUpMonitor.FRIENDLYNAME_INVALID`.

wakeupmonitor→get_functionDescriptor() YWakeUpMonitor
wakeupmonitor→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

wakeupmonitor→get_functionId()
wakeupmonitor→functionId()

YWakeUpMonitor

Returns the hardware identifier of the wake-up monitor, without reference to the module.

js	function **get_functionId**( )
cpp	string **get_functionId**( )
m	-(NSString*) functionId
vb	function **get_functionId**( ) As String
cs	string **get_functionId**( )
java	String **get_functionId**( )
py	**get_functionId**( )
php	function **get_functionId**( )
ts	async **get_functionId**( ): Promise<string>
es	async **get_functionId**( )
dnp	string **get_functionId**( )
cp	string **get_functionId**( )

For example `relay1`

Returns :
a string that identifies the wake-up monitor (ex: `relay1`)

On failure, throws an exception or returns `YWakeUpMonitor.FUNCTIONID_INVALID`.

wakeupmonitor→get_hardwareId() YWakeUpMonitor
wakeupmonitor→hardwareId()

Returns the unique hardware identifier of the wake-up monitor in the form SERIAL.FUNCTIONID.

js	function **get_hardwareId**( )
cpp	string **get_hardwareId**( )
m	-(NSString*) hardwareId
vb	function **get_hardwareId**( ) As String
cs	string **get_hardwareId**( )
java	String **get_hardwareId**( )
py	**get_hardwareId**( )
php	function **get_hardwareId**( )
ts	async **get_hardwareId**( ): Promise<string>
es	async **get_hardwareId**( )
dnp	string **get_hardwareId**( )
cp	string **get_hardwareId**( )

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wake-up monitor (for example RELAYLO1-123456.relay1).

Returns :
a string that uniquely identifies the wake-up monitor (ex: RELAYLO1-123456.relay1)

On failure, throws an exception or returns YWakeUpMonitor.HARDWAREID_INVALID.

wakeupmonitor→get_logicalName()
wakeupmonitor→logicalName()

YWakeUpMonitor

Returns the logical name of the wake-up monitor.

```
js      function get_logicalName( )
cpp     string get_logicalName( )
m       -(NSString*) logicalName
pas     string get_logicalName( ): string
vb      function get_logicalName( ) As String
cs      string get_logicalName( )
java    String get_logicalName( )
uwp     async Task<string> get_logicalName( )
py      get_logicalName( )
php     function get_logicalName( )
ts      async get_logicalName( ): Promise<string>
es      async get_logicalName( )
dnp     string get_logicalName( )
cp      string get_logicalName( )
cmd     YWakeUpMonitor target get_logicalName
```

Returns :

a string corresponding to the logical name of the wake-up monitor.

On failure, throws an exception or returns `YWakeUpMonitor.LOGICALNAME_INVALID`.

wakeupmonitor→get_module()
wakeupmonitor→module()

YWakeUpMonitor

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

wakeupmonitor→get_module_async() YWakeUpMonitor
wakeupmonitor→module_async()

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→get_nextWakeUp() YWakeUpMonitor
wakeupmonitor→nextWakeUp()

Returns the next scheduled wake up date/time (UNIX format).

js	function **get_nextWakeUp**( )
cpp	s64 **get_nextWakeUp**( )
m	-(s64) nextWakeUp
pas	int64 **get_nextWakeUp**( ): int64
vb	function **get_nextWakeUp**( ) As Long
cs	long **get_nextWakeUp**( )
java	long **get_nextWakeUp**( )
uwp	async Task<long> **get_nextWakeUp**( )
py	**get_nextWakeUp**( )
php	function **get_nextWakeUp**( )
ts	async **get_nextWakeUp**( ): Promise<number>
es	async **get_nextWakeUp**( )
dnp	long **get_nextWakeUp**( )
cp	s64 **get_nextWakeUp**( )
cmd	YWakeUpMonitor **target get_nextWakeUp**

Returns :

an integer corresponding to the next scheduled wake up date/time (UNIX format)

On failure, throws an exception or returns `YWakeUpMonitor.NEXTWAKEUP_INVALID`.

wakeupmonitor→get_powerDuration()
wakeupmonitor→powerDuration()

YWakeUpMonitor

Returns the maximal wake up time (in seconds) before automatically going to sleep.

```
js      function get_powerDuration( )
cpp     int get_powerDuration( )
m       -(int) powerDuration
pas     LongInt get_powerDuration( ): LongInt
vb      function get_powerDuration( ) As Integer
cs      int get_powerDuration( )
java    int get_powerDuration( )
uwp     async Task<int> get_powerDuration( )
py      get_powerDuration( )
php     function get_powerDuration( )
ts      async get_powerDuration( ): Promise<number>
es      async get_powerDuration( )
dnp     int get_powerDuration( )
cp      int get_powerDuration( )
cmd     YWakeUpMonitor target get_powerDuration
```

Returns :

an integer corresponding to the maximal wake up time (in seconds) before automatically going to sleep

On failure, throws an exception or returns `YWakeUpMonitor.POWERDURATION_INVALID`.

wakeupmonitor→get_serialNumber() YWakeUpMonitor
wakeupmonitor→serialNumber()

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YWakeUpMonitor target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

wakeupmonitor→get_sleepCountdown()
wakeupmonitor→sleepCountdown()

YWakeUpMonitor

Returns the delay before the next sleep period.

js	function **get_sleepCountdown**( )
cpp	int **get_sleepCountdown**( )
m	-(int) sleepCountdown
pas	LongInt **get_sleepCountdown**( ): LongInt
vb	function **get_sleepCountdown**( ) As Integer
cs	int **get_sleepCountdown**( )
java	int **get_sleepCountdown**( )
uwp	async Task<int> **get_sleepCountdown**( )
py	**get_sleepCountdown**( )
php	function **get_sleepCountdown**( )
ts	async **get_sleepCountdown**( ): Promise<number>
es	async **get_sleepCountdown**( )
dnp	int **get_sleepCountdown**( )
cp	int **get_sleepCountdown**( )
cmd	YWakeUpMonitor **target get_sleepCountdown**

Returns :

an integer corresponding to the delay before the next sleep period

On failure, throws an exception or returns `YWakeUpMonitor.SLEEPCOUNTDOWN_INVALID`.

wakeupmonitor→get_userData()
wakeupmonitor→userData()

YWakeUpMonitor

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

wakeupmonitor→get_wakeUpReason()
wakeupmonitor→wakeUpReason()

YWakeUpMonitor

Returns the latest wake up reason.

js	function **get_wakeUpReason**( )
cpp	Y_WAKEUPREASON_enum **get_wakeUpReason**( )
m	-(Y_WAKEUPREASON_enum) wakeUpReason
pas	Integer **get_wakeUpReason**( ): Integer
vb	function **get_wakeUpReason**( ) As Integer
cs	int **get_wakeUpReason**( )
java	int **get_wakeUpReason**( )
uwp	async Task<int> **get_wakeUpReason**( )
py	**get_wakeUpReason**( )
php	function **get_wakeUpReason**( )
ts	async **get_wakeUpReason**( ): Promise<YWakeUpMonitor_WakeUpReason>
es	async **get_wakeUpReason**( )
dnp	int **get_wakeUpReason**( )
cp	int **get_wakeUpReason**( )
cmd	YWakeUpMonitor **target get_wakeUpReason**

Returns :

a value among `YWakeUpMonitor.WAKEUPREASON_USBPOWER`, `YWakeUpMonitor.WAKEUPREASON_EXTPOWER`, `YWakeUpMonitor.WAKEUPREASON_ENDOFSLEEP`, `YWakeUpMonitor.WAKEUPREASON_EXTSIG1`, `YWakeUpMonitor.WAKEUPREASON_SCHEDULE1` and `YWakeUpMonitor.WAKEUPREASON_SCHEDULE2` corresponding to the latest wake up reason

On failure, throws an exception or returns `YWakeUpMonitor.WAKEUPREASON_INVALID`.

wakeupmonitor→get_wakeUpState() YWakeUpMonitor
wakeupmonitor→wakeUpState()

Returns the current state of the monitor.

js	function **get_wakeUpState**( )
cpp	Y_WAKEUPSTATE_enum **get_wakeUpState**( )
m	-(Y_WAKEUPSTATE_enum) wakeUpState
pas	Integer **get_wakeUpState**( ): Integer
vb	function **get_wakeUpState**( ) As Integer
cs	int **get_wakeUpState**( )
java	int **get_wakeUpState**( )
uwp	async Task<int> **get_wakeUpState**( )
py	**get_wakeUpState**( )
php	function **get_wakeUpState**( )
ts	async **get_wakeUpState**( ): Promise<YWakeUpMonitor_WakeUpState>
es	async **get_wakeUpState**( )
dnp	int **get_wakeUpState**( )
cp	int **get_wakeUpState**( )
cmd	YWakeUpMonitor **target** **get_wakeUpState**

Returns :

either `YWakeUpMonitor.WAKEUPSTATE_SLEEPING` or `YWakeUpMonitor.WAKEUPSTATE_AWAKE`, according to the current state of the monitor

On failure, throws an exception or returns `YWakeUpMonitor.WAKEUPSTATE_INVALID`.

wakeupmonitor→isOnline() YWakeUpMonitor

Checks if the wake-up monitor is currently reachable, without raising any error.

js	function **isOnline**( )
cpp	bool **isOnline**( )
m	-(BOOL) **isOnline**
pas	boolean **isOnline**( ): boolean
vb	function **isOnline**( ) As Boolean
cs	bool **isOnline**( )
java	boolean **isOnline**( )
py	**isOnline**( )
php	function **isOnline**( )
ts	async **isOnline**( ): Promise<boolean>
es	async **isOnline**( )
dnp	bool **isOnline**( )
cp	bool **isOnline**( )

If there is a cached value for the wake-up monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wake-up monitor.

Returns :

`true` if the wake-up monitor can be reached, and `false` otherwise

wakeupmonitor→isOnline_async() YWakeUpMonitor

Checks if the wake-up monitor is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the wake-up monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→isReadOnly() YWakeUpMonitor

Test if the function is readOnly.

```
cpp     bool isReadOnly( )
m       -(bool) isReadOnly
pas     boolean isReadOnly( ): boolean
vb      function isReadOnly( ) As Boolean
cs      bool isReadOnly( )
java    boolean isReadOnly( )
uwp     async Task<bool> isReadOnly( )
py      isReadOnly( )
php     function isReadOnly( )
ts      async isReadOnly( ): Promise<boolean>
es      async isReadOnly( )
dnp     bool isReadOnly( )
cp      bool isReadOnly( )
cmd     YWakeUpMonitor target isReadOnly
```

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

wakeupmonitor→load() YWakeUpMonitor

Preloads the wake-up monitor cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→loadAttribute() YWakeUpMonitor

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

wakeupmonitor→load_async() YWakeUpMonitor

Preloads the wake-up monitor cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or `YAPI.SUCCESS`)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→muteValueCallbacks() YWakeUpMonitor

Disables the propagation of every new advertised value to the parent hub.

js	function **muteValueCallbacks**( )
cpp	int **muteValueCallbacks**( )
m	-(int) **muteValueCallbacks**
pas	LongInt **muteValueCallbacks**( ): LongInt
vb	function **muteValueCallbacks**( ) As Integer
cs	int **muteValueCallbacks**( )
java	int **muteValueCallbacks**( )
uwp	async Task<int> **muteValueCallbacks**( )
py	**muteValueCallbacks**( )
php	function **muteValueCallbacks**( )
ts	async **muteValueCallbacks**( ): Promise<number>
es	async **muteValueCallbacks**( )
dnp	int **muteValueCallbacks**( )
cp	int **muteValueCallbacks**( )
cmd	YWakeUpMonitor **target muteValueCallbacks**

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→nextWakeUpMonitor() YWakeUpMonitor

Continues the enumeration of wake-up monitors started using `yFirstWakeUpMonitor()`.

`js`	function **nextWakeUpMonitor**( )
`cpp`	YWakeUpMonitor * **nextWakeUpMonitor**( )
`m`	-(nullable YWakeUpMonitor*) **nextWakeUpMonitor**
`pas`	TYWakeUpMonitor **nextWakeUpMonitor**( ): TYWakeUpMonitor
`vb`	function **nextWakeUpMonitor**( ) As YWakeUpMonitor
`cs`	YWakeUpMonitor **nextWakeUpMonitor**( )
`java`	YWakeUpMonitor **nextWakeUpMonitor**( )
`uwp`	YWakeUpMonitor **nextWakeUpMonitor**( )
`py`	**nextWakeUpMonitor**( )
`php`	function **nextWakeUpMonitor**( )
`ts`	**nextWakeUpMonitor**( ): YWakeUpMonitor | null
`es`	**nextWakeUpMonitor**( )

Caution: You can't make any assumption about the returned wake-up monitors order. If you want to find a specific a wake-up monitor, use `WakeUpMonitor.findWakeUpMonitor()` and a hardwareID or a logical name.

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to a wake-up monitor currently online, or a `null` pointer if there are no more wake-up monitors to enumerate.

wakeupmonitor→registerValueCallback() YWakeUpMonitor

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YWakeUpMonitorValueCallback **callback**)
m	-(int) **registerValueCallback** : (YWakeUpMonitorValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYWakeUpMonitorValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YWakeUpMonitorValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YWakeUpMonitorValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupmonitor→resetSleepCountDown() YWakeUpMonitor

Resets the sleep countdown.

```
js    function resetSleepCountDown( )
cpp   int resetSleepCountDown( )
m     -(int) resetSleepCountDown
pas   LongInt resetSleepCountDown( ): LongInt
vb    function resetSleepCountDown( ) As Integer
cs    int resetSleepCountDown( )
java  int resetSleepCountDown( )
uwp   async Task<int> resetSleepCountDown( )
py    resetSleepCountDown( )
php   function resetSleepCountDown( )
ts    async resetSleepCountDown( ): Promise<number>
es    async resetSleepCountDown( )
dnp   int resetSleepCountDown( )
cp    int resetSleepCountDown( )
cmd   YWakeUpMonitor target resetSleepCountDown
```

Returns :

YAPI.SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_logicalName()
wakeupmonitor→setLogicalName()

YWakeUpMonitor

Changes the logical name of the wake-up monitor.

js	function **set_logicalName**(**newval**)
cpp	int **set_logicalName**(string **newval**)
m	-(int) setLogicalName : (NSString*) **newval**
pas	integer **set_logicalName**(**newval**: string): integer
vb	function **set_logicalName**(ByVal **newval** As String) As Integer
cs	int **set_logicalName**(string **newval**)
java	int **set_logicalName**(String **newval**)
uwp	async Task<int> **set_logicalName**(string **newval**)
py	**set_logicalName**(**newval**)
php	function **set_logicalName**(**$newval**)
ts	async **set_logicalName**(**newval**: string): Promise<number>
es	async **set_logicalName**(**newval**)
dnp	int **set_logicalName**(string **newval**)
cp	int **set_logicalName**(string **newval**)
cmd	YWakeUpMonitor **target set_logicalName newval**

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wake-up monitor.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_nextWakeUp() YWakeUpMonitor
wakeupmonitor→setNextWakeUp()

Changes the days of the week when a wake up must take place.

```
js      function set_nextWakeUp( newval)
cpp     int set_nextWakeUp( s64 newval)
m       -(int) setNextWakeUp : (s64) newval
pas     integer set_nextWakeUp( newval: int64): integer
vb      function set_nextWakeUp( ByVal newval As Long) As Integer
cs      int set_nextWakeUp( long newval)
java    int set_nextWakeUp( long newval)
uwp     async Task<int> set_nextWakeUp( long newval)
py      set_nextWakeUp( newval)
php     function set_nextWakeUp( $newval)
ts      async set_nextWakeUp( newval: number): Promise<number>
es      async set_nextWakeUp( newval)
dnp     int set_nextWakeUp( long newval)
cp      int set_nextWakeUp( s64 newval)
cmd     YWakeUpMonitor target set_nextWakeUp newval
```

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_powerDuration()
wakeupmonitor→setPowerDuration()

YWakeUpMonitor

Changes the maximal wake up time (seconds) before automatically going to sleep.

```
js      function set_powerDuration( newval)
cpp     int set_powerDuration( int newval)
m       -(int) setPowerDuration : (int) newval
pas     integer set_powerDuration( newval: LongInt): integer
vb      function set_powerDuration( ByVal newval As Integer) As Integer
cs      int set_powerDuration( int newval)
java    int set_powerDuration( int newval)
uwp     async Task<int> set_powerDuration( int newval)
py      set_powerDuration( newval)
php     function set_powerDuration( $newval)
ts      async set_powerDuration( newval: number): Promise<number>
es      async set_powerDuration( newval)
dnp     int set_powerDuration( int newval)
cp      int set_powerDuration( int newval)
cmd     YWakeUpMonitor target set_powerDuration newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the maximal wake up time (seconds) before automatically going to sleep

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_sleepCountdown() YWakeUpMonitor
wakeupmonitor→setSleepCountdown()

Changes the delay before the next sleep period.

```
js      function set_sleepCountdown( newval)
cpp     int set_sleepCountdown( int newval)
m       -(int) setSleepCountdown : (int) newval
pas     integer set_sleepCountdown( newval: LongInt): integer
vb      function set_sleepCountdown( ByVal newval As Integer) As Integer
cs      int set_sleepCountdown( int newval)
java    int set_sleepCountdown( int newval)
uwp     async Task<int> set_sleepCountdown( int newval)
py      set_sleepCountdown( newval)
php     function set_sleepCountdown( $newval)
ts      async set_sleepCountdown( newval: number): Promise<number>
es      async set_sleepCountdown( newval)
dnp     int set_sleepCountdown( int newval)
cp      int set_sleepCountdown( int newval)
cmd     YWakeUpMonitor target set_sleepCountdown newval
```

Parameters :

newval an integer corresponding to the delay before the next sleep period

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_userData()
wakeupmonitor→setUserData()

YWakeUpMonitor

Stores a user context provided as argument in the userData attribute of the function.

```
js      function set_userData( data)
cpp     void set_userData( void * data)
m       -(void) setUserData : (id) data
pas     set_userData( data: Tobject)
vb      procedure set_userData( ByVal data As Object)
cs      void set_userData( object data)
java    void set_userData( Object data)
py      set_userData( data)
php     function set_userData( $data)
ts      async set_userData( data: object|null): Promise<void>
es      async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupmonitor→sleep() YWakeUpMonitor

Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.

```
js      function sleep( secBeforeSleep)
cpp     int sleep( int secBeforeSleep)
m       -(int) sleep : (int) secBeforeSleep
pas     LongInt sleep( secBeforeSleep: LongInt): LongInt
vb      function sleep( ByVal secBeforeSleep As Integer) As Integer
cs      int sleep( int secBeforeSleep)
java    int sleep( int secBeforeSleep)
uwp     async Task<int> sleep( int secBeforeSleep)
py      sleep( secBeforeSleep)
php     function sleep( $secBeforeSleep)
ts      async sleep( secBeforeSleep: number): Promise<number>
es      async sleep( secBeforeSleep)
dnp     int sleep( int secBeforeSleep)
cp      int sleep( int secBeforeSleep)
cmd     YWakeUpMonitor target sleep secBeforeSleep
```

Parameters :

secBeforeSleep number of seconds before going into sleep mode,

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepFor() YWakeUpMonitor

Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.

```
js    function sleepFor( secUntilWakeUp, secBeforeSleep)
cpp   int sleepFor( int secUntilWakeUp, int secBeforeSleep)
m     -(int) sleepFor : (int) secUntilWakeUp
                      : (int) secBeforeSleep
pas   LongInt sleepFor( secUntilWakeUp: LongInt,
                        secBeforeSleep: LongInt): LongInt
vb    function sleepFor( ByVal secUntilWakeUp As Integer,
                         ByVal secBeforeSleep As Integer) As Integer
cs    int sleepFor( int secUntilWakeUp, int secBeforeSleep)
java  int sleepFor( int secUntilWakeUp, int secBeforeSleep)
uwp   async Task<int> sleepFor( int secUntilWakeUp, int secBeforeSleep)
py    sleepFor( secUntilWakeUp, secBeforeSleep)
php   function sleepFor( $secUntilWakeUp, $secBeforeSleep)
ts    async sleepFor( secUntilWakeUp: number, secBeforeSleep: number): Promise<number>
es    async sleepFor( secUntilWakeUp, secBeforeSleep)
dnp   int sleepFor( int secUntilWakeUp, int secBeforeSleep)
cp    int sleepFor( int secUntilWakeUp, int secBeforeSleep)
cmd   YWakeUpMonitor target sleepFor secUntilWakeUp secBeforeSleep
```

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

secUntilWakeUp number of seconds before next wake up

secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepUntil() YWakeUpMonitor

Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.

```
js    function sleepUntil( wakeUpTime, secBeforeSleep)
cpp   int sleepUntil( int wakeUpTime, int secBeforeSleep)
m     -(int) sleepUntil : (int) wakeUpTime : (int) secBeforeSleep
pas   LongInt sleepUntil( wakeUpTime: LongInt,
                          secBeforeSleep: LongInt): LongInt
vb    function sleepUntil( ByVal wakeUpTime As Integer,
                           ByVal secBeforeSleep As Integer) As Integer
cs    int sleepUntil( int wakeUpTime, int secBeforeSleep)
java  int sleepUntil( int wakeUpTime, int secBeforeSleep)
uwp   async Task<int> sleepUntil( int wakeUpTime, int secBeforeSleep)
py    sleepUntil( wakeUpTime, secBeforeSleep)
php   function sleepUntil( $wakeUpTime, $secBeforeSleep)
ts    async sleepUntil( wakeUpTime: number, secBeforeSleep: number): Promise<number>
es    async sleepUntil( wakeUpTime, secBeforeSleep)
dnp   int sleepUntil( int wakeUpTime, int secBeforeSleep)
cp    int sleepUntil( int wakeUpTime, int secBeforeSleep)
cmd   YWakeUpMonitor target sleepUntil wakeUpTime secBeforeSleep
```

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

wakeUpTime wake-up datetime (UNIX format)

secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→unmuteValueCallbacks() YWakeUpMonitor

Re-enables the propagation of every new advertised value to the parent hub.

js	function **unmuteValueCallbacks**( )
cpp	int **unmuteValueCallbacks**( )
m	-(int) **unmuteValueCallbacks**
pas	LongInt **unmuteValueCallbacks**( ): LongInt
vb	function **unmuteValueCallbacks**( ) As Integer
cs	int **unmuteValueCallbacks**( )
java	int **unmuteValueCallbacks**( )
uwp	async Task<int> **unmuteValueCallbacks**( )
py	**unmuteValueCallbacks**( )
php	function **unmuteValueCallbacks**( )
ts	async **unmuteValueCallbacks**( ): Promise<number>
es	async **unmuteValueCallbacks**( )
dnp	int **unmuteValueCallbacks**( )
cp	int **unmuteValueCallbacks**( )
cmd	YWakeUpMonitor **target unmuteValueCallbacks**

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→wait_async() YWakeUpMonitor

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

wakeupmonitor→wakeUp() YWakeUpMonitor

Forces a wake up.

js	function **wakeUp**( )
cpp	int **wakeUp**( )
m	-(int) **wakeUp**
pas	LongInt **wakeUp**( ): LongInt
vb	function **wakeUp**( ) As Integer
cs	int **wakeUp**( )
java	int **wakeUp**( )
uwp	async Task<int> **wakeUp**( )
py	**wakeUp**( )
php	function **wakeUp**( )
ts	async **wakeUp**( ): Promise<number>
es	async **wakeUp**( )
dnp	int **wakeUp**( )
cp	int **wakeUp**( )
cmd	YWakeUpMonitor **target wakeUp**

8.7. Class YWakeUpSchedule

Wake up schedule control interface, available for instance in the YoctoHub-GSM-3G-EU, the YoctoHub-GSM-3G-NA, the YoctoHub-GSM-4G or the YoctoHub-Wireless-n

The `YWakeUpSchedule` class implements a wake up condition. The wake up time is specified as a set of months and/or days and/or hours and/or minutes when the wake up should happen.

In order to use the functions described here, you should include:

es	in HTML: <script src="../../lib/yocto_wakeupschedule.js"></script> in node.js: require('yoctolib-es2017/yocto_wakeupschedule.js');
js	<script type='text/javascript' src='yocto_wakeupschedule.js'></script>
cpp	#include "yocto_wakeupschedule.h"
m	#import "yocto_wakeupschedule.h"
pas	uses yocto_wakeupschedule;
vb	yocto_wakeupschedule.vb
cs	yocto_wakeupschedule.cs
java	import com.yoctopuce.YoctoAPI.YWakeUpSchedule;
uwp	import com.yoctopuce.YoctoAPI.YWakeUpSchedule;
py	from yocto_wakeupschedule import *
php	require_once('yocto_wakeupschedule.php');
ts	in HTML: import { YWakeUpSchedule } from '../../dist/esm/yocto_wakeupschedule.js'; in Node.js: import { YWakeUpSchedule } from 'yoctolib-cjs/yocto_wakeupschedule.js';
dnp	import YoctoProxyAPI.YWakeUpScheduleProxy
cp	#include "yocto_wakeupschedule_proxy.h"
vi	YWakeUpSchedule.vi
ml	import YoctoProxyAPI.YWakeUpScheduleProxy

Global functions

YWakeUpSchedule.FindWakeUpSchedule(**func**)

Retrieves a wake up schedule for a given identifier.

YWakeUpSchedule.FindWakeUpScheduleInContext(**yctx**, **func**)

Retrieves a wake up schedule for a given identifier in a YAPI context.

YWakeUpSchedule.FirstWakeUpSchedule()

Starts the enumeration of wake up schedules currently accessible.

YWakeUpSchedule.FirstWakeUpScheduleInContext(**yctx**)

Starts the enumeration of wake up schedules currently accessible.

YWakeUpSchedule.GetSimilarFunctions()

Enumerates all functions of type WakeUpSchedule available on the devices currently reachable by the library, and returns their unique hardware ID.

`YWakeUpSchedule` properties

wakeupschedule→AdvertisedValue *[read-only]*

Short string representing the current state of the function.

wakeupschedule→FriendlyName *[read-only]*

Global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

wakeupschedule→FunctionId *[read-only]*

Hardware identifier of the wake up schedule, without reference to the module.

wakeupschedule→HardwareId *[read-only]*

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

wakeupschedule→Hours *[writable]*

Hours scheduled for wake up.

wakeupschedule→IsOnline *[read-only]*

Checks if the function is currently reachable.

wakeupschedule→LogicalName *[writable]*

Logical name of the function.

wakeupschedule→MinutesA *[writable]*

Minutes in the 00-29 interval of each hour scheduled for wake up.

wakeupschedule→MinutesB *[writable]*

Minutes in the 30-59 interval of each hour scheduled for wake up.

wakeupschedule→MonthDays *[writable]*

Days of the month scheduled for wake up.

wakeupschedule→Months *[writable]*

Months scheduled for wake up.

wakeupschedule→NextOccurence *[read-only]*

Date/time (seconds) of the next wake up occurrence.

wakeupschedule→SerialNumber *[read-only]*

Serial number of the module, as set by the factory.

wakeupschedule→WeekDays *[writable]*

Days of the week scheduled for wake up.

YWakeUpSchedule methods

wakeupschedule→clearCache()

Invalidates the cache.

wakeupschedule→describe()

Returns a short text that describes unambiguously the instance of the wake up schedule in the form TYPE(NAME)=SERIAL.FUNCTIONID.

wakeupschedule→get_advertisedValue()

Returns the current value of the wake up schedule (no more than 6 characters).

wakeupschedule→get_errorMessage()

Returns the error message of the latest error with the wake up schedule.

wakeupschedule→get_errorType()

Returns the numerical error code of the latest error with the wake up schedule.

wakeupschedule→get_friendlyName()

Returns a global identifier of the wake up schedule in the format MODULE_NAME.FUNCTION_NAME.

wakeupschedule→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wakeupschedule→get_functionId()

Returns the hardware identifier of the wake up schedule, without reference to the module.

wakeupschedule→get_hardwareId()

Returns the unique hardware identifier of the wake up schedule in the form SERIAL.FUNCTIONID.

wakeupschedule→get_hours()

Returns the hours scheduled for wake up.

wakeupschedule→get_logicalName()

Returns the logical name of the wake up schedule.

wakeupschedule→get_minutes()

Returns all the minutes of each hour that are scheduled for wake up.

wakeupschedule→get_minutesA()

Returns the minutes in the 00-29 interval of each hour scheduled for wake up.

wakeupschedule→get_minutesB()

Returns the minutes in the 30-59 interval of each hour scheduled for wake up.

wakeupschedule→get_module()

Gets the `YModule` object for the device on which the function is located.

wakeupschedule→get_module_async(**callback**, **context**)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

wakeupschedule→get_monthDays()

Returns the days of the month scheduled for wake up.

wakeupschedule→get_months()

Returns the months scheduled for wake up.

wakeupschedule→get_nextOccurence()

Returns the date/time (seconds) of the next wake up occurrence.

wakeupschedule→get_serialNumber()

Returns the serial number of the module, as set by the factory.

wakeupschedule→get_userData()

Returns the value of the userData attribute, as previously stored using method `set_userData`.

wakeupschedule→get_weekDays()

Returns the days of the week scheduled for wake up.

wakeupschedule→isOnline()

Checks if the wake up schedule is currently reachable, without raising any error.

wakeupschedule→isOnline_async(**callback**, **context**)

Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).

wakeupschedule→isReadOnly()

Test if the function is readOnly.

wakeupschedule→load(**msValidity**)

Preloads the wake up schedule cache with a specified validity duration.

wakeupschedule→loadAttribute(**attrName**)

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

wakeupschedule→load_async(**msValidity**, **callback**, **context**)

Preloads the wake up schedule cache with a specified validity duration (asynchronous version).

wakeupschedule→muteValueCallbacks()

Disables the propagation of every new advertised value to the parent hub.

wakeupschedule→nextWakeUpSchedule()

Continues the enumeration of wake up schedules started using `yFirstWakeUpSchedule()`.

wakeupschedule→registerValueCallback(**callback**)

Registers the callback function that is invoked on every change of advertised value.

wakeupschedule→set_hours(**newval**)

Changes the hours when a wake up must take place.

wakeupschedule→set_logicalName(**newval**)

Changes the logical name of the wake up schedule.

wakeupschedule→set_minutes(**bitmap**)

Changes all the minutes where a wake up must take place.

wakeupschedule→set_minutesA(newval)

Changes the minutes in the 00-29 interval when a wake up must take place.

wakeupschedule→set_minutesB(newval)

Changes the minutes in the 30-59 interval when a wake up must take place.

wakeupschedule→set_monthDays(newval)

Changes the days of the month when a wake up must take place.

wakeupschedule→set_months(newval)

Changes the months when a wake up must take place.

wakeupschedule→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

wakeupschedule→set_weekDays(newval)

Changes the days of the week when a wake up must take place.

wakeupschedule→unmuteValueCallbacks()

Re-enables the propagation of every new advertised value to the parent hub.

wakeupschedule→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWakeUpSchedule.FindWakeUpSchedule() YWakeUpSchedule
YWakeUpSchedule.FindWakeUpSchedule()

Retrieves a wake up schedule for a given identifier.

js	function **yFindWakeUpSchedule**(**func**)
cpp	YWakeUpSchedule* **FindWakeUpSchedule**(string **func**)
m	+(YWakeUpSchedule*) **FindWakeUpSchedule** : (NSString*) **func**
pas	TYWakeUpSchedule **yFindWakeUpSchedule**(**func**: string): TYWakeUpSchedule
vb	function **FindWakeUpSchedule**(ByVal **func** As String) As YWakeUpSchedule
cs	static YWakeUpSchedule **FindWakeUpSchedule**(string **func**)
java	static YWakeUpSchedule **FindWakeUpSchedule**(String **func**)
uwp	static YWakeUpSchedule **FindWakeUpSchedule**(string **func**)
py	**FindWakeUpSchedule**(**func**)
php	function **FindWakeUpSchedule**(**$func**)
ts	static **FindWakeUpSchedule**(**func**: string): YWakeUpSchedule
es	static **FindWakeUpSchedule**(**func**)
dnp	static YWakeUpScheduleProxy **FindWakeUpSchedule**(string **func**)
cp	static YWakeUpScheduleProxy * **FindWakeUpSchedule**(string **func**)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake up schedule is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpSchedule.isOnline()` to test if the wake up schedule is indeed online at a given time. In case of ambiguity when looking for a wake up schedule by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

If a call to this object's is_online() method returns FALSE although you are certain that the matching device is plugged, make sure that you did call registerHub() at application initialization time.

Parameters :

func a string that uniquely characterizes the wake up schedule, for instance `YHUBGSM3.wakeUpSchedule1`.

Returns :

a `YWakeUpSchedule` object allowing you to drive the wake up schedule.

YWakeUpSchedule.FindWakeUpScheduleInContext() YWakeUpSchedule YWakeUpSchedule.FindWakeUpScheduleInContext()

Retrieves a wake up schedule for a given identifier in a YAPI context.

```
java  static YWakeUpSchedule FindWakeUpScheduleInContext( YAPIContext yctx,
                                                          String func)
uwp   static YWakeUpSchedule FindWakeUpScheduleInContext( YAPIContext yctx,
                                                          string func)
ts    static FindWakeUpScheduleInContext( yctx: YAPIContext, func: string): YWakeUpSchedule
es    static FindWakeUpScheduleInContext( yctx, func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake up schedule is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpSchedule.isOnline()` to test if the wake up schedule is indeed online at a given time. In case of ambiguity when looking for a wake up schedule by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

yctx a YAPI context

func a string that uniquely characterizes the wake up schedule, for instance `YHUBGSM3.wakeUpSchedule1`.

Returns :

a `YWakeUpSchedule` object allowing you to drive the wake up schedule.

YWakeUpSchedule.FirstWakeUpSchedule() YWakeUpSchedule
YWakeUpSchedule.FirstWakeUpSchedule()

Starts the enumeration of wake up schedules currently accessible.

js	function **yFirstWakeUpSchedule**( )
cpp	YWakeUpSchedule * **FirstWakeUpSchedule**( )
m	+(YWakeUpSchedule*) **FirstWakeUpSchedule**
pas	TYWakeUpSchedule **yFirstWakeUpSchedule**( ): TYWakeUpSchedule
vb	function **FirstWakeUpSchedule**( ) As YWakeUpSchedule
cs	static YWakeUpSchedule **FirstWakeUpSchedule**( )
java	static YWakeUpSchedule **FirstWakeUpSchedule**( )
uwp	static YWakeUpSchedule **FirstWakeUpSchedule**( )
py	**FirstWakeUpSchedule**( )
php	function **FirstWakeUpSchedule**( )
ts	static **FirstWakeUpSchedule**( ): YWakeUpSchedule | null
es	static **FirstWakeUpSchedule**( )

Use the method `YWakeUpSchedule.nextWakeUpSchedule()` to iterate on next wake up schedules.

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to the first wake up schedule currently online, or a `null` pointer if there are none.

YWakeUpSchedule.FirstWakeUpScheduleInContext() YWakeUpSchedule YWakeUpSchedule.FirstWakeUpScheduleInContext()

Starts the enumeration of wake up schedules currently accessible.

java static YWakeUpSchedule **FirstWakeUpScheduleInContext**(YAPIContext **yctx**)
uwp static YWakeUpSchedule **FirstWakeUpScheduleInContext**(YAPIContext **yctx**)
ts static **FirstWakeUpScheduleInContext**(**yctx**: YAPIContext): YWakeUpSchedule | null
es static **FirstWakeUpScheduleInContext**(**yctx**)

Use the method `YWakeUpSchedule.nextWakeUpSchedule()` to iterate on next wake up schedules.

Parameters :

yctx a YAPI context.

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to the first wake up schedule currently online, or a `null` pointer if there are none.

YWakeUpSchedule.GetSimilarFunctions() YWakeUpSchedule
YWakeUpSchedule.GetSimilarFunctions()

Enumerates all functions of type WakeUpSchedule available on the devices currently reachable by the library, and returns their unique hardware ID.

dnp static new string[] **GetSimilarFunctions**( )

cp static vector<string> **GetSimilarFunctions**( )

Each of these IDs can be provided as argument to the method `YWakeUpSchedule.FindWakeUpSchedule` to obtain an object that can control the corresponding device.

Returns :

an array of strings, each string containing the unique hardwareId of a device function currently connected.

wakeupschedule→AdvertisedValue YWakeUpSchedule

Short string representing the current state of the function.

dnp string **AdvertisedValue**

wakeupschedule→FriendlyName — YWakeUpSchedule

Global identifier of the function in the format MODULE_NAME.FUNCTION_NAME.

dnp string **FriendlyName**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for example: MyCustomName.relay1)

wakeupschedule→FunctionId — YWakeUpSchedule

Hardware identifier of the wake up schedule, without reference to the module.

dnp string **FunctionId**

For example `relay1`

wakeupschedule→HardwareId — YWakeUpSchedule

Unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

dnp string **HardwareId**

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example RELAYLO1-123456.relay1).

wakeupschedule→Hours YWakeUpSchedule

Hours scheduled for wake up.

dnp int **Hours**

Writable. Changes the hours when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→IsOnline — YWakeUpSchedule

Checks if the function is currently reachable.

dnp bool **IsOnline**

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the function.

wakeupschedule→LogicalName YWakeUpSchedule

Logical name of the function.

dnp string **LogicalName**

Writable. You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→MinutesA — YWakeUpSchedule

Minutes in the 00-29 interval of each hour scheduled for wake up.

dnp int **MinutesA**

Writable. Changes the minutes in the 00-29 interval when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→MinutesB — YWakeUpSchedule

Minutes in the 30-59 interval of each hour scheduled for wake up.

dnp int **MinutesB**

Writable. Changes the minutes in the 30-59 interval when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→MonthDays — YWakeUpSchedule

Days of the month scheduled for wake up.

dnp int **MonthDays**

Writable. Changes the days of the month when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→Months YWakeUpSchedule

Months scheduled for wake up.

dnp int **Months**

Writable. Changes the months when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→NextOccurence — YWakeUpSchedule

Date/time (seconds) of the next wake up occurrence.

dnp long **NextOccurence**

wakeupschedule→SerialNumber — YWakeUpSchedule

Serial number of the module, as set by the factory.

dnp string **SerialNumber**

wakeupschedule→WeekDays — YWakeUpSchedule

Days of the week scheduled for wake up.

dnp int **WeekDays**

Writable. Changes the days of the week when a wake up must take place. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

wakeupschedule→clearCache() YWakeUpSchedule

Invalidates the cache.

js	function **clearCache**( )
cpp	void **clearCache**( )
m	-(void) **clearCache**
pas	**clearCache**( )
vb	procedure **clearCache**( )
cs	void **clearCache**( )
java	void **clearCache**( )
py	**clearCache**( )
php	function **clearCache**( )
ts	async **clearCache**( ): Promise<void>
es	async **clearCache**( )

Invalidates the cache of the wake up schedule attributes. Forces the next call to get_xxx() or loadxxx() to use values that come from the device.

wakeupschedule→describe() YWakeUpSchedule

Returns a short text that describes unambiguously the instance of the wake up schedule in the form TYPE(NAME)=SERIAL.FUNCTIONID.

```
js      function describe( )
cpp     string describe( )
m       -(NSString*) describe
pas     string describe( ): string
vb      function describe( ) As String
cs      string describe( )
java    String describe( )
py      describe( )
php     function describe( )
ts      async describe( ): Promise<string>
es      async describe( )
```

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :
a string that describes the wake up schedule (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

wakeupschedule→get_advertisedValue() YWakeUpSchedule
wakeupschedule→advertisedValue()

Returns the current value of the wake up schedule (no more than 6 characters).

js	function **get_advertisedValue**( )
cpp	string **get_advertisedValue**( )
m	-(NSString*) advertisedValue
pas	string **get_advertisedValue**( ): string
vb	function **get_advertisedValue**( ) As String
cs	string **get_advertisedValue**( )
java	String **get_advertisedValue**( )
uwp	async Task<string> **get_advertisedValue**( )
py	**get_advertisedValue**( )
php	function **get_advertisedValue**( )
ts	async **get_advertisedValue**( ): Promise<string>
es	async **get_advertisedValue**( )
dnp	string **get_advertisedValue**( )
cp	string **get_advertisedValue**( )
cmd	YWakeUpSchedule **target get_advertisedValue**

Returns :

a string corresponding to the current value of the wake up schedule (no more than 6 characters).

On failure, throws an exception or returns `YWakeUpSchedule.ADVERTISEDVALUE_INVALID`.

wakeupschedule→get_errorMessage() YWakeUpSchedule
wakeupschedule→errorMessage()

Returns the error message of the latest error with the wake up schedule.

js	function **get_errorMessage**( )
cpp	string **get_errorMessage**( )
m	-(NSString*) errorMessage
pas	string **get_errorMessage**( ): string
vb	function **get_errorMessage**( ) As String
cs	string **get_errorMessage**( )
java	String **get_errorMessage**( )
py	**get_errorMessage**( )
php	function **get_errorMessage**( )
ts	**get_errorMessage**( ): string
es	**get_errorMessage**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a string corresponding to the latest error message that occured while using the wake up schedule object

wakeupschedule→get_errorType() YWakeUpSchedule
wakeupschedule→errorType()

Returns the numerical error code of the latest error with the wake up schedule.

js	function **get_errorType**( )
cpp	YRETCODE **get_errorType**( )
m	-(YRETCODE) errorType
pas	YRETCODE **get_errorType**( ): YRETCODE
vb	function **get_errorType**( ) As YRETCODE
cs	YRETCODE **get_errorType**( )
java	int **get_errorType**( )
py	**get_errorType**( )
php	function **get_errorType**( )
ts	**get_errorType**( ): number
es	**get_errorType**( )

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :
a number corresponding to the code of the latest error that occurred while using the wake up schedule object

wakeupschedule→get_friendlyName()
wakeupschedule→friendlyName()

YWakeUpSchedule

Returns a global identifier of the wake up schedule in the format MODULE_NAME.FUNCTION_NAME.

js	function **get_friendlyName**( )
cpp	string **get_friendlyName**( )
m	-(NSString*) friendlyName
cs	string **get_friendlyName**( )
java	String **get_friendlyName**( )
py	**get_friendlyName**( )
php	function **get_friendlyName**( )
ts	async **get_friendlyName**( ): Promise<string>
es	async **get_friendlyName**( )
dnp	string **get_friendlyName**( )
cp	string **get_friendlyName**( )

The returned string uses the logical names of the module and of the wake up schedule if they are defined, otherwise the serial number of the module and the hardware identifier of the wake up schedule (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the wake up schedule using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `YWakeUpSchedule.FRIENDLYNAME_INVALID`.

wakeupschedule→get_functionDescriptor() YWakeUpSchedule
wakeupschedule→functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function **get_functionDescriptor**( )
cpp	YFUN_DESCR **get_functionDescriptor**( )
m	-(YFUN_DESCR) functionDescriptor
pas	YFUN_DESCR **get_functionDescriptor**( ): YFUN_DESCR
vb	function **get_functionDescriptor**( ) As YFUN_DESCR
cs	YFUN_DESCR **get_functionDescriptor**( )
java	String **get_functionDescriptor**( )
py	**get_functionDescriptor**( )
php	function **get_functionDescriptor**( )
ts	async **get_functionDescriptor**( ): Promise<string>
es	async **get_functionDescriptor**( )

This identifier can be used to test if two instances of `YFunction` reference the same physical function on the same physical device.

Returns :
an identifier of type YFUN_DESCR.

If the function has never been contacted, the returned value is Y$CLASSNAME$.FUNCTIONDESCRIPTOR_INVALID.

wakeupschedule→get_functionId()
wakeupschedule→functionId()

YWakeUpSchedule

Returns the hardware identifier of the wake up schedule, without reference to the module.

```
js      function get_functionId( )
cpp     string get_functionId( )
m       -(NSString*) functionId
vb      function get_functionId( ) As String
cs      string get_functionId( )
java    String get_functionId( )
py      get_functionId( )
php     function get_functionId( )
ts      async get_functionId( ): Promise<string>
es      async get_functionId( )
dnp     string get_functionId( )
cp      string get_functionId( )
```

For example `relay1`

Returns :
a string that identifies the wake up schedule (ex: `relay1`)

On failure, throws an exception or returns `YWakeUpSchedule.FUNCTIONID_INVALID`.

wakeupschedule→get_hardwareId() YWakeUpSchedule
wakeupschedule→hardwareId()

Returns the unique hardware identifier of the wake up schedule in the form SERIAL.FUNCTIONID.

js	function **get_hardwareId**( )
cpp	string **get_hardwareId**( )
m	-(NSString*) hardwareId
vb	function **get_hardwareId**( ) As String
cs	string **get_hardwareId**( )
java	String **get_hardwareId**( )
py	**get_hardwareId**( )
php	function **get_hardwareId**( )
ts	async **get_hardwareId**( ): Promise<string>
es	async **get_hardwareId**( )
dnp	string **get_hardwareId**( )
cp	string **get_hardwareId**( )

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wake up schedule (for example RELAYLO1-123456.relay1).

Returns :
a string that uniquely identifies the wake up schedule (ex: RELAYLO1-123456.relay1)

On failure, throws an exception or returns YWakeUpSchedule.HARDWAREID_INVALID.

wakeupschedule→get_hours()
wakeupschedule→hours()

YWakeUpSchedule

Returns the hours scheduled for wake up.

```
js      function get_hours( )
cpp     int get_hours( )
m       -(int) hours
pas     LongInt get_hours( ): LongInt
vb      function get_hours( ) As Integer
cs      int get_hours( )
java    int get_hours( )
uwp     async Task<int> get_hours( )
py      get_hours( )
php     function get_hours( )
ts      async get_hours( ): Promise<number>
es      async get_hours( )
dnp     int get_hours( )
cp      int get_hours( )
cmd     YWakeUpSchedule target get_hours
```

Returns :
an integer corresponding to the hours scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.HOURS_INVALID`.

wakeupschedule→get_logicalName() YWakeUpSchedule
wakeupschedule→logicalName()

Returns the logical name of the wake up schedule.

js	function **get_logicalName**( )
cpp	string **get_logicalName**( )
m	-(NSString*) logicalName
pas	string **get_logicalName**( ): string
vb	function **get_logicalName**( ) As String
cs	string **get_logicalName**( )
java	String **get_logicalName**( )
uwp	async Task<string> **get_logicalName**( )
py	**get_logicalName**( )
php	function **get_logicalName**( )
ts	async **get_logicalName**( ): Promise<string>
es	async **get_logicalName**( )
dnp	string **get_logicalName**( )
cp	string **get_logicalName**( )
cmd	YWakeUpSchedule **target get_logicalName**

Returns :

a string corresponding to the logical name of the wake up schedule.

On failure, throws an exception or returns `YWakeUpSchedule.LOGICALNAME_INVALID`.

wakeupschedule→get_minutes()
wakeupschedule→minutes()

YWakeUpSchedule

Returns all the minutes of each hour that are scheduled for wake up.

js	function **get_minutes**( )
cpp	s64 **get_minutes**( )
m	-(s64) minutes
pas	int64 **get_minutes**( ): int64
vb	function **get_minutes**( ) As Long
cs	long **get_minutes**( )
java	long **get_minutes**( )
uwp	async Task<long> **get_minutes**( )
py	**get_minutes**( )
php	function **get_minutes**( )
ts	async **get_minutes**( ): Promise<number>
es	async **get_minutes**( )
dnp	long **get_minutes**( )
cp	s64 **get_minutes**( )
cmd	YWakeUpSchedule **target get_minutes**

wakeupschedule→get_minutesA() YWakeUpSchedule
wakeupschedule→minutesA()

Returns the minutes in the 00-29 interval of each hour scheduled for wake up.

js	function **get_minutesA**( )
cpp	int **get_minutesA**( )
m	-(int) minutesA
pas	LongInt **get_minutesA**( ): LongInt
vb	function **get_minutesA**( ) As Integer
cs	int **get_minutesA**( )
java	int **get_minutesA**( )
uwp	async Task<int> **get_minutesA**( )
py	**get_minutesA**( )
php	function **get_minutesA**( )
ts	async **get_minutesA**( ): Promise<number>
es	async **get_minutesA**( )
dnp	int **get_minutesA**( )
cp	int **get_minutesA**( )
cmd	YWakeUpSchedule **target get_minutesA**

Returns :

an integer corresponding to the minutes in the 00-29 interval of each hour scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.MINUTESA_INVALID`.

wakeupschedule→get_minutesB()
wakeupschedule→minutesB()

YWakeUpSchedule

Returns the minutes in the 30-59 interval of each hour scheduled for wake up.

```
js      function get_minutesB( )
cpp     int get_minutesB( )
m       -(int) minutesB
pas     LongInt get_minutesB( ): LongInt
vb      function get_minutesB( ) As Integer
cs      int get_minutesB( )
java    int get_minutesB( )
uwp     async Task<int> get_minutesB( )
py      get_minutesB( )
php     function get_minutesB( )
ts      async get_minutesB( ): Promise<number>
es      async get_minutesB( )
dnp     int get_minutesB( )
cp      int get_minutesB( )
cmd     YWakeUpSchedule target get_minutesB
```

Returns :

an integer corresponding to the minutes in the 30-59 interval of each hour scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.MINUTESB_INVALID`.

wakeupschedule→get_module()
wakeupschedule→module()

YWakeUpSchedule

Gets the YModule object for the device on which the function is located.

js	function **get_module**( )
cpp	YModule * **get_module**( )
m	-(YModule*) module
pas	TYModule **get_module**( ): TYModule
vb	function **get_module**( ) As YModule
cs	YModule **get_module**( )
java	YModule **get_module**( )
py	**get_module**( )
php	function **get_module**( )
ts	async **get_module**( ): Promise<YModule>
es	async **get_module**( )
dnp	YModuleProxy **get_module**( )
cp	YModuleProxy * **get_module**( )

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :
an instance of YModule

wakeupschedule→get_module_async() YWakeUpSchedule
wakeupschedule→module_async()

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking Firefox JavaScript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous JavasSript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→get_monthDays() YWakeUpSchedule
wakeupschedule→monthDays()

Returns the days of the month scheduled for wake up.

js	function **get_monthDays**( )
cpp	int **get_monthDays**( )
m	-(int) monthDays
pas	LongInt **get_monthDays**( ): LongInt
vb	function **get_monthDays**( ) As Integer
cs	int **get_monthDays**( )
java	int **get_monthDays**( )
uwp	async Task<int> **get_monthDays**( )
py	**get_monthDays**( )
php	function **get_monthDays**( )
ts	async **get_monthDays**( ): Promise<number>
es	async **get_monthDays**( )
dnp	int **get_monthDays**( )
cp	int **get_monthDays**( )
cmd	YWakeUpSchedule **target get_monthDays**

Returns :

an integer corresponding to the days of the month scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.MONTHDAYS_INVALID`.

wakeupschedule→get_months()
wakeupschedule→months()

YWakeUpSchedule

Returns the months scheduled for wake up.

```
js      function get_months( )
cpp     int get_months( )
m       -(int) months
pas     LongInt get_months( ): LongInt
vb      function get_months( ) As Integer
cs      int get_months( )
java    int get_months( )
uwp     async Task<int> get_months( )
py      get_months( )
php     function get_months( )
ts      async get_months( ): Promise<number>
es      async get_months( )
dnp     int get_months( )
cp      int get_months( )
cmd     YWakeUpSchedule target get_months
```

Returns :

an integer corresponding to the months scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.MONTHS_INVALID`.

wakeupschedule→get_nextOccurence() YWakeUpSchedule
wakeupschedule→nextOccurence()

Returns the date/time (seconds) of the next wake up occurrence.

```
js      function get_nextOccurence( )
cpp     s64 get_nextOccurence( )
m       -(s64) nextOccurence
pas     int64 get_nextOccurence( ): int64
vb      function get_nextOccurence( ) As Long
cs      long get_nextOccurence( )
java    long get_nextOccurence( )
uwp     async Task<long> get_nextOccurence( )
py      get_nextOccurence( )
php     function get_nextOccurence( )
ts      async get_nextOccurence( ): Promise<number>
es      async get_nextOccurence( )
dnp     long get_nextOccurence( )
cp      s64 get_nextOccurence( )
cmd     YWakeUpSchedule target get_nextOccurence
```

Returns :

an integer corresponding to the date/time (seconds) of the next wake up occurrence

On failure, throws an exception or returns `YWakeUpSchedule.NEXTOCCURENCE_INVALID`.

wakeupschedule→get_serialNumber() YWakeUpSchedule
wakeupschedule→serialNumber()

Returns the serial number of the module, as set by the factory.

```
js      function get_serialNumber( )
cpp     string get_serialNumber( )
m       -(NSString*) serialNumber
pas     string get_serialNumber( ): string
vb      function get_serialNumber( ) As String
cs      string get_serialNumber( )
java    String get_serialNumber( )
uwp     async Task<string> get_serialNumber( )
py      get_serialNumber( )
php     function get_serialNumber( )
ts      async get_serialNumber( ): Promise<string>
es      async get_serialNumber( )
dnp     string get_serialNumber( )
cp      string get_serialNumber( )
cmd     YWakeUpSchedule target get_serialNumber
```

Returns :

a string corresponding to the serial number of the module, as set by the factory.

On failure, throws an exception or returns YFunction.SERIALNUMBER_INVALID.

wakeupschedule→get_userData()
wakeupschedule→userData()

YWakeUpSchedule

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function **get_userData**( )
cpp	void * **get_userData**( )
m	-(id) userData
pas	Tobject **get_userData**( ): Tobject
vb	function **get_userData**( ) As Object
cs	object **get_userData**( )
java	Object **get_userData**( )
py	**get_userData**( )
php	function **get_userData**( )
ts	async **get_userData**( ): Promise<object|null>
es	async **get_userData**( )

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :
the object stored previously by the caller.

wakeupschedule→get_weekDays()
wakeupschedule→weekDays()

YWakeUpSchedule

Returns the days of the week scheduled for wake up.

```
js      function get_weekDays( )
cpp     int get_weekDays( )
m       -(int) weekDays
pas     LongInt get_weekDays( ): LongInt
vb      function get_weekDays( ) As Integer
cs      int get_weekDays( )
java    int get_weekDays( )
uwp     async Task<int> get_weekDays( )
py      get_weekDays( )
php     function get_weekDays( )
ts      async get_weekDays( ): Promise<number>
es      async get_weekDays( )
dnp     int get_weekDays( )
cp      int get_weekDays( )
cmd     YWakeUpSchedule target get_weekDays
```

Returns :

an integer corresponding to the days of the week scheduled for wake up

On failure, throws an exception or returns `YWakeUpSchedule.WEEKDAYS_INVALID`.

wakeupschedule→isOnline() YWakeUpSchedule

Checks if the wake up schedule is currently reachable, without raising any error.

js	function **isOnline**( )
cpp	bool **isOnline**( )
m	-(BOOL) **isOnline**
pas	boolean **isOnline**( ): boolean
vb	function **isOnline**( ) As Boolean
cs	bool **isOnline**( )
java	boolean **isOnline**( )
py	**isOnline**( )
php	function **isOnline**( )
ts	async **isOnline**( ): Promise<boolean>
es	async **isOnline**( )
dnp	bool **isOnline**( )
cp	bool **isOnline**( )

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wake up schedule.

Returns :
`true` if the wake up schedule can be reached, and `false` otherwise

wakeupschedule→isOnline_async() YWakeUpSchedule

Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context)
```

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→isReadOnly() YWakeUpSchedule

Test if the function is readOnly.

cpp	bool **isReadOnly**( )
m	-(bool) **isReadOnly**
pas	boolean **isReadOnly**( ): boolean
vb	function **isReadOnly**( ) As Boolean
cs	bool **isReadOnly**( )
java	boolean **isReadOnly**( )
uwp	async Task<bool> **isReadOnly**( )
py	**isReadOnly**( )
php	function **isReadOnly**( )
ts	async **isReadOnly**( ): Promise<boolean>
es	async **isReadOnly**( )
dnp	bool **isReadOnly**( )
cp	bool **isReadOnly**( )
cmd	YWakeUpSchedule **target isReadOnly**

Return `true` if the function is write protected or that the function is not available.

Returns :
`true` if the function is readOnly or not online.

wakeupschedule→load() YWakeUpSchedule

Preloads the wake up schedule cache with a specified validity duration.

```
js      function load( msValidity)
cpp     YRETCODE load( int msValidity)
m       -(YRETCODE) load : (u64) msValidity
pas     YRETCODE load( msValidity: u64): YRETCODE
vb      function load( ByVal msValidity As Long) As YRETCODE
cs      YRETCODE load( ulong msValidity)
java    int load( long msValidity)
py      load( msValidity)
php     function load( $msValidity)
ts      async load( msValidity: number): Promise<number>
es      async load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI.SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→loadAttribute() YWakeUpSchedule

Returns the current value of a single function attribute, as a text string, as quickly as possible but without using the cached value.

```
js      function loadAttribute( attrName)
cpp     string loadAttribute( string attrName)
m       -(NSString*) loadAttribute : (NSString*) attrName
pas     string loadAttribute( attrName: string): string
vb      function loadAttribute( ByVal attrName As String) As String
cs      string loadAttribute( string attrName)
java    String loadAttribute( String attrName)
uwp     async Task<string> loadAttribute( string attrName)
py      loadAttribute( attrName)
php     function loadAttribute( $attrName)
ts      async loadAttribute( attrName: string): Promise<string>
es      async loadAttribute( attrName)
dnp     string loadAttribute( string attrName)
cp      string loadAttribute( string attrName)
```

Parameters :

attrName the name of the requested attribute

Returns :

a string with the value of the the attribute

On failure, throws an exception or returns an empty string.

wakeupschedule→load_async() YWakeUpSchedule

Preloads the wake up schedule cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

This asynchronous version exists only in JavaScript. It uses a callback instead of a return value in order to avoid blocking the JavaScript virtual machine.

Parameters :

msValidity	an integer corresponding to the validity of the loaded function parameters, in milliseconds
callback	callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI.SUCCESS)
context	caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→muteValueCallbacks() YWakeUpSchedule

Disables the propagation of every new advertised value to the parent hub.

js	function **muteValueCallbacks**( )
cpp	int **muteValueCallbacks**( )
m	-(int) **muteValueCallbacks**
pas	LongInt **muteValueCallbacks**( ): LongInt
vb	function **muteValueCallbacks**( ) As Integer
cs	int **muteValueCallbacks**( )
java	int **muteValueCallbacks**( )
uwp	async Task<int> **muteValueCallbacks**( )
py	**muteValueCallbacks**( )
php	function **muteValueCallbacks**( )
ts	async **muteValueCallbacks**( ): Promise<number>
es	async **muteValueCallbacks**( )
dnp	int **muteValueCallbacks**( )
cp	int **muteValueCallbacks**( )
cmd	YWakeUpSchedule **target muteValueCallbacks**

You can use this function to save bandwidth and CPU on computers with limited resources, or to prevent unwanted invocations of the HTTP callback. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→nextWakeUpSchedule() YWakeUpSchedule

Continues the enumeration of wake up schedules started using `yFirstWakeUpSchedule()`.

js	function **nextWakeUpSchedule**( )
cpp	YWakeUpSchedule * **nextWakeUpSchedule**( )
m	-(nullable YWakeUpSchedule*) **nextWakeUpSchedule**
pas	TYWakeUpSchedule **nextWakeUpSchedule**( ): TYWakeUpSchedule
vb	function **nextWakeUpSchedule**( ) As YWakeUpSchedule
cs	YWakeUpSchedule **nextWakeUpSchedule**( )
java	YWakeUpSchedule **nextWakeUpSchedule**( )
uwp	YWakeUpSchedule **nextWakeUpSchedule**( )
py	**nextWakeUpSchedule**( )
php	function **nextWakeUpSchedule**( )
ts	**nextWakeUpSchedule**( ): YWakeUpSchedule | null
es	**nextWakeUpSchedule**( )

Caution: You can't make any assumption about the returned wake up schedules order. If you want to find a specific a wake up schedule, use `WakeUpSchedule.findWakeUpSchedule()` and a hardwareID or a logical name.

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to a wake up schedule currently online, or a `null` pointer if there are no more wake up schedules to enumerate.

wakeupschedule→registerValueCallback() YWakeUpSchedule

Registers the callback function that is invoked on every change of advertised value.

js	function **registerValueCallback**(**callback**)
cpp	int **registerValueCallback**(YWakeUpScheduleValueCallback **callback**)
m	-(int) **registerValueCallback** : (YWakeUpScheduleValueCallback _Nullable) **callback**
pas	LongInt **registerValueCallback**(**callback**: TYWakeUpScheduleValueCallback): LongInt
vb	function **registerValueCallback**(ByVal **callback** As YWakeUpScheduleValueCallback) As Integer
cs	int **registerValueCallback**(ValueCallback **callback**)
java	int **registerValueCallback**(UpdateCallback **callback**)
uwp	async Task<int> **registerValueCallback**(ValueCallback **callback**)
py	**registerValueCallback**(**callback**)
php	function **registerValueCallback**(**$callback**)
ts	async **registerValueCallback**(**callback**: YWakeUpScheduleValueCallback | null): Promise<number>
es	async **registerValueCallback**(**callback**)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupschedule→set_hours()
wakeupschedule→setHours()

YWakeUpSchedule

Changes the hours when a wake up must take place.

js	function **set_hours**(**newval**)
cpp	int **set_hours**(int **newval**)
m	-(int) setHours : (int) **newval**
pas	integer **set_hours**(**newval**: LongInt): integer
vb	function **set_hours**(ByVal **newval** As Integer) As Integer
cs	int **set_hours**(int **newval**)
java	int **set_hours**(int **newval**)
uwp	async Task<int> **set_hours**(int **newval**)
py	**set_hours**(**newval**)
php	function **set_hours**(**$newval**)
ts	async **set_hours**(**newval**: number): Promise<number>
es	async **set_hours**(**newval**)
dnp	int **set_hours**(int **newval**)
cp	int **set_hours**(int **newval**)
cmd	YWakeUpSchedule **target set_hours newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the hours when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_logicalName()
wakeupschedule→setLogicalName()

YWakeUpSchedule

Changes the logical name of the wake up schedule.

js	function **set_logicalName**(**newval**)
cpp	int **set_logicalName**(string **newval**)
m	-(int) setLogicalName : (NSString*) **newval**
pas	integer **set_logicalName**(**newval**: string): integer
vb	function **set_logicalName**(ByVal **newval** As String) As Integer
cs	int **set_logicalName**(string **newval**)
java	int **set_logicalName**(String **newval**)
uwp	async Task<int> **set_logicalName**(string **newval**)
py	**set_logicalName**(**newval**)
php	function **set_logicalName**(**$newval**)
ts	async **set_logicalName**(**newval**: string): Promise<number>
es	async **set_logicalName**(**newval**)
dnp	int **set_logicalName**(string **newval**)
cp	int **set_logicalName**(string **newval**)
cmd	YWakeUpSchedule **target set_logicalName newval**

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wake up schedule.

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutes()
wakeupschedule→setMinutes()

YWakeUpSchedule

Changes all the minutes where a wake up must take place.

```
js    function set_minutes( bitmap)
cpp   int set_minutes( s64 bitmap)
m     -(int) setMinutes : (s64) bitmap
pas   LongInt set_minutes( bitmap: int64): LongInt
vb    function set_minutes( ByVal bitmap As Long) As Integer
cs    int set_minutes( long bitmap)
java  int set_minutes( long bitmap)
uwp   async Task<int> set_minutes( long bitmap)
py    set_minutes( bitmap)
php   function set_minutes( $bitmap)
ts    async set_minutes( bitmap: number): Promise<number>
es    async set_minutes( bitmap)
dnp   int set_minutes( long bitmap)
cp    int set_minutes( s64 bitmap)
cmd   YWakeUpSchedule target set_minutes bitmap
```

Parameters :

bitmap Minutes 00-59 of each hour scheduled for wake up.

Returns :

YAPI.SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutesA() YWakeUpSchedule
wakeupschedule→setMinutesA()

Changes the minutes in the 00-29 interval when a wake up must take place.

js	function **set_minutesA**(**newval**)
cpp	int **set_minutesA**(int **newval**)
m	-(int) setMinutesA : (int) **newval**
pas	integer **set_minutesA**(**newval**: LongInt): integer
vb	function **set_minutesA**(ByVal **newval** As Integer) As Integer
cs	int **set_minutesA**(int **newval**)
java	int **set_minutesA**(int **newval**)
uwp	async Task<int> **set_minutesA**(int **newval**)
py	**set_minutesA**(**newval**)
php	function **set_minutesA**(**$newval**)
ts	async **set_minutesA**(**newval**: number): Promise<number>
es	async **set_minutesA**(**newval**)
dnp	int **set_minutesA**(int **newval**)
cp	int **set_minutesA**(int **newval**)
cmd	YWakeUpSchedule **target set_minutesA newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the minutes in the 00-29 interval when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutesB() YWakeUpSchedule
wakeupschedule→setMinutesB()

Changes the minutes in the 30-59 interval when a wake up must take place.

js	function **set_minutesB**(**newval**)
cpp	int **set_minutesB**(int **newval**)
m	-(int) setMinutesB : (int) **newval**
pas	integer **set_minutesB**(**newval**: LongInt): integer
vb	function **set_minutesB**(ByVal **newval** As Integer) As Integer
cs	int **set_minutesB**(int **newval**)
java	int **set_minutesB**(int **newval**)
uwp	async Task<int> **set_minutesB**(int **newval**)
py	**set_minutesB**(**newval**)
php	function **set_minutesB**(**$newval**)
ts	async **set_minutesB**(**newval**: number): Promise<number>
es	async **set_minutesB**(**newval**)
dnp	int **set_minutesB**(int **newval**)
cp	int **set_minutesB**(int **newval**)
cmd	YWakeUpSchedule **target set_minutesB newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the minutes in the 30-59 interval when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_monthDays() YWakeUpSchedule
wakeupschedule→setMonthDays()

Changes the days of the month when a wake up must take place.

js	function **set_monthDays**(**newval**)
cpp	int **set_monthDays**(int **newval**)
m	-(int) setMonthDays : (int) **newval**
pas	integer **set_monthDays**(**newval**: LongInt): integer
vb	function **set_monthDays**(ByVal **newval** As Integer) As Integer
cs	int **set_monthDays**(int **newval**)
java	int **set_monthDays**(int **newval**)
uwp	async Task<int> **set_monthDays**(int **newval**)
py	**set_monthDays**(**newval**)
php	function **set_monthDays**(**$newval**)
ts	async **set_monthDays**(**newval**: number): Promise<number>
es	async **set_monthDays**(**newval**)
dnp	int **set_monthDays**(int **newval**)
cp	int **set_monthDays**(int **newval**)
cmd	YWakeUpSchedule **target set_monthDays newval**

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the days of the month when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_months()
wakeupschedule→setMonths()

YWakeUpSchedule

Changes the months when a wake up must take place.

```
js      function set_months( newval)
cpp     int set_months( int newval)
m       -(int) setMonths : (int) newval
pas     integer set_months( newval: LongInt): integer
vb      function set_months( ByVal newval As Integer) As Integer
cs      int set_months( int newval)
java    int set_months( int newval)
uwp     async Task<int> set_months( int newval)
py      set_months( newval)
php     function set_months( $newval)
ts      async set_months( newval: number): Promise<number>
es      async set_months( newval)
dnp     int set_months( int newval)
cp      int set_months( int newval)
cmd     YWakeUpSchedule target set_months newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the months when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_userData()
wakeupschedule→setUserData()

YWakeUpSchedule

Stores a user context provided as argument in the userData attribute of the function.

```
js      function set_userData( data)
cpp     void set_userData( void * data)
m       -(void) setUserData : (id) data
pas     set_userData( data: Tobject)
vb      procedure set_userData( ByVal data As Object)
cs      void set_userData( object data)
java    void set_userData( Object data)
py      set_userData( data)
php     function set_userData( $data)
ts      async set_userData( data: object|null): Promise<void>
es      async set_userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupschedule→set_weekDays()
wakeupschedule→setWeekDays()

YWakeUpSchedule

Changes the days of the week when a wake up must take place.

```
js      function set_weekDays( newval)
cpp     int set_weekDays( int newval)
m       -(int) setWeekDays : (int) newval
pas     integer set_weekDays( newval: LongInt): integer
vb      function set_weekDays( ByVal newval As Integer) As Integer
cs      int set_weekDays( int newval)
java    int set_weekDays( int newval)
uwp     async Task<int> set_weekDays( int newval)
py      set_weekDays( newval)
php     function set_weekDays( $newval)
ts      async set_weekDays( newval: number): Promise<number>
es      async set_weekDays( newval)
dnp     int set_weekDays( int newval)
cp      int set_weekDays( int newval)
cmd     YWakeUpSchedule target set_weekDays newval
```

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

`YAPI.SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→unmuteValueCallbacks() YWakeUpSchedule

Re-enables the propagation of every new advertised value to the parent hub.

js	function **unmuteValueCallbacks**( )
cpp	int **unmuteValueCallbacks**( )
m	-(int) **unmuteValueCallbacks**
pas	LongInt **unmuteValueCallbacks**( ): LongInt
vb	function **unmuteValueCallbacks**( ) As Integer
cs	int **unmuteValueCallbacks**( )
java	int **unmuteValueCallbacks**( )
uwp	async Task<int> **unmuteValueCallbacks**( )
py	**unmuteValueCallbacks**( )
php	function **unmuteValueCallbacks**( )
ts	async **unmuteValueCallbacks**( ): Promise<number>
es	async **unmuteValueCallbacks**( )
dnp	int **unmuteValueCallbacks**( )
cp	int **unmuteValueCallbacks**( )
cmd	YWakeUpSchedule **target unmuteValueCallbacks**

This function reverts the effect of a previous call to `muteValueCallbacks()`. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Returns :
`YAPI.SUCCESS` when the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→wait_async() YWakeUpSchedule

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
ts  wait_async( callback: Function, context: object)
es  wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the JavaScript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

9. Troubleshooting

9.1. Where to start?

If it is the first time that you use a Yoctopuce module and you do not really know where to start, have a look at the Yoctopuce blog. There is a section dedicated to beginners [1].

9.2. Programming examples don't seem to work

Most of Yoctopuce API programming examples are command line programs and require some parameters to work properly. You have to start them from your operating system command prompt, or configure your IDE to run them with the proper parameters. [2].

9.3. Linux and USB

To work correctly under Linux, the the library needs to have write access to all the Yoctopuce USB peripherals. However, by default under Linux, USB privileges of the non-root users are limited to read access. To avoid having to run the *VirtualHub* as root, you need to create a new *udev* rule to authorize one or several users to have write access to the Yoctopuce peripherals.

To add a new *udev* rule to your installation, you must add a file with a name following the "`##-arbitraryName.rules`" format, in the "`/etc/udev/rules.d`" directory. When the system is starting, *udev* reads all the files with a "`.rules`" extension in this directory, respecting the alphabetical order (for example, the "`51-custom.rules`" file is interpreted AFTER the "`50-udev-default.rules`" file).

The "`50-udev-default`" file contains the system default *udev* rules. To modify the default behavior, you therefore need to create a file with a name that starts with a number larger than 50, that will override the system default rules. Note that to add a rule, you need a root access on the system.

In the `udev_conf` directory of the *VirtualHub* for Linux[3] archive, there are two rule examples which you can use as a basis.

[1] see: http://www.yoctopuce.com/EN/blog_by_categories/for-the-beginners
[2] see: http://www.yoctopuce.com/EN/article/about-programming-examples
[3] http://www.yoctopuce.com/FR/virtualhub.php

Example 1: 51-yoctopuce.rules

This rule provides all the users with read and write access to the Yoctopuce USB peripherals. Access rights for all other peripherals are not modified. If this scenario suits you, you only need to copy the "51-yoctopuce_all.rules" file into the "/etc/udev/rules.d" directory and to restart your system.

```
# udev rules to allow write access to all users
# for Yoctopuce USB devices
SUBSYSTEM=="usb", ATTR{idVendor}=="24e0", MODE="0666"
```

Example 2: 51-yoctopuce_group.rules

This rule authorizes the "yoctogroup" group to have read and write access to Yoctopuce USB peripherals. Access rights for all other peripherals are not modified. If this scenario suits you, you only need to copy the "51-yoctopuce_group.rules" file into the "/etc/udev/rules.d" directory and restart your system.

```
# udev rules to allow write access to all users of "yoctogroup"
# for Yoctopuce USB devices
SUBSYSTEM=="usb", ATTR{idVendor}=="24e0", MODE="0664", GROUP="yoctogroup"
```

9.4. ARM Platforms: HF and EL

There are two main flavors of executable on ARM: HF (Hard Float) binaries, and EL (EABI Little Endian) binaries. These two families are not compatible at all. The compatibility of a given ARM platform with of one of these two families depends on the hardware and on the OS build. ArmHL and ArmEL compatibility problems are quite difficult to detect. Most of the time, the OS itself is unable to make a difference between an HF and an EL executable and will return meaningless messages when you try to use the wrong type of binary.

All pre-compiled Yoctopuce binaries are provided in both formats, as two separate ArmHF et ArmEL executables. If you do not know what family your ARM platform belongs to, just try one executable from each family.

9.5. Powered module but invisible for the OS

If your YoctoHub-GSM-2G is connected by USB, if its blue led is on, but if the operating system cannot see the module, check that you are using a true USB cable with data wires, and not a charging cable. Charging cables have only power wires.

9.6. Another process named xxx is already using yAPI

If when initializing the Yoctopuce API, you obtain the "*Another process named xxx is already using yAPI*" error message, it means that another application is already using Yoctopuce USB modules. On a single machine only one process can access Yoctopuce modules by USB at a time. You can easily work around this limitation by using a VirtualHub and the network mode [4].

9.7. Disconnections, erratic behavior

If you YoctoHub-GSM-2G behaves erratically and/or disconnects itself from the USB bus without apparent reason, check that it is correctly powered. Avoid cables with a length above 2 meters. If needed, insert a powered USB hub [5] [6].

[4] see: http://www.yoctopuce.com/EN/article/error-message-another-process-is-already-using-yapi
[5] see: http://www.yoctopuce.com/EN/article/usb-cables-size-matters
[6] see: http://www.yoctopuce.com/EN/article/how-many-usb-devices-can-you-connect

9.8. Registering a VirtualHub disconnect an other one

If, when performing a call to RegisterHub() with an VirtualHub address, an other previously registered VirtualHub disconnects, make sure the machine running theses VirtualHubs don't have the same *Hostname*. Same *Hostname* can happen very easily when the operating system is installed from a monolithic image, Raspberry-PI are the best example. The Yoctopuce API uses serial numbers to communicate with devices and VirtualHub serial number are created on the fly based the *hostname* of the machine running the VirtualHub.

9.9. Dropped commands

If, after sending a bunch of commands to a Yoctopuce device, you are under the impression that the last ones have been ignored, typical example is a quick and dirty program meant to configure a device, make sure you used a YAPI.FreeAPI() at the end of the program. Commands are sent to Yoctopuce modules asynchronously thanks to a background thread. When the main program terminates, that thread is killed no matter if some command are left to be sent. However API.FreeAPI () will wait until there is no more commands to send before freeing the API resources and returning.

9.10. Can't contact sub devices by USB

The point of the YoctoHub-GSM-2G is to provide network access to connected sub-devices, it does not behave like a common USB hub. The YoctoHub-GSM-2G's USB port is just meant for power and Hub configuration. Access to sub device is only possible through a network connection.

9.11. Network Readiness stuck at *3- LAN ready*

Check your outbound Internet connectivity and make sure you don't have an invalid callback set in the YoctoHub-GSM-2G configuration

9.12. Damaged device

Yoctopuce strives to reduce the production of electronic waste. If you believe that your YoctoHub-GSM-2G is not working anymore, start by contacting Yoctopuce support by e-mail to diagnose the failure. Even if you know that the device was damaged by mistake, Yoctopuce engineers might be able to repair it, and thus avoid creating electronic waste.

Waste Electrical and Electronic Equipment (WEEE) If you really want to get rid of your YoctoHub-GSM-2G, do not throw it away in a trash bin but bring it to your local WEEE recycling point. In this way, it will be disposed properly by a specialized WEEE recycling center.

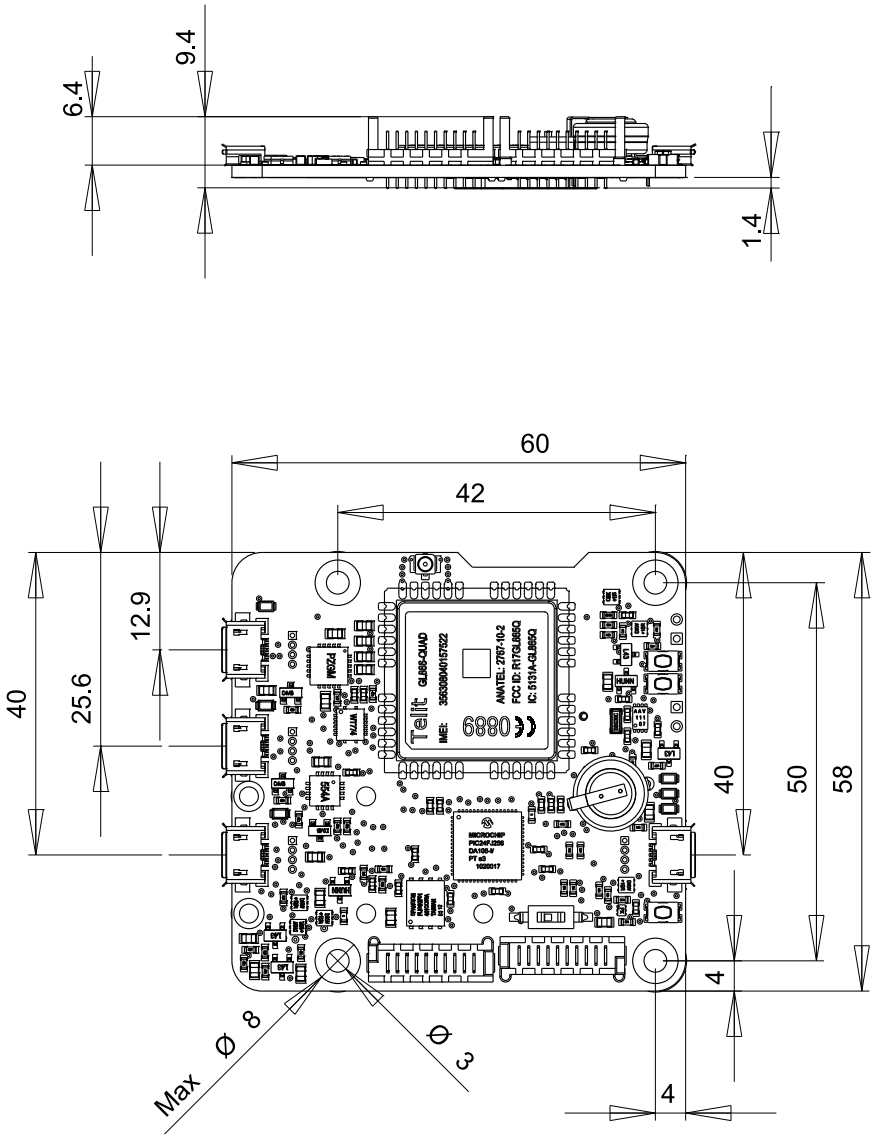
10. Characteristics

You can find below a summary of the main technical characteristics of your YoctoHub-GSM-2G module.

Product ID	YHUBGSM1
Hardware release†	Rev. C
USB connector	micro-B
Thickness	9.5 mm
Width	58 mm
Length	60 mm
Weight	34 g
Chipset	Telit GL865-QUAD
Frequency	850, 900, 1800, 1900 MHz
Protection class, according to IEC 61140	class III
Normal operating temperature	5...40 °C
Extended operating temperature‡	-20...70 °C
USB consumption	100 mA
Network connection	GSM 2G (EDGE)
RoHS compliance	RoHS III (2011/65/UE+2015/863)
USB Vendor ID	0x24E0
USB Device ID	0x003E
Suggested enclosure	YoctoBox-HubWlan-Transp
Harmonized tariff code	9032.9000
Made in	Switzerland

† These specifications are for the current hardware revision. Specifications for earlier revisions may differ.

‡ The extended temperature range is defined based on components specifications and has been tested during a limited duration (1h). When using the device in harsh environments for a long period of time, we strongly advise to run extensive tests before going to production.



All dimensions are in mm
Toutes les dimensions sont en mm

YoctoHub-GSM

A4

Scale
1:1
Echelle