

# Qeedji

User manual

SAP10e generic server

1.12.10 001A



## Legal notice

### SAP10e generic server 1.12.10 (001A\_en)

© 2022 Qeedji

#### Rights and Responsibilities

All rights reserved. No part of this manual may be reproduced in any form or by any means whatsoever, or by any means whatsoever without the written permission of the publisher. The products and services mentioned herein may be trademarks and/or service marks of the publisher, or trademarks of their respective owners. The publisher and the author do not claim any rights to these Marks.

Although every precaution has been taken in the preparation of this document, the publisher and the author assume no liability for errors or omissions, or for damages resulting from the use of the information contained in this document or the use of programs and source code that can go with it. Under no circumstances can the publisher and the author be held responsible for any loss of profits or any other commercial prejudice caused or alleged to have been caused directly or indirectly by this document.

#### Product information

Product design and specifications are subject to change at any time and 'Qeedji' reserves the right to modify them without notice. This includes the hardware, the embedded software and this manual, which should be considered as a general guide to the product. The accessories supplied with the product may differ slightly from those described in this manual, depending on the developments of the various suppliers.

#### Precautions for use

Please read and heed the following warnings before turning on the power: - installation and maintenance must be carried out by professionals. - do not use the device near water. - do not place anything on top of the device, including liquids (beverages) or flammable materials (fabrics, paper). - do not expose the device to direct sunlight, near a heat source, or in a place susceptible to dust, vibration or shock.

#### Warranty clauses

The 'Qeedji' device is guaranteed against material and manufacturing defects for a certain duration. Check the device warranty duration value at the end of the document. These warranty conditions do not apply if the failure is the result of improper use of the device, inappropriate maintenance, unauthorized modification, operation in an unspecified environment (see operating precautions at the beginning of the manual) or if the device has been damaged by shock or fall, incorrect operation, improper connection, lightning, insufficient protection against heat, humidity or frost.

#### WEEE Directive



This symbol means that your appliance at the end of its service life must not be disposed of with household waste, but must be taken to a collection point for waste electrical and electronic equipment or returned to your dealer. Your action will protect the environment. In this context, a collection and recycling system has been set up by the European Union.

# Table of contents

## Part I : Description and installation

Introduction	1.1
Getting started with the device	1.1.1
Device dimensions	1.1.2
Labelling	1.1.3
Installation	1.1.4
Uninstallation	1.1.5
Applications	1.2

## Part II : Applicative user interface

Applicative user interface	2.1
----------------------------	-----

## Part III : Administration console user interface

device configuration Web user interface	3.1
Configuration > Administrator	3.1.1
Configuration > LAN	3.1.2
Configuration > Servers	3.1.3
Configuration > SLATEs pairing	3.1.4
Configuration > Date and time	3.1.5
Configuration > Tasks	3.1.6
Maintenance > Firmware	3.1.7
Maintenance > Preferences	3.1.8
Maintenance > Logs	3.1.9
Maintenance > Tools	3.1.10
Maintenance > Files	3.1.11
Information > Device	3.1.12
Information > Network	3.1.13
Information > WPAN peripherals	3.1.14

## Part IV : Technical information

Technical specifications	4.1
Conformities	4.2

## Part V : Contacts

Contacts	5.1
----------	-----

## Part VI : Appendix

Appendix: Qeedji PowerPoint publisher for SLATE	6.1
Appendix: Qether	6.2
Appendix: Web services	6.3
Appendix: Device configuration with TFTP server (+ DHCP server code 66)	6.4

# **Part I**

**Description and installation**

## 1.1 Introduction

This manual explains how to install and configure your SAP10e device.

The SAP10e device allows up to ten SAP10e e-papers to be connected to a TCP/IP network.

Once the `generic_server` application is installed, the access point can connect itself and periodically to file remote server to get the PPK contents.

### Recommendations and warnings

This device is designed for indoor use only.

### Package Contents

Articles	Description
Device	SAP10e device with the default <code>regular</code> <sup>1</sup> application embedded.

<sup>1</sup> It is possible to easily update the device with the `generic_server` application afterwards.

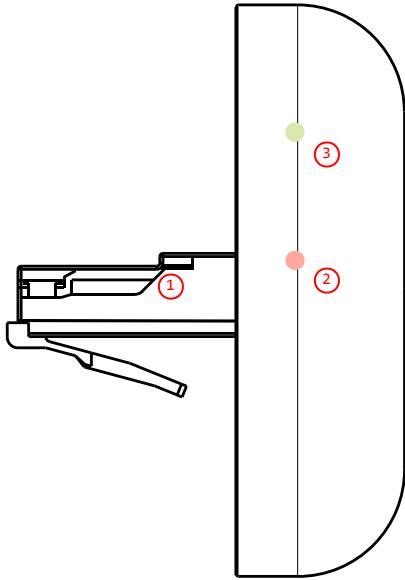
 In this documentation, the unit of measurement for dimensions is done in millimeters followed by its equivalent value in inches.

## 1.1.1 Getting started with the device

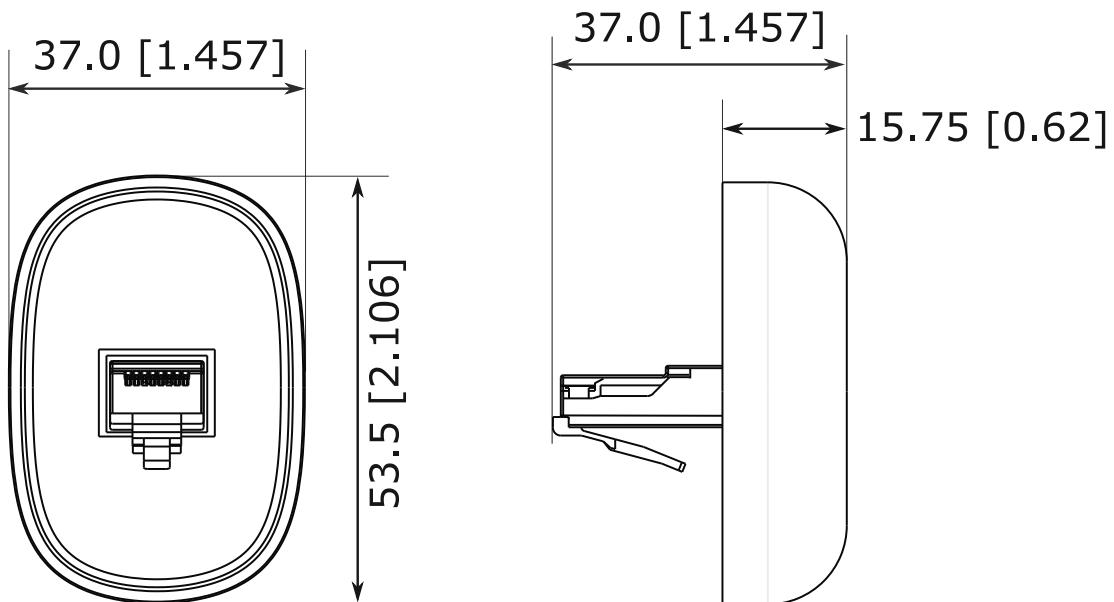
### Front and side face

The SAP10e device has:

- 1 male Ethernet connector **(1)**,
- 1 power red LED **(2)**,
- 1 status green LED **(3)**.



### 1.1.2 Device dimensions



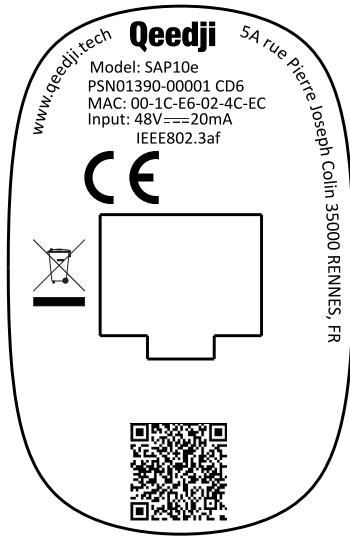
Dimensions are in: mm [inch]

Tolerances: 0.2 [0.008]

## 1.1.3 Labelling

### Product label

The model of the device, the power supply characteristics, the serial number (PSN) and the MAC address are written on a label stuck on the case.

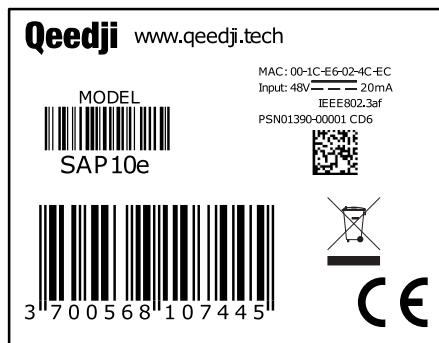


- The QR code on the product label is corresponding to the product identification URL, for example:  
`i.qeedji.tech?model=SAP10e&sn=01390-00001&mac.Lan1=00-1C-E6-02-4C-EC&mac.wpan1=F3-5C-2A-3F-F5-4B`.

### Packingbox label

This is the label stuck also on the packingbox. It is showing:

- the device model,
- the product serial number (PSN) (embedded also in the QR code),
- the manufacturer Website.

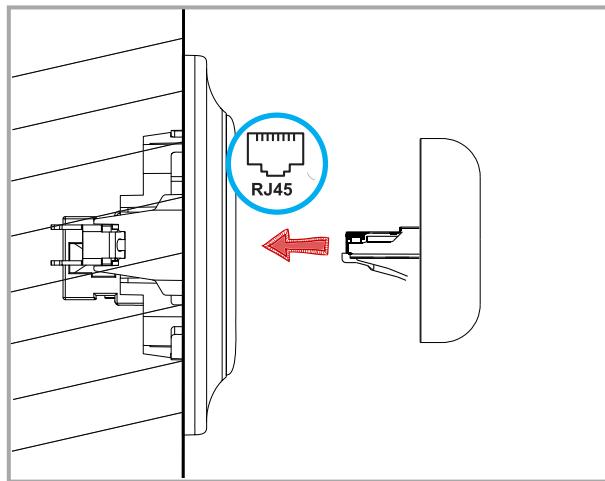


- The QR code on the packingbox label is corresponding to the product PSN, for example:  
`PSN01390-00001 CD6`.
- The serial number of the device could be requested in case of technical support.

## 1.1.4 Installation

☞ Install the SAP10e device on the Ethernet wall plugs of the buildings following the installation map given by your IT department.

The SAP10e device has to be plugged to an Ethernet wall plug supporting PoE IEEE802.3af.



Given the device footprint, it is preconised to use Ethernet wall plug plastron with a right insertion.



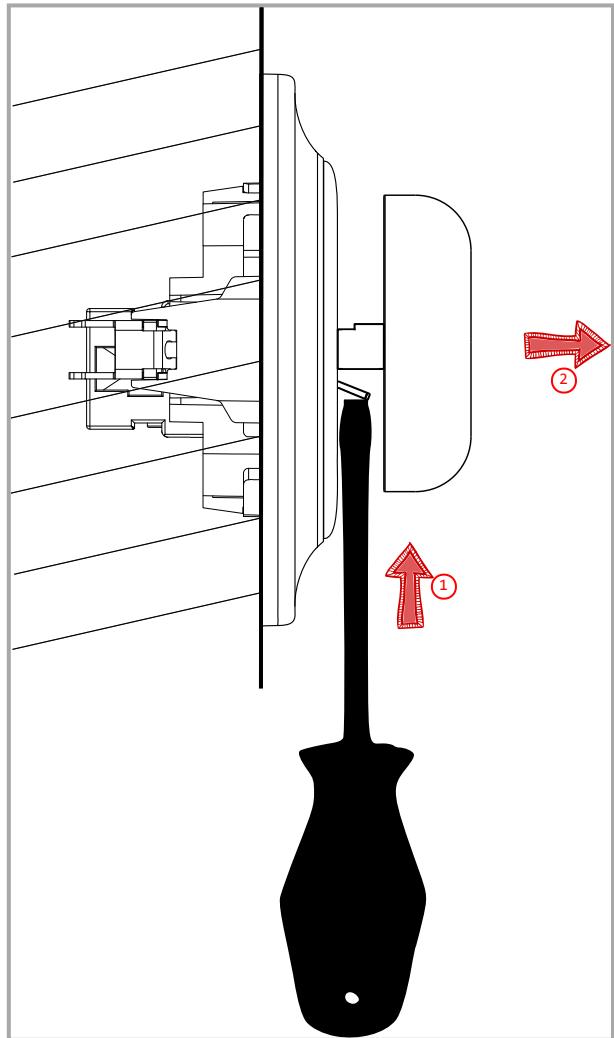
Consequently, the Ethernet wall plug whose plastron is angled is not supported.



☞ Thanks to the lock pin of its Ethernet connector, the SAP10e device can be installed on vertical surfaces, like walls as well as horizontal surfaces, like ceilings.

### 1.1.5 Uninstallation

With a screw driver, hold down the pin of the Ethernet connector **(1)** of the SAP10e device at the same time you are releasing with the hand **(2)** the SAP10e device from the Ethernet wall plug.



## 1.2 Applications

Once the `generic_server` firmware is installed on the device, the `generic_server` application allows to:

- visualize the content of the ten SLATEs and check whether each SLATE content is synchronized with the content sources, hosted in the `.output/<1>/` to `.output/<10>/` WebDAV directories of the SAP10e device.
- once the URL of the remote file server is properly set in the SAP10e device, the content sources are updated automatically by the `generic_server` application which is connecting periodically to a remote file server which is containing all the required contents for all the SLATEs.

## Configuration

The application for SAP10e device supports configuration update:

- by connecting to the device configuration Web user interface,
- by uploading, with a WebDAV client, a suitable `.js` configuration script (or a suitable `prefs.json` file) on the `http://<device-ip-addr>/.conf/` WebDAV directory of the SAP10e device,
- by receiving a `configure` command from the `Qether` tool (Qether V1.12.10 or above).

## Generic server application upgrade

The `regular` application is put by default on the SAP10e device at the factory.

The first step is to upgrade the device with the `generic_server` application.

The application can be upgraded:

- by using the device configuration Web user interface,
- by pushing, with a WebDAV client, a new firmware file `bm0032_generic_server_generic_server-sap10e-xx.yy.zz.bin` at the root of the device WebDAV directory `http://<device-ip-addr>/`,
- by receiving an `install` command from the `Qether` tool (Qether V1.12.10 or above).

 After a firmware upgrade, the device is rebooting once.

## SLATE software upgrade

It is possible to upgrade the software version of the SLATEs paired to the SAP10e devices:

- by pushing, with a WebDAV client, a `pictureframe-slate106-setup-xx.yy.zz.rpk` firmware file suitable for the SLATE devices, on the `http://<device-ip-addr>/.output/common/` WebDAV directory of the SAP10e device,
- by using the device configuration Web user interface.

## Preprogrammed flashing sequence

The SAP10e device has two modes:

- **Nominal mode** : the application runs properly. When a configuration or a firmware upgrade is in progress, the light illumination follows the light flashing sequence below.
- **Recovery mode** : the application can not be executed. It is required to upgrade the firmware to return to nominal mode.

Depending on these modes, the applications can fall into one of these preprogrammed flashing sequences in some specific cases.

Mode	Status green LED behaviour	Information
Nominal	<b>1</b> green flashes (2 seconds) with a 4 seconds periodicity	The application is running properly.
Recovery	<b>2</b> very short and consecutive green flashes (250 ms) with a 4,5 seconds periodicity	The application can not be executed. It should never happen. The device Web user interface is so not available. This sequence is displayed until a new firmware upgrade is done with Qether tool. For further information, contact <a href="mailto:support@qeedji.tech">support@qeedji.tech</a> .
Recovery	<b>3</b> very short and consecutive green flashes (250 ms) with a 5 seconds periodicity	The software resource of the SAP10e device set at factory are not valid. It should never happen. For further information, contact <a href="mailto:support@qeedji.tech">support@qeedji.tech</a> .
Nominal or recovery	<b>4</b> very short and consecutive green flashes (250 ms) with a 5,5 seconds periodicity	A Firmware upgrade for the SAP10e device is in progress. Please wait a few seconds.
Nominal	<b>5</b> very short and consecutive green flashes (250 ms)	A device configuration for the SAP10e device is in progress. Please wait a few seconds.

Mode	Red LED behaviour	Information
Nominal or recovery	On (steady)	The SAP10e device is powered properly.
Nominal or recovery	Off	The SAP10e device is not powered properly.

# **Part II**

**Applicative user interface**

## 2.1 Applicative user interface

The SAP10e device supports a Web user interface that can be accessed with a Web browser. The supported Web browsers are: Google Chrome , Mozilla Firefox , MS-Edge (Chromium) .

It is available from the URL: [http://<device\\_IP\\_addr>/](http://<device_IP_addr>/) .

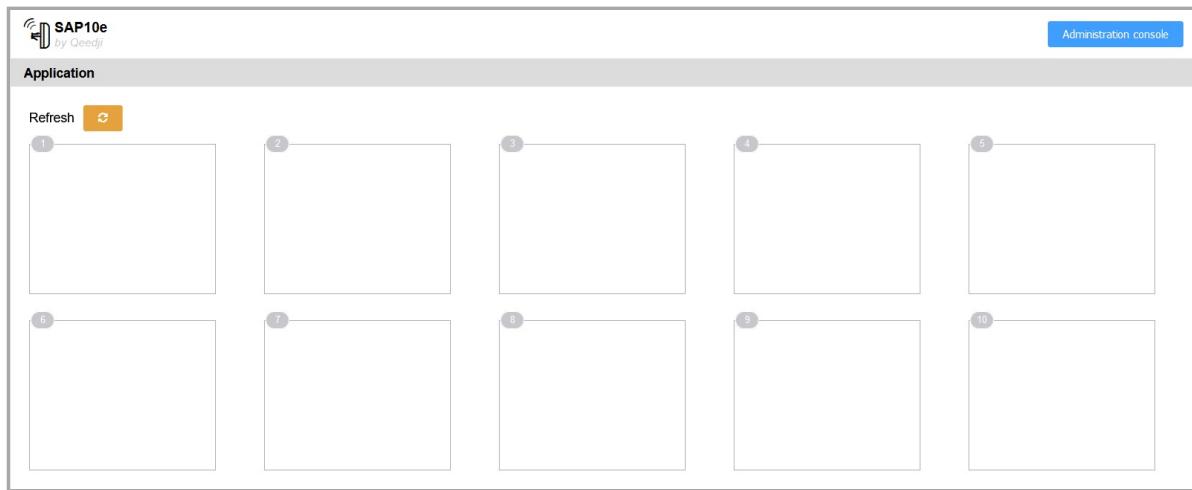
The URL falls automatically into the regular applicative user interface: [http://<device\\_IP\\_addr>/webui/](http://<device_IP_addr>/webui/) . This pane allows to:

- view the 10 SLATE contents (from index 1 to index 10) and check whether each SLATE content is synchronized with the SAP10e device content sources,
- display a synchronization state for each SLATE index with the following background color:
  - grey: default color when no SLATE is paired for this index,
  - green: the SLATE content is properly synchronized,
  - orange: the SLATE content synchronization state is not yet determined,
  - red: the SLATE content is not properly synchronized.

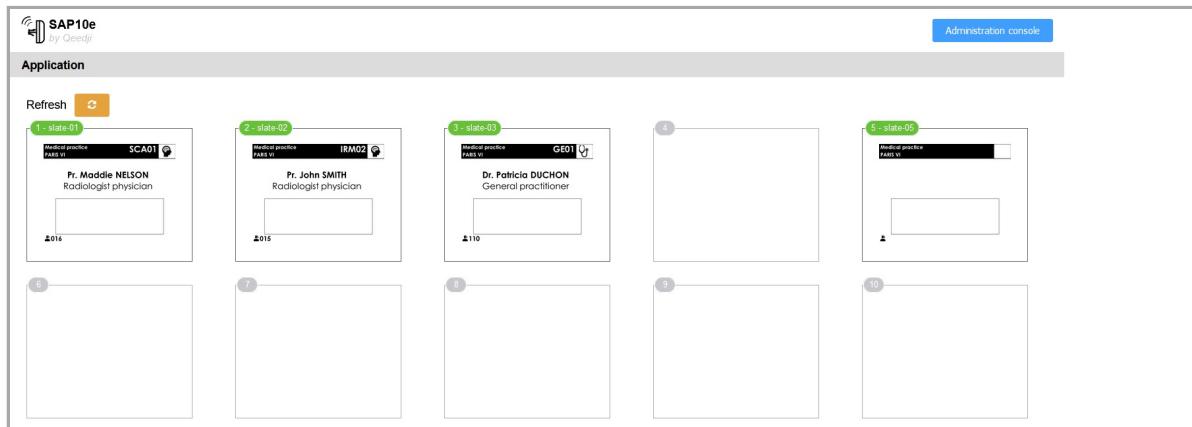
■ To refresh the synchronization state, click on the Refresh button.

■ To be synchronized, the SLATEs needs first to be paired with the right index. To check simply whether some SLATEs are paired to the SAP10e device, refer to the chapter § [Information > WPAN peripherals](#). Then, a suitable hub.ppk content must be present in the respective `/output/<index>/` WebDAV directories. For further information, refer to the chapter § [Maintenance > Files](#).

■ When no SLATE are paired at all, all the containers from `/output/1/` to `/output/10/` are empty and the respective synchronization state have a grey background color.



Example with 4 SLATEs paired on the index 1, 2, 3 and 5:



## **Part III**

---

**Administration console user interface**

### 3.1 device configuration Web user interface

The SAP10e device supports a device configuration Web user interface that can be accessed with a Web browser. The supported Web browsers are: Google Chrome , Mozilla Firefox and MS-Edge (Chromium) .

It is available from the URL: [http://<device\\_IP\\_addr>/](http://<device_IP_addr>/) .

The default credentials values, put at factory, to access to the device Web user interface are:

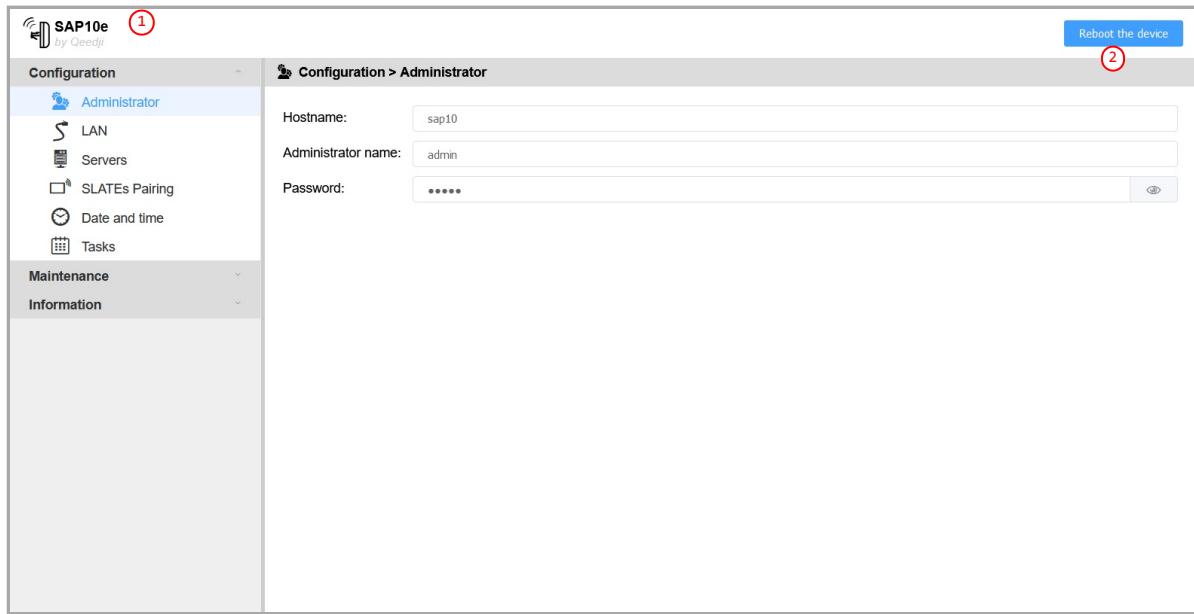
- login: admin ,
- password: admin .

The URL falls automatically into the applicative user interface<sup>1</sup>. At the top right corner, click on the Administration Console button.

Administration console

<sup>1</sup> For further information, refer to the chapter § [Applicative user interface](#).

This is the device configuration Web user interface.



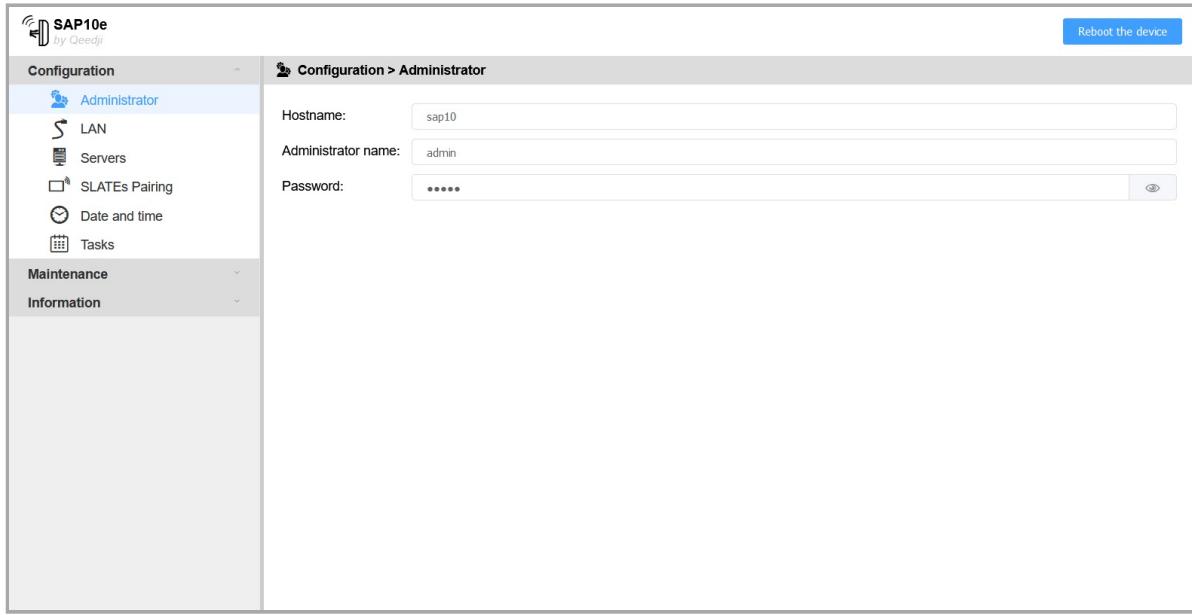
⚠ After you have changed and saved all your settings in the different panes, be sure to perform a device restart by clicking on the Reboot the device **②** button so that your changes are fully reflected.

Click on the device logo **①** at the left top corner to return to the applicative user interface.

### 3.1.1 Configuration > Administrator

In the Configuration tab, select the **Administrator** menu to change:

- the Hostname ,
- the login credentials:
  - Administrator name ,
  - Password .



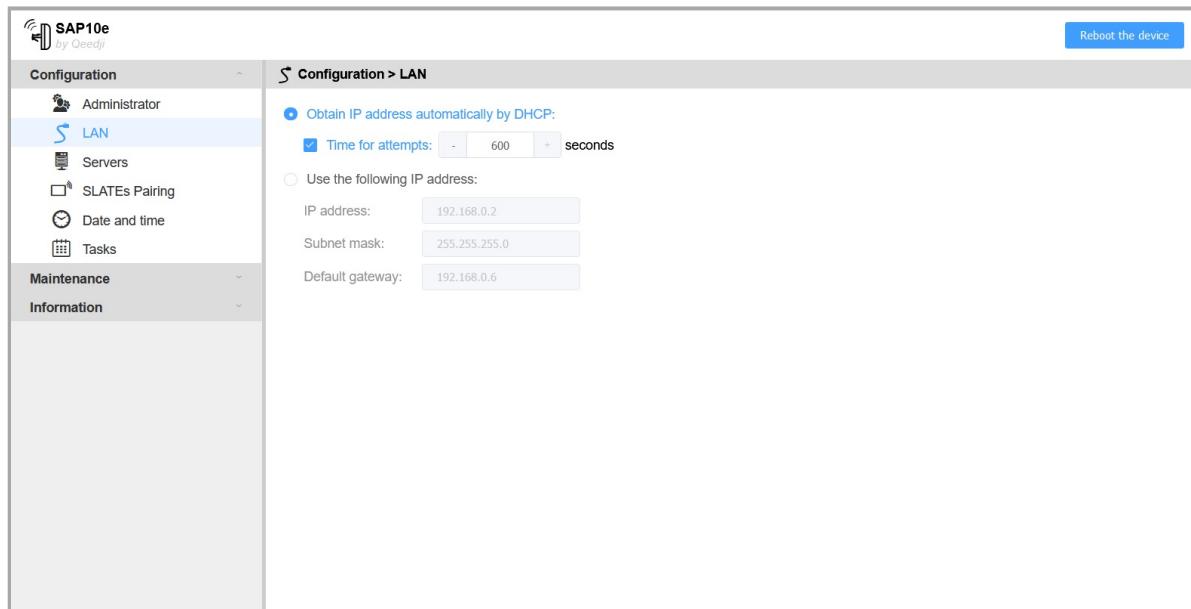
☞ It is recommended that you enter one unique *Hostname* value for each device. In case several SAP10e devices are located in different buildings or geographical locations, we recommend that you enter hostname values with information about the building and the location (e.g. Hall-RD-Paris-1).

For security reasons, it may be useful to change the login credentials values. Please keep them in a safe place afterwards.

☞ The same login credentials are used to access to the WebDAV server and to use Web services.

### 3.1.2 Configuration > LAN

In the Configuration tab, select the **LAN** menu to set up the network configuration of the **LAN** interface of your device.



☞ The device supports the UPnP and can be for example detected automatically in the local network environment of your computer.

Enter a suitable LAN network configuration so that the device can access to the Web to get the local time with a NTP server.

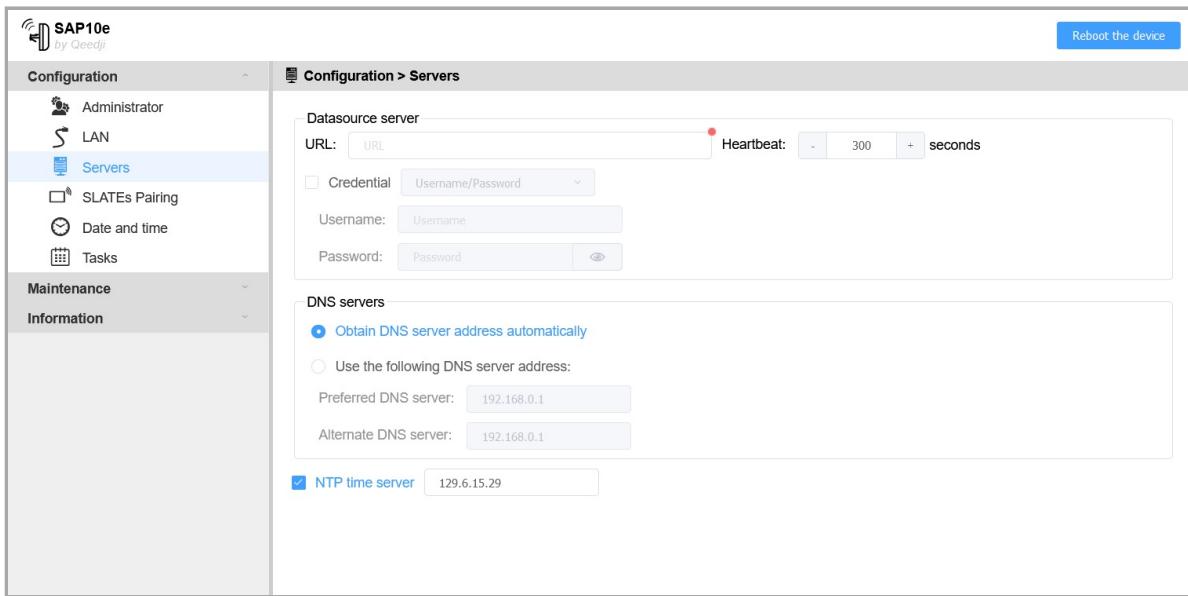
☞ By default, the device is configured with *Obtain an IP address automatically by DHCP* activated and *Time for attempts* deactivated. As soon as the DHCP server becomes available, the device ends by getting back a valid IP address given by the DHCP server within less than one minute.

☞ After a device reboot, when the device is configured with *Obtain an IP address automatically by DHCP* activated and *Time for attempts* is activated, in case the DHCP server is unavailable after the *Time for attempts* duration (ten minutes for the maximum and default value) has expired, the device ends up using the static IP address entered in the LAN configuration. The default static IP address is 192.168.0.2 when it has never been changed yet by the user. It is recommended to set an appropriate IP address, netmask and gateway if this case would happen. In case a daily reboot task is programmed, the device will restart this operation every days.

☞ When only the *Time for attempts* value is modified, press on TAB key of your keyboard to make appear the *Validate* button.

### 3.1.3 Configuration > Servers

In the Configuration tab, select the **Servers** menu to define the configuration of the servers peripheral to your device.



The **Datasource Server** is the server machine having the dynamic information of the PPK content to get from the id 1 to 10 so that it can be then transmitted to the SLATEs paired to the SAP10e device:

- **Datasource Server :**
  - URL : enter the URL<sup>2</sup> including the port of your Datasource Server (only the http scheme is supported),
    - Credential
      - **checked:**
        - default type: *Username/Password*,
        - *username* : username to access to the server,
        - *password* : password to access to the server,
      - **unchecked** (default value): no username/password is required,
    - Heartbeat : periodicity of the connection to the Datasource Server , from 100 seconds (default value) to 900 seconds (15 minutes).
  - **DNS servers** : enter the IPV4 address of your favorite DNS,
  - **NTP time server** .
    - ☞ The NTP time server is the only way for the SAP10e device to be on time. Once the device is on time, the date and time is transmitted to the SLATEs. When the NTP time server is configured, ensure to have a valid gateway and a valid DNS server.
    - ☞ The generic\_server application can work even though the NTP time server is not set.
    - ☞ The login credentials inside the URL are not supported, i.e. <http://user1:password1@192.168.10.10:8081/dir/01320-00550>.
    - ☞ When only the **Heartbeat** value is modified, press on TAB key of your keyboard to make appear the validate button.

<sup>2</sup> The URL has to match the directory of your database. If you have more than one SAP10e device to control, it is advised to implement one directory per SAP10e device with the directory name matching either the device PSN, or the device MAC address, i.e.: <http://192.168.10.10:8081/dir/01320-00550> with 01320-00550, an example of PSN value from a SAP10e device, or <http://192.168.10.10:8081/dir/00-1c-e6-02-4c-ad> with 00-1c-e6-02-4c-ad, an example of MAC address value from a SAP10e device.

The user must then fill the folder with an appropriate hub.ppk content. This is a *hub.ppk* files server example by using the SAP10e MAC address:

- <http://192.168.10.10:8081/dir//1/hub.ppk>
- <http://192.168.10.10:8081/dir//2/hub.ppk>
- <http://192.168.10.10:8081/dir//3/hub.ppk>
- <http://192.168.10.10:8081/dir//4/hub.ppk>
- <http://192.168.10.10:8081/dir//5/hub.ppk>
- <http://192.168.10.10:8081/dir//6/hub.ppk>
- <http://192.168.10.10:8081/dir//7/hub.ppk>
- <http://192.168.10.10:8081/dir//8/hub.ppk>
- <http://192.168.10.10:8081/dir//9/hub.ppk>
- <http://192.168.10.10:8081/dir//10/hub.ppk>

This is a *hub.ppk* files server example by using the SAP10e PSN:

- <http://192.168.10.10:8081/dir//1/hub.ppk>
- <http://192.168.10.10:8081/dir//2/hub.ppk>
- <http://192.168.10.10:8081/dir//3/hub.ppk>
- <http://192.168.10.10:8081/dir//4/hub.ppk>
- <http://192.168.10.10:8081/dir//5/hub.ppk>
- <http://192.168.10.10:8081/dir//6/hub.ppk>
- <http://192.168.10.10:8081/dir//7/hub.ppk>
- <http://192.168.10.10:8081/dir//8/hub.ppk>
- <http://192.168.10.10:8081/dir//9/hub.ppk>

- `http://192.168.10.10:8081/dir/10/hub.ppk`

To put the same URL for all your SAP10e device datasource inputs, you can use two kind of variable values intrinsic to the device:

Variable type	String to set in the input	Value example
deviceInfo:mac variable	<code>{\$deviceInfo:mac}</code>	<code>00-1c-e6-02-4c-ad<sup>3</sup></code>
deviceInfo:psn variable	<code>{\$deviceInfo:psn}</code>	<code>01390-00550</code>

<sup>3</sup> The format with double dot instead of dash is not supported when using `{$deviceInfo:mac}` variable (i.e.: `00:1c:e6:02:4c:ad`).

The URL would be for example:

- `http://192.168.10.10:8180/webdir/{$deviceInfo:mac}` or,
- `http://192.168.10.10:8180/webdir/{$deviceInfo:psn}`.

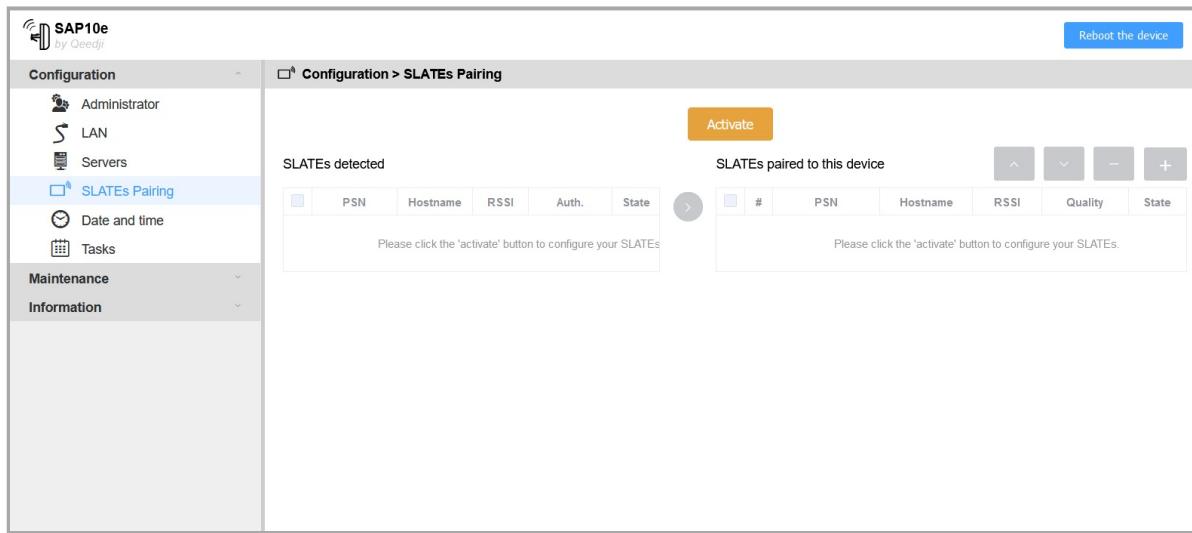
For further information about the device PSN value, refer to the chapter § [Information > Devices](#). For further information about the device MAC value, refer to the chapter § [Information > Network](#).

 Servers available with the `https` scheme are not supported.

 Upgrading the SAP10e device with another application type will clear the current datasource configuration data. When the SAP10e device is properly configured, it is advised to build and save an appropriate SAP10e device configuration script (`.js`) by using the configuration script template or save at least the `prefs.json` configuration file of your SAP10e device. For further information, refer to the chapter § [Maintenance > Files](#).

### 3.1.4 Configuration > SLATEs pairing

In the Configuration tab, select the **SLATEs pairing** menu to pair the SLATEs to your SAP10e device.



The SAP10e device is designed to work with at least one and up to ten SLATEs.

⚠ In case you are using a SAP10e device already installed, it is recommended to double check its wake-up configuration before starting any configuration (ex: `appli.pictureframe.slate.*.wakeup.day.interval` and `appli.pictureframe.slate.*.wakeup.weekdays.mask` preferences). For further information, refer to the chapter § [Maintenance > Preferences](#). In the factory configuration, the SAP10e device configures the SLATEs so that they wake-up every 15 minutes from 8:00 AM to 7:00 PM.

#### Prepare SLATE pairing configuration

⚠ Before starting any SLATE pairing, ensure that your device is on time. For further information, refer to the chapter § [Maintenance > Preferences](#).

To pair properly one or several SLATEs to your SAP10e device, you need to define for each SLATE PSN (Product Serial Number):

- a specific `Index` : between 1 and 10,
- a specific `Hostname` : max: 8 alphanumeric digits.

In case you have to use several SAP10e devices, prepare the same information for all of them.

For example, when the SLATEs are installed in different locations and in different buildings:

*Building A:*

SAP10e device's hostname	Location	SLATE PSN	slate #	slate hostname	slate pairing PIN Code
floor-1	Pr. Maddie NELSON office	00903-00050	1	1-1	none
floor-1	Dr. John SMITH office	00903-00051	2	1-2	none
floor-1	Dr. Patricia DUCHON office	00904-00052	3	1-3	none
floor-1	Waiting room	00904-00053	5	1-5	none
floor-1	Sonia DELACOURT office	00904-00053	6	1-6	none

*Building B:*

SAP10e device's hostname	Meeting room name	SLATE PSN	slate #	slate hostname	slate pairing PIN Code
floor-2	Dr. Ashley ISAAC office	00900-00054	1	2-1	1234
floor-2	Dr. Xavier NELSON office	00900-00055	2	2-2	1234
floor-2	Pr. Stefan SCHMIDT office	00900-00056	3	2-3	1234

☞ When a pairing PIN code is required, it is the same one for all the SLATEs to pair.

## SLATEs configuration

As soon as a SLATE is paired to a SAP10e device, it inherits of the configuration file `APPLI.CFG` provided by the SAP10e device.

- Wake-up policy:
- wake up regularly: *every quarter of an hour*,
- active days: *5/7 days*,
- active interval: *8.00 AM - 7.00 PM*.

So before starting any pairing procedure, check attentively the SAP10e device configuration for the SLATE.

For further information, refer to the chapter § [Maintenance > Preferences](#).

## Pairing procedure

The SAP10e device pairing allows to associate one or several SLATEs to a SAP10e device. A SLATE can be paired to only one SAP10e device at a time.

**⚠** When a new SAP10e device is trying to pair a legacy SLATE already paired to another SAP10e device, the SLATE will be paired to the new SAP10e device and unpaired automatically from the other device. To prevent from any unexpected SLATE pairing by another user, a pairing `PIN code` can be used.

**☞** *The pairing PIN code is not activated by default.*

**⚠** The SAP10e device can detect the SLATEs after they have woken up at least one since the device booting-up. In the default factory configuration, the SLATEs are programmed to wake-up and communicate for a while on the WPAN network every 15 minutes then fall again into `Sleep mode`.

### a) List the available SLATEs on the WPAN network

Connect to the SAP10e device Web user interface, and in the `Configuration > SLATEs Pairing` menu, click on the `Activate` button.

The screenshot shows the SAP10e configuration interface. On the left, there's a sidebar with icons for Administrator, LAN, Servers, SLATEs Pairing (which is selected), Date and time, and Tasks. The main area has a title "Configuration > SLATEs Pairing". It contains two tables. The left table, titled "SLATEs detected", has columns PSN, Hostname, RSSI, Auth., and State. It displays a message: "Please click the 'activate' button to configure your SLATEs". The right table, titled "SLATEs paired to this device", also has columns PSN, Hostname, RSSI, Quality, and State. It displays a message: "Please click the 'activate' button to configure your SLATEs". At the top right, there's a blue "Activate" button and a "Reboot the device" button.

**☞** *When there is no user action change in the SAP10e device configuration during one minute, the pairing is aborted automatically. To launch again the pairing procedure, click again on the `Activate` button.*

This screenshot shows the same configuration interface after some time. The "SLATEs detected" table now lists several SLATE devices with their PSN, Hostname, RSSI, Auth., and State. The "SLATEs paired to this device" table is empty. The "Activate" button has been replaced by a "Deactivate" button at the top right.

PSN	Hostname	RSSI	Auth.	State
00904-00005	slate106	-85 dBm	None	∅
00903-00030	slate106	-56 dBm	PIN code	∅
00903-00019	slate106	-83 dBm	PIN code	∅
00904-00002	slate106	-35 dBm	None	∅
00903-00031	slate106	-55 dBm	PIN code	∅
00903-00029	slate106	-70 dBm	PIN code	∅
00903-00021	slate106	-81 dBm	PIN code	∅
00903-00018	slate106	-82 dBm	PIN code	∅
00903-00028	slate106	-89 dBm	PIN code	∅
00903-00026	slate106	-91 dBm	PIN code	∅

Wait for 15 minutes until all your SLATEs are detected by the SAP10e device. They should appear with their PSN in the `SLATEs detected` left table.

⚠ If the SLATE does not appear in the list after 15 minutes, either they are too far from the SAP10e device or the wake-up policy configuration does not allow to wake up now. For further information, refer to the [SLATE106 User manual](#) on the [Qeedji Website](#).

In the `SLATEs detected` left table, these parameters values are shown:

- a check column: allows to select one or several SLATEs. Selecting a SLATE allows to drop it in the right table.
- PSN : SLATE Product Serial Number,
- Hostname : name of the SLATE in the WPAN network,
- RSSI : Received Signal Strength Indication (in dBm)
- Auth. :
  - PIN code : a pairing PIN code is required to pair the device,
  - None : no pairing PIN code is required to pair the device.
- State :
  - Unpaired : the SLATE having this PSN is not paired to the SAP10e device,
  - Paired : the SLATE having this PSN is paired to this SAP10e device,
  - Paired to another device : the SLATE having this PSN is paired to another device.

☞ The RSSI (in dBm) allows to have a first estimation of the WPAN connectivity quality between SLATEs and the SAP10e device. The RSSI values estimated for each SLATE can go roughly from -30 dBm for the nearest SLATEs to -90 dBm for the farthest SLATEs.

#### b) Pair all the required SLATEs

To pair the required SLATEs to this SAP10e, you have to select them, identified by their PSN in the `SLATEs detected` left table, and drop them into the `SLATEs paired to this device` right table.

In the `SLATEs paired to this device` right table, these values can be shown for each SLATE:

- a check column: allows to select one or several SLATEs. Selecting a SLATE allows to access to further menus for these SLATEs.
- # : Index from 1 to 10,
- PSN : SLATE Product Serial Number,
- Hostname : name of the SLATE in the WPAN network,
- RSSI : received Signal Strength Indication (in dbm),
- Quality :
  - Quality of connection :
    - Green : the connection quality is good. The file download success rate between this SLATE and the SAP10e device is between 75% and 100%.
    - Orange : the connection quality is average. The file download success rate between this SLATE and the SAP10e device is between 50% and 75%. The download error rate has reached a threshold that can affect the file download success rate meaning that in some case, the APPLI.CFG file or the content may not be updated for sure within the 15 minutes interval,
    - Red : the connection quality is bad. The file download success rate between this SLATE and the SAP10e device is between 0% to 50%. The download error rate has reached a threshold that affects seriously the file download success rate meaning that the APPLI.CFG configuration or the content will be not updated within the 15 minutes interval. The SLATE can not be used in this condition. It is required to install the SLATE at another location or install a new SAP10e device closer to this SLATE.
    - Grey : not yet determined (value shown in the tooltip).

In the `SLATEs paired to this device` right table, move up or move down the SLATEs so that they match the `Index` you have defined in the paragraph above [Prepare SLATE pairing configuration](#).

☞ By default, after a new SLATE dropping, the SLATE configuration leads to `Test card deactivated` and no pairing PIN code required.

Select one or several SLATEs in the `SLATEs detected` left table.

PSN	Hostname	RSSI	Auth.	State
00904-00005	slate106	-87 dBm	None	
00903-00030	slate106	-53 dBm	PIN code	
00903-00019	slate106	-74 dBm	PIN code	
<input checked="" type="checkbox"/> 00904-00002	slate106	-57 dBm	None	
00903-00031	slate106	-57 dBm	PIN code	
00903-00029	slate106	-69 dBm	PIN code	
00903-00021	slate106	-85 dBm	PIN code	
00903-00018	slate106	-75 dBm	PIN code	
00903-00028	slate106	-87 dBm	PIN code	
00903-00026	slate106	-93 dBm	PIN code	
<input checked="" type="checkbox"/> 00900-00247	slate106	-52 dBm	None	
<input checked="" type="checkbox"/> 00900-00078	slate106	-56 dBm	None	
<input checked="" type="checkbox"/> 00903-00013	slate106	-67 dBm	None	

#	PSN	Hostname	RSSI	Quality	State
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Then drop them into the `SLATEs paired to this device` right table using the right arrow button

If you try to pair SLATEs already used in a previous installation, and which was already been paired with a pairing PIN code , at the device dropping, you are invited to enter the appropriate pairing PIN Code (4 alphanumeric digits) for each SLATE requiring PIN code before to be paired.

The configuration script allows to pair SLATEs that have no PIN code or, to pair SLATEs that have the same PIN code.

PSN	Hostname	RSSI	Auth.	State
00904-00005	slate106	-87 dBm	None	∅
00903-00030	slate106	-53 dBm	PIN code	∅
00903-00019	slate106	-74 dBm	PIN code	∅
00903-00031	slate106	-57 dBm	PIN code	∅
00903-00029	slate106	-69 dBm	PIN code	∅
00903-00021	slate106	-85 dBm	PIN code	∅
00903-00018	slate106	-75 dBm	PIN code	∅
00903-00028	slate106	-87 dBm	PIN code	∅
00903-00026	slate106	-93 dBm	PIN code	∅

#	PSN	Hostname	RSSI	Quality	State
1	00903-00013	slate-01	-61 dBm	█	∅
2	00900-00078	slate-02	-56 dBm	█	∅
3	00900-00247	slate-03	-52 dBm	█	∅
4	00904-00002	slate-04	-57 dBm	█	∅
5					
6					
7					
8					
9					
10					

Wait for the next SLATE wakes up to see the paired status going from **∅** Pairing in progress state to the **∅** Paired state.

PSN	Hostname	RSSI	Auth.	State
00904-00005	slate106	-87 dBm	None	∅
00903-00030	slate106	-53 dBm	PIN code	∅
00903-00019	slate106	-74 dBm	PIN code	∅
00903-00031	slate106	-57 dBm	PIN code	∅
00903-00029	slate106	-69 dBm	PIN code	∅
00903-00021	slate106	-85 dBm	PIN code	∅
00903-00018	slate106	-75 dBm	PIN code	∅
00903-00028	slate106	-87 dBm	PIN code	∅
00903-00026	slate106	-93 dBm	PIN code	∅

#	PSN	Hostname	RSSI	Quality	State
1	00903-00013	slate106	-59 dBm	█	∅
2	00900-00078	slate-02	-50 dBm	█	∅
3	00900-00247	slate-03	-55 dBm	█	∅
4	00904-00002	slate-04	-57 dBm	█	∅
5					
6					
7					
8					
9					
10					

To avoid waiting for 15 minutes, you can also speed-up the pairing process by plugging for 3 seconds one USB power bank on each SLATE to pair. However it is reserved for advanced user for first installation.

When all your SLATEs are in **∅** Paired State, they should display their content as soon as there are waking up.

c) Select a paired SLATE to access to the menu

To access to more buttons, select a SLATE in the SLATEs paired to this device right table.

#	PSN	Hostname	RSSI	Auth.	State
1	00904-00005	slate106	-87 dBm	None	∅
2	00903-00030	slate106	-63 dBm	PIN code	∅
3	00903-00019	slate106	-79 dBm	PIN code	∅
4	00903-00031	slate106	-57 dBm	PIN code	∅
5	00903-00029	slate106	-79 dBm	PIN code	∅
6	00903-00021	slate106	-82 dBm	PIN code	∅
7	00903-00018	slate106	-68 dBm	PIN code	∅
8	00903-00028	slate106	-89 dBm	PIN code	∅
9	00903-00026	slate106	-88 dBm	PIN code	∅
10					

#	PSN	Hostname	RSSI	Quality	State
1	00903-00013	slate106	-63 dBm	██████	∅
2	00900-00078	slate-02	-50 dBm	██████	∅
3	00900-00247	slate-03	-55 dBm	██████	∅
4	00904-00002	slate-04	-57 dBm	██████	∅
5					
6					
7					
8					
9					
10					

Then, these are the available buttons associated to the selected SLATE:

- ▲ Move up SLATEs indices : allows to change the SLATE Index by decreasing it,
- ▼ Move down SLATEs indices : allows to change the SLATE Index by increasing it,
- Unpair : allows to unpair a SLATE from this SAP10e device,
- + Pair : allows to pair manually a SLATE to this SAP10e device by entering its PSN and an optional PIN code,

☞ If required, it is possible to change the hostname of each slate, set the same PIN code for all SLATEs and activate temporarily the TestCard by changing some user preferences. For further information, refer to the chapter § [Maintenance > Preferences](#).

⚠ The pairing PIN code can be modified successfully only when first a pairing has already been completed.

Move the SLATE to the appropriate index.

⚠ The index must be aligned with the slide ranking of your MS-PowerPoint presentation.

#	PSN	Hostname	RSSI	Auth.	State
1	00904-00005	slate106	-85 dBm	None	∅
2	00903-00030	slate106	-63 dBm	PIN code	∅
3	00903-00019	slate106	-79 dBm	PIN code	∅
4	00903-00031	slate106	-57 dBm	PIN code	∅
5	00903-00029	slate106	-79 dBm	PIN code	∅
6	00903-00021	slate106	-82 dBm	PIN code	∅
7	00903-00018	slate106	-68 dBm	PIN code	∅
8	00903-00028	slate106	-89 dBm	PIN code	∅
9	00903-00026	slate106	-88 dBm	PIN code	∅
10					

#	PSN	Hostname	RSSI	Quality	State
1	00903-00013	slate106	-61 dBm	██████	∅
2	00900-00078	slate-02	-50 dBm	██████	∅
3	00900-00247	slate-03	-52 dBm	██████	∅
4					
5	00904-00002	slate-05	-57 dBm	██████	∅
6					
7					
8					
9					
10					

d) Finalize the pairing procedure with Deactivate button:

To complete the SAP10e device configuration, click on the Deactivate button.

☞ When the pairing is finished, you can save the `prefs.json` file previously to be able to restore the device configuration afterwards. For further information, refer to the chapter § [Maintenance > Files](#).

Then check the pairing index and the hostname in the WPAN Peripherals menu of the Information pane.

Manufacturer	Model	Serial Number	Hostname	Info	
1	Qeedji	SLATE106	PSN00903-00013 CD8	slate-01	Battery: 79%, Firmware rev: 1.11.10, Software rev: 1.11.11, Har...
2	Qeedji	SLATE106	PSN00900-00078 CD0	slate-02	Battery: 100%, Firmware rev: 1.11.10, Software rev: 1.11.11, Ha...
3	Qeedji	SLATE106	PSN00900-00247 CD0	slate-03	Battery: 50%, Firmware rev: 1.11.10, Software rev: 1.11.11_bet...
4					
5	Qeedji	SLATE106	PSN00904-00002 CD1	slate-05	Battery: 100%, Firmware rev: 1.11.10, Software rev: 1.11.11, Ha...
6					
7					
8					
9					
10					

☞ It may be required to wait for all the SLATEs wakes up once so that this screen displays some consistent information.

If a HUB.PPK content is available in the Maintenance > Files > .output/<index>/ directory, the content with the .ppk filename will be downloaded through WPAN by the respective SLATEs. For further information, refer to the chapter § [Appendix: Qeedji PowerPoint publisher for SLATE](#).

☞ In case the Maintenance > Files > .output/<index>/ directory is empty or does not contain the right filename, the SLATEs can not update their content.

## Time to obtain a connection quality

The connection quality status is showing the file download error rate averaged on the ten last files downloading between the SAP10e device and the SLATEs. The files can be as well:

- an APPLI.CFG configuration file,
- a .ppk file,
- a .rpk software release file.

After a SAP10e device reboot:

- the connection quality displayed is grey meaning that no connection quality is available,
- one hour is required to obtain a first Red connection quality,
- one hour and half is required to obtain a Orange connection quality or a Green connection quality.

#	PSN	Hostname	RSSI	Quality	State
1	00903-00013	slate-01	-53 dBm	Green	∅
2	00900-00078	slate-02	-34 dBm	Green	∅
3	00900-00247	slate-03	-26 dBm	Green	∅
4					
5	00904-00002	slate-05	-37 dBm	Green	∅
6					
7					
8					
9					
10					

When the connection quality is orange or red, the batteries lifetime may decrease because of the downloading attempts.

In case you are facing a red connection quality :

- check that the available free space on the filesystem of the SLATE device is at least 220 KB to warranty a software release file writing or a .ppk file writing,
- check that some radio frequency obstacles do not prevent the SAP10e device to work properly with the SLATE devices.

The quality connection status does not bring information on the SLATE battery level.

If the red quality status persists despite of the advices above, please contact [support@qeedji.tech](mailto:support@qeedji.tech).

## Unpair a SLATE

To unpair a SLATE, select a SLATE in the SLATEs paired to this device right table, and click on - Unpairing button.

## Device replacement

In case you must replace a SAP10e device which was paired to several SLATEs:

- on the old SAP10e device:
  - save the prefs.json file,
  - unpair all the SLATEs.
- on the new SAP10e device:
  - configure the SAP10e device by copying, with a WebDAV client the prefs.json file user preference at the root of the WebDAV server ([http://www.<SAP10e\\_IP\\_Addr>](http://www.<SAP10e_IP_Addr>)),
  - pair all the SLATEs, whose the list has been saved with their PSN / Hostname /pairing PIN code .
- if a pairing PIN code was used, you must enter the right pairing PIN code .

## Change the pairing PIN code

To change the pairing PIN code of paired SLATEs, connect to the SAP10e device Web user interface, and in the Maintenance > Preferences menu, edit the appli.pictureframe.slate.\*.wpan1.authentication.pincode .

## Restore factory preferences

After a factory preferences restoring using the device configuration Web user interface, the SLATEs are kept in the SLATEs paired to this device right table, but:

- the hostnames are replaced from index 1 to 10 with respectively slate-01 to slate-10 hostname values,
- the pairing PIN code is deactivated.

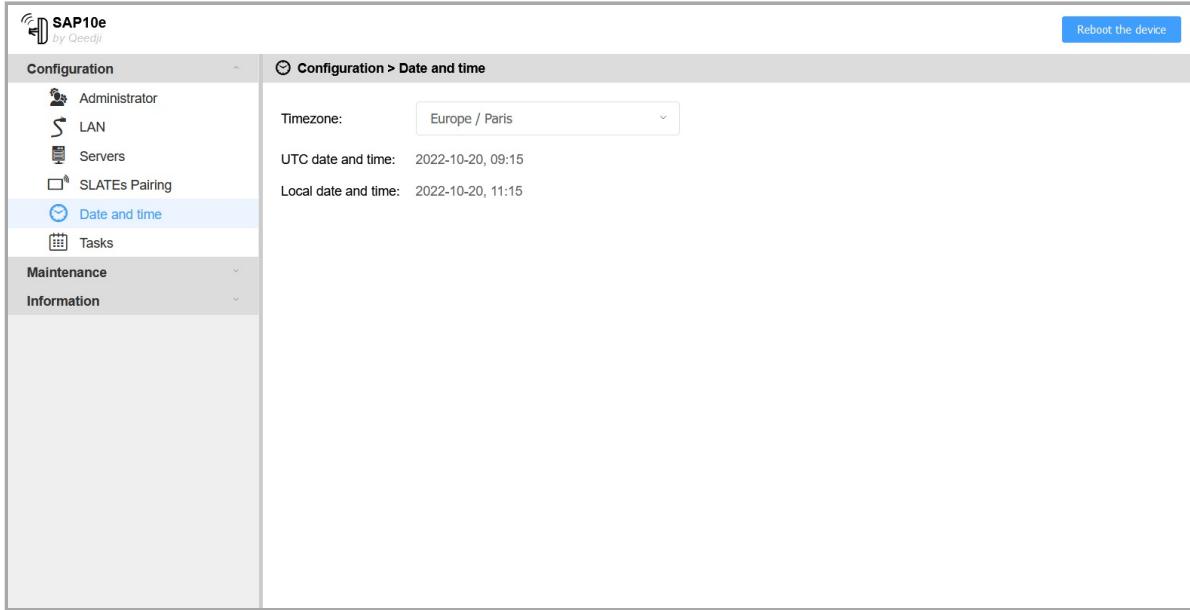
## **Data partition format**

In case the device data partition is formatted, all the SLATEs are unpaired from the SAP10e device.

### 3.1.5 Configuration > Date and time

In the Configuration tab, select the **Date and Time** menu to check the time configuration:

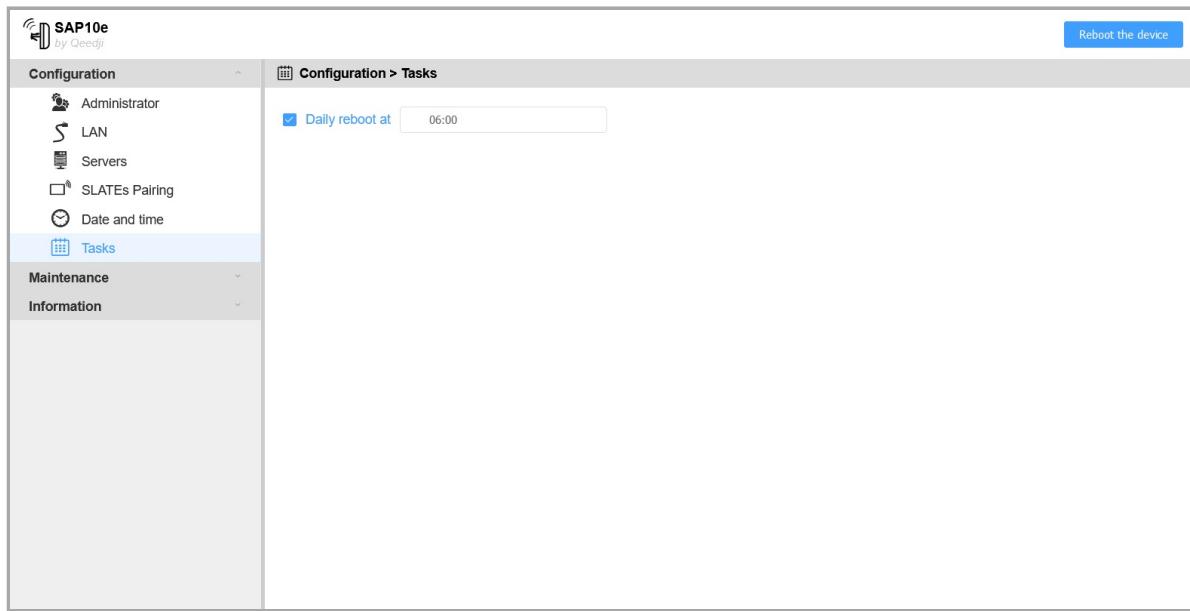
- timezone,
- system date of your device (day and time).



Given that the time is transmitted from the SAP10e device to the SLATEs devices (for wake-up scheduling strategy), it is advised that the SAP10e device is on time, synchronized with a NTP server. For further information, refer to the chapter § [Configuration > Servers](#)

### 3.1.6 Configuration > Tasks

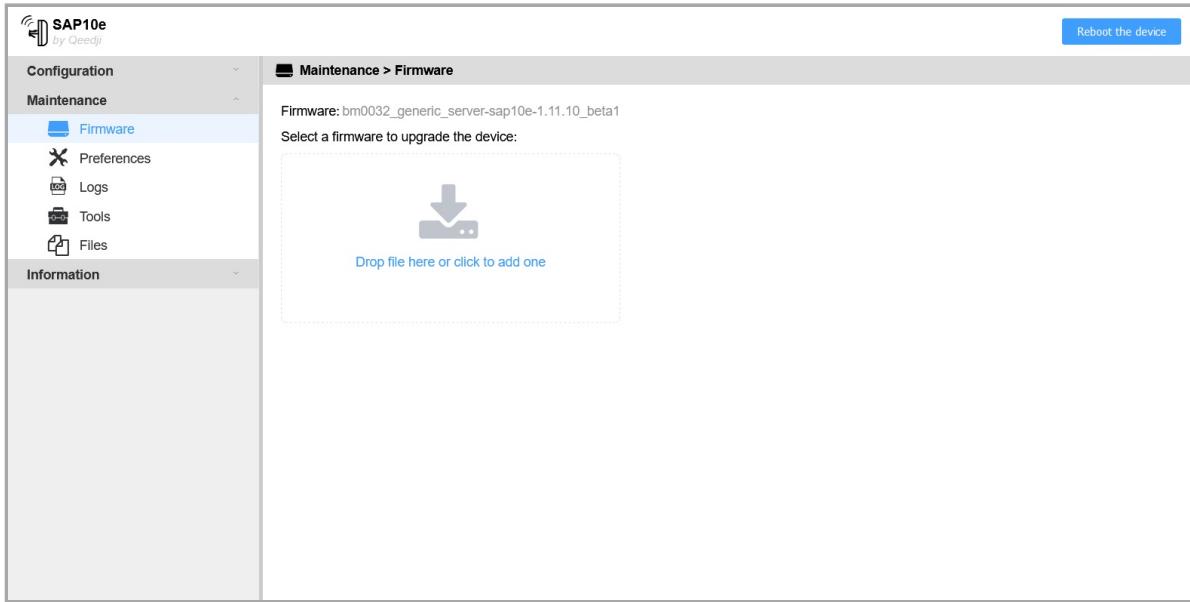
In the Configuration tab, select the **Tasks** menu to activate a daily device reboot task and adjust the reboot task time.



If the NTP server set by the user is not available anymore and the `system.task.reboot.enable` user preference is true, the device is rebooting automatically every days, 24 hours after the last device reboot.

### 3.1.7 Maintenance > Firmware

In the Maintenance tab, select the **Firmware** menu to view the version of the application installed on your device.



Corrective and evolutive maintenance software versions are regularly made available in the support tab of the official *Qeedji* website [http://www.qeedji.tech/en/support/index.php?SAP10e/Generic\\_server](http://www.qeedji.tech/en/support/index.php?SAP10e/Generic_server). It is therefore advised to regularly update the device firmware. From this website, download the appropriate latest firmware version available for your device model (.bin file). For further information, contact [support@qeedji.tech](mailto:support@qeedji.tech).

Drop your .bin file in the Drop file here or click to add one location or click on it to add one, then click on the **Send** button to update the firmware version of your device. Wait a couple of seconds, the time to load and install the new firmware version. Connect again to the device configuration Web user interface and check the new firmware version.

Do not electrically disconnect the device during the firmware upgrade.

### 3.1.8 Maintenance > Preferences

In the Maintenance tab, select the **Preferences** menu to view all the preferences.

The filter allows to display only the preferences whose name contains the string entered in the filter. All the preferences have optimal default values.

Double click on a preference to change its value.

At the bottom right of the page, the `Restore factory preferences` button allows to reset a subset of preferences allowing the device to reprogram its factory preferences. In this case, the LAN network configuration returns to DHCP.

Click on the `Reboot the device` button so that the modifications are taken into account.

 After a user preference restoration, in case a `.js` configuration script, suitable for the application of this SAP10e device, is available on the TFTP server, the user preference `system.tftp.enable` is set to `true`. Consequently, the SAP10e device is rebooting once again to take into account the `.js` configuration script available on the TFTP server.

Here are some user preferences that may be useful.

<b>user preference</b>	<b>value</b>	<b>description</b>
<code>appli.pictureframe.slate.*.testcard.enabled</code>	<code>false</code> (default)	If true, when the configuration file is taken into account, the SLATE displays a testcard content and can not display other content. If true, when the configuration file is taken into account, the SLATE removes the test content and displays the content communicated by the SAP10e.
<code>appli.pictureframe.slate.*.vibration_sensor.enabled</code>	<code>false</code>	If false, allows to deactivate the vibration sensor on the SLATE.
<code>appli.pictureframe.slate.*.wakeup.day.interval</code>	<code>T0800/T1901</code> (default)	Allows to set the start time and the end time between which the SLATE can wake up.
<code>appli.pictureframe.slate.*.wakeup.weekdays.mask</code>	<code>31</code> (default)	<code>1</code> to <code>127</code> . Allows to set the days when the SLATE can wake up: <code>1:MO + 2:TU + 4:WE + 8:TH + 16:FR + 32:SA + 64:SU</code>
<code>appli.pictureframe.slate.*.wpan1.authentication.method</code>	<code>none</code> (default)	<code>none</code> : no pairing PIN code is required for the ten SLATEs. <code>pincode</code> : the same pairing PIN code value is required for the ten SLATEs.
<code>appli.pictureframe.slate.*.wpan1.authentication.pincode</code>	<code>0</code> (default)	4 digits PIN code value: <code>0 .. 9999</code>
<code>appli.pictureframe.slate.*.wpan2.enabled</code>	<code>false</code>	If true, allows the SLATE to support mobile applications.
<code>appli.pictureframe.slate.&lt;n&gt;.hostname</code> with <code>&lt;n&gt;</code> going from <code>1</code> to <code>10</code>	<code>slate-01</code> to <code>slate-10</code> (default values)	8 alphanumeric characters max to define the hostname for SLATE paired on index <code>&lt;n&gt;</code> , with <code>&lt;n&gt;</code> going from <code>1</code> to <code>10</code> (dash and dot are also supported).
<code>appli.pictureframe.slate.&lt;n&gt;.psn</code> with <code>&lt;n&gt;</code> going from <code>1</code> to <code>10</code>	<code>ex: 00900-00101</code>	PSN of the SLATE paired on the index <code>&lt;n&gt;</code> , with <code>&lt;n&gt;</code> going from <code>1</code> to <code>10</code>
<code>system.datetime.timezone</code>	<code>Europe/Paris</code> (default)	Allows to set the date and time timezone. For further information about supported values, refer to the chapter § <a href="#">Timezone</a> .
<code>system.ntp.enabled</code>	<code>false</code> (default)	Allows to activate time based on a NTP server
<code>system.ntp.server.url</code>	<code>129.6.15.29</code> (default)	Allows to define the NTP server URL
<code>system.httpd.cors.enable</code>	<code>false</code> (default)	Allows to activate CORS (Cross-origin resource sharing) requests
<code>system.httpd.cors.origin</code>	<code>*</code> (default)	Allows to set a the value for the Access-Control-Allow-Origin header

## Restore factory preferences

After a factory preferences restoring using the device configuration Web user interface, the SLATEs hostnames are reinitialized respectively from `slate-01` to `slate-10` values for index 1 to index 10, and the PIN code authentication is deactivated for all SLATEs.

## CORS (Cross-origin resource sharing) request activation

For Web site having to use the Web services supported by the SAP10e device, the support for `cors` (Cross-origin resource sharing) requests must be activated inside the SAP10e device by setting the `system.httpd.cors.enable` user preference to `true`.

When the `CORS` (Cross-origin resource sharing) request is activated, the `system.httpd.cors.origin` user preference allows to set a suitable value for the `Access-Control-Allow-Origin` header corresponding to the origin of the requesting Web site. For example: <https://myWebSite.contoso.com>.

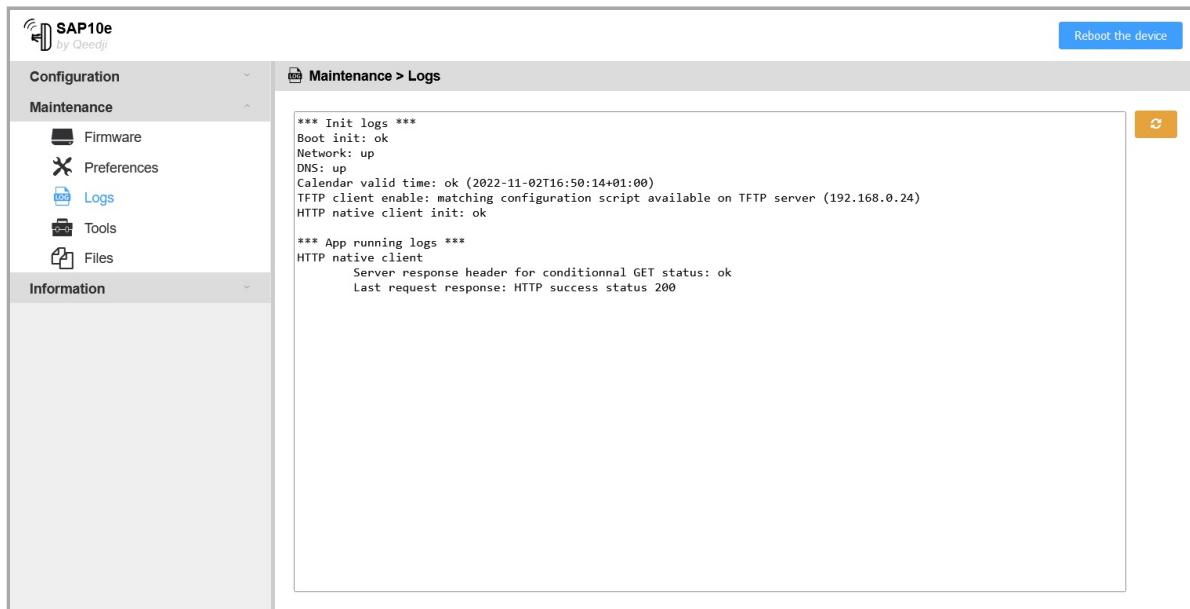
*In some specific conditions, the `null` and `*` values for the origin of the requesting Web site should allow the Web service to work properly. For further information, contact your IT department.*

## Timezone

Continent	Country/Town pair values supported for the <code>system.datetime.timezone</code> preference
Africa	Africa/Brazzaville, Africa/Cairo, Africa/Casablanca, Africa/Harare, Africa/Lagos, Africa/Nairobi, Africa/Onitsha, Africa/Windhoek
America	America/Anchorage, America/Argentina/Buenos_Aires, America/Barbados, America/Bogota, America/Boston, America/Caracas, America/Chicago, America/Chihuahua, America/Costa_Rica, America/Dallas, America/Denver, America/Godthab, America/Halifax, America/Houston, America/Los_Angeles, America/Manaus, America/Mexico_City, America/Montevideo, America/New_York, America/Phoenix, America/Recife, America/Regina, America/Rio_de_Janeiro, America/San_Francisco, America/Santiago, America/Sao_Paulo, America/St_Johns, America/Tijuana, America/Washington,_D.C.
Asia	Asia/Ahmedabad, Asia/Almaty, Asia/Amman, Asia/Baghdad, Asia/Baku, Asia/Bangalore, Asia/Bangkok, Asia/Beijing, Asia/Beirut, Asia/Chengdu, Asia/Chennai, Asia/Chongqing, Asia/Colombo, Asia/Delhi, Asia/Dongguan, Asia/Dubai, Asia/Guangzhou, Asia/Hangzhou, Asia/Hanoi, Asia/Ho_Chi_Minh, Asia/Hong_Kong, Asia/Hyderabad, Asia/Irkutsk, Asia/Jakarta, Asia/Jerusalem, Asia/Kabul, Asia/Karachi, Asia/Kathmandu, Asia/Kolkata, Asia/Krasnoyarsk, Asia/Kuala_Lumpur, Asia/Kuwait, Asia/Lahore, Asia/Magadan, Asia/Mumbai, Asia/Nagoya, Asia/Nanjing, Asia/Oral, Asia/Osaka, Asia/Pune, Asia/Quanzhou, Asia/Seoul, Asia/Shanghai, Asia/Shenyang, Asia/Shenzhen, Asia/Surat, Asia/Taipei, Asia/Tbilisi, Asia/Tehran, Asia/Tianjin, Asia/Tokyo, Asia/Vladivostok, Asia/Wuhan, Asia/Xi'an, Asia/Yakutsk, Asia/Yangon, Asia/Yekaterinburg, Asia/Yerevan, Asia/Zhengzhou
Atlantic	Atlantic/Azores, Atlantic/Cape_Verde, Atlantic/South_Georgia
Australia	Australia/Adelaide, Australia/Brisbane, Australia/Darwin, Australia/Hobart, Australia/Perth, Australia/Sydney
Europe	Europe/Amsterdam, Europe/Athens, Europe/Belgrade, Europe/Berlin, Europe/Brussels, Europe/Dusseldorf, Europe/Helsinki, Europe/Istanbul, Europe/London, Europe/Madrid, Europe/Minsk, Europe/Moscow, Europe/Paris, Europe/Sarajevo, Europe/Warsaw
Pacific	Pacific/Auckland, Pacific/Fiji, Pacific/Guam, Pacific/Honolulu, Pacific/Majuro, Pacific/Midway, Pacific/Noumea, Pacific/Tongatapu
UTC	Etc/UTC

### 3.1.9 Maintenance > Logs

In the Maintenance tab, select the **Logs** menu to activate logs.



When the `system.tftp.server` user preference is true:

- in case there is some available `.js` configuration script on the TFTP server with the appropriate file name pattern, this message is printed: `TFTP client enable: matching configuration script available on TFTP server (<IP address>)`.
- in case there is no `.js` configuration script on the TFTP server with the appropriate file name pattern, this message is printed: `TFTP client enable: no configuration script available on TFTP server for this device (<IP address>)`.
- in case the TFTP server is not available, this message is printed: `TFTP client enable: error server did not respond (<IP address>)`.

**⚠️** To be successfully taken into account, the content of the `.js` configuration script available on the TFTP server must also be suitable for the SAP10e application.

When the server is available with suitable credentials, these logs should be printed. The HTTP success status value is 200 when the PPK content has just changed, its value is 304 when the PPK content is the same as the previous one.

```
*** App running logs ***
HTTP native client
  Server response header for conditionnal GET status: ok
  Last request response: HTTP success status 200
```

```
*** App running logs ***
HTTP native client
  Server response header for conditionnal GET status: ok
  Last request response: HTTP success status 304
```

When the server is not available, or when the URL is not the right one, these logs should be printed:

```
*** App running logs ***
HTTP native client
  Server response header for conditionnal GET status: unknown
  Last request response: HTTP error status 404
  Body:
```

When the server is available with credentials which is not the right one, these logs should be printed:

```
*** App running logs ***
HTTP native client
  Server response header for conditionnal GET status: unknown
  Last request returned error:
    IP stack: "OK"
    HTTP client result: "Connection timed out (server didn't respond in time)"
```

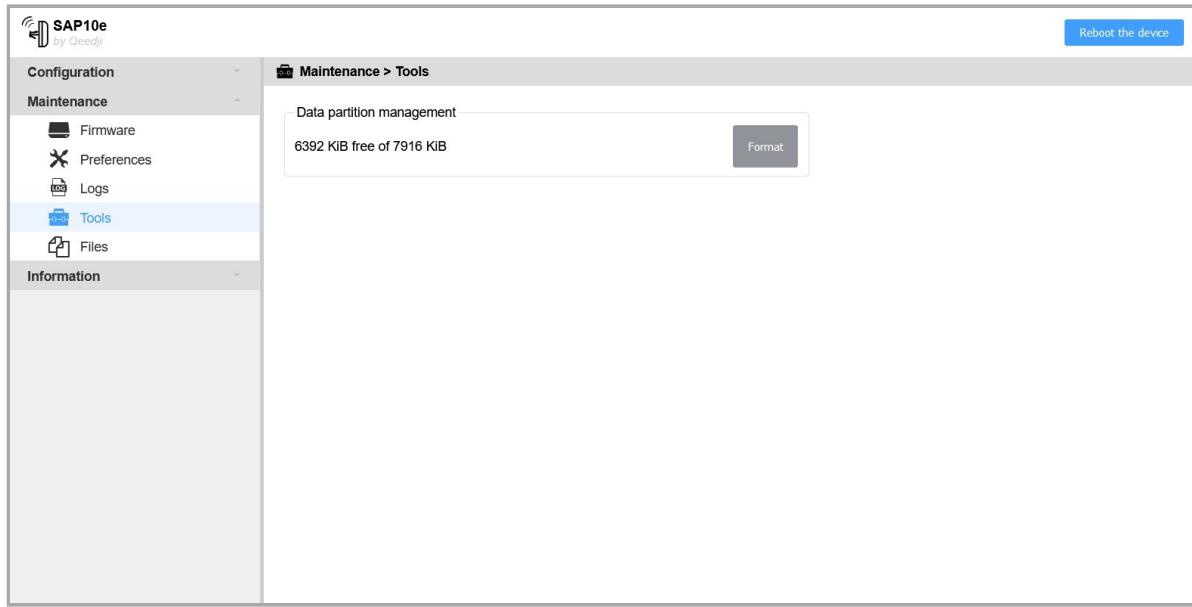
These logs could be printed after a device reboot when using a server URL having a domain instead of an IP address, but should get right few seconds after:

```
*** App running logs ***
HTTP native client
  Server response header for conditionnal GET status: unknown
  Last request returned error:
    IP stack: "Illegal argument"
    HTTP client result: "Connection to server failed"
```

### 3.1.10 Maintenance > Tools

In the Maintenance tab, select the **Tools** menu to:

- view the available space on the flash memory storage<sup>1</sup> (max 7848 KiB),
- format the flash memory storage<sup>1</sup>.

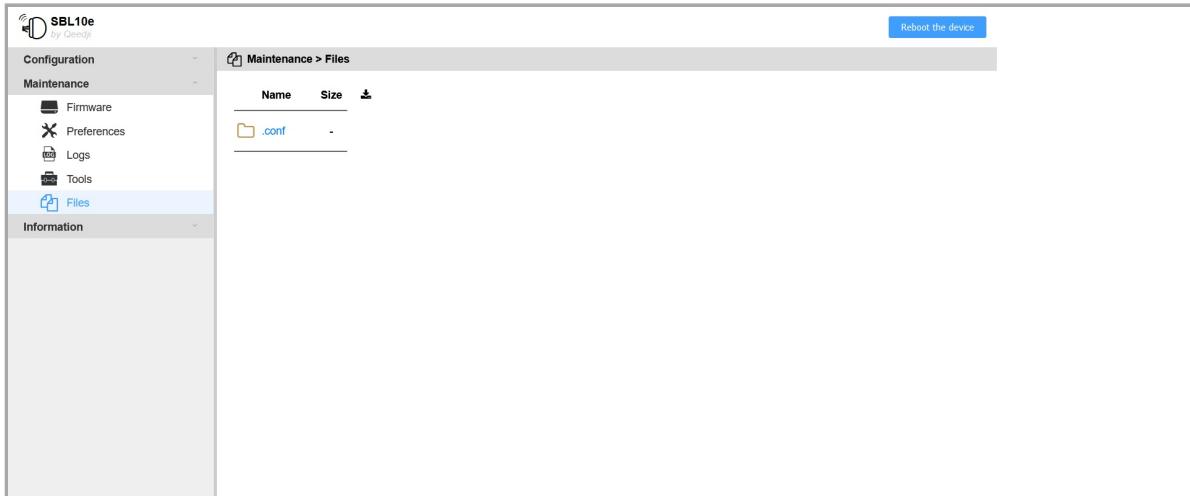


<sup>1</sup> The flash memory storage is used to store all the directories and files hosted at the root of the WebDAV directory, and the user preferences as well. In case a flash formatting, the device returns to the default factory settings.

After having pressed on the `Format` button, all the SLATEs are unpaired from the SAP10e device.

### 3.1.11 Maintenance > Files

In the Maintenance tab, select the **Files** menu to see the directories and files hosted at the root directory of the WebDAV server.



It contains a `.conf` (1) directory.

As soon as a modification is done through the device configuration Web user interface, a `prefs.json` file, corresponding to the new device configuration, is created in the `.conf` folder.

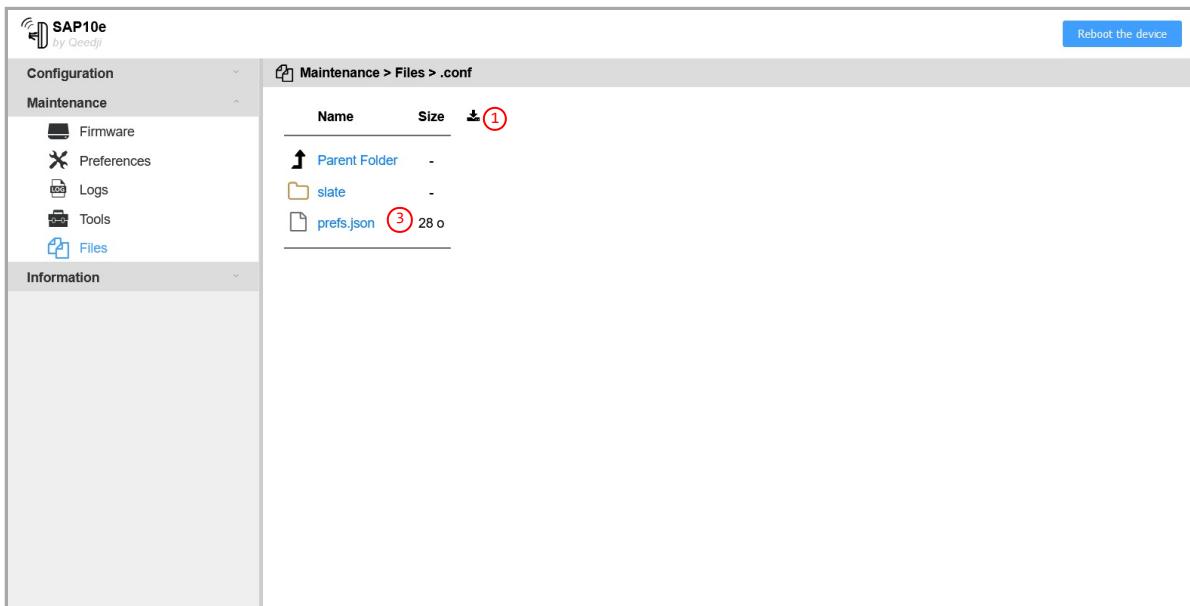
When the user preference `system.tftp.enable` is `true`, a `tftp_crc` file, containing the CRC of the `.js` configuration script downloaded from the TFTP server is written in the `.conf` folder. To be downloaded again from the TFTP server, either the suitable configuration script must be modified on the TFTP server, or the `tftp_crc` file must be removed.

**⚠** After having pressed on the `Restore factory preferences` button, the `prefs.json` file and the `tftp_crc` file are erased.

#### Save or restore a pairing configuration

**⚠** It is recommended to save the `configuration.js` previously to configure your SAP10e device in order to be able to restore its pairing configuration afterwards.

**⚠** The content of the `configuration.js` is depending on the used application. Do use the suitable `configuration.js` for the `generic-server` application.



### Date and time

The system date and time can only be set and updated thanks to a NTP server. In this case, you have to:

- First:
  - define the timezone value,
  - define the NTP server IP address,
  - check that the NTP time server is activated (activated by default).
- Secondly:
  - define the gateway URL to access to internet,
  - define valid primary and secondary DNS servers.

For further information, refer to the chapter:

- § Configuration > Servers,
- § Configuration > LAN,
- § Configuration > Date and time,

☞ In case the SAP10e device can not fetch a valid date and time through NTP at device boot-up, the clock does not progress and stays with the value 01/01/2020 00:00. The date and time metadata of the files added after this date on the file system is also 01/01/2020 00:00. The last modification date for a file can be only be seen with a WebDAV client.

☞ When the server NTP is activated and the device is properly configured, the date and time for the SAP10e device is updated automatically by NTP at the device boot-up. Then it is progressing every seconds.

☞ The support for date and time file metadata display in this pane will be available in a next version.

Name	Size
Parent Folder	-
hub.ppk	117.3 Kio
hub.ppk.etag	8 o

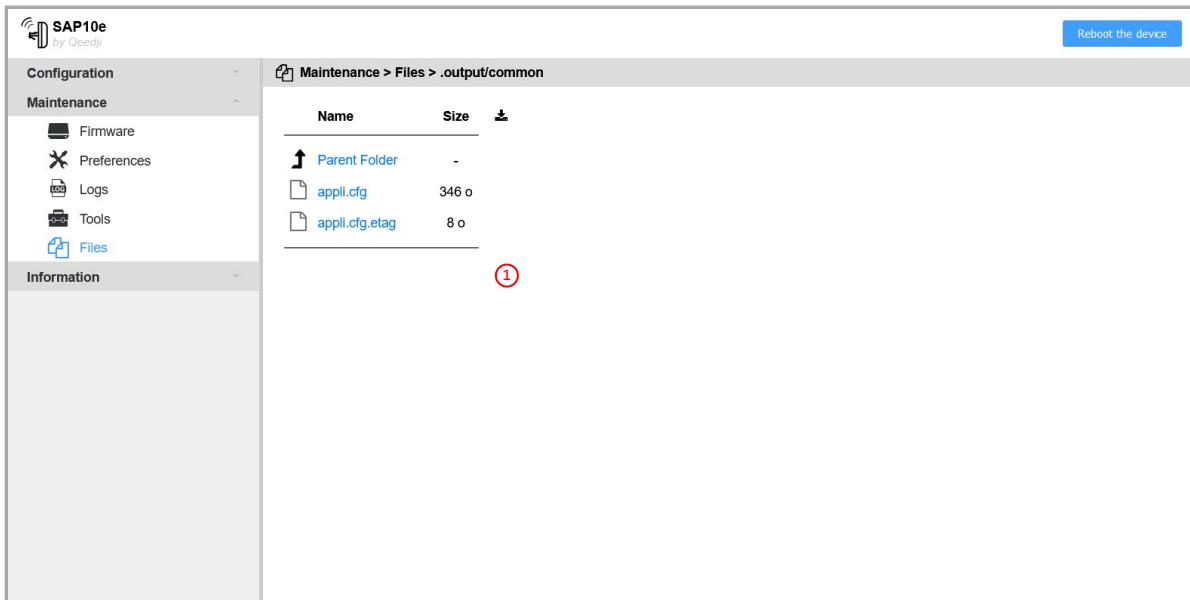
☞ When the system date and time value is 01/01/2020 00:00, it cannot be transmitted to the SLATEs devices as valid date and time.

## Install a new pictureframe release version for SLATEs with your SAP10e device

To install a new pictureframe release version for the SLATEs paired to your SAP10e device, download the wished pictureframe software version from the [Qeedji Website](#).

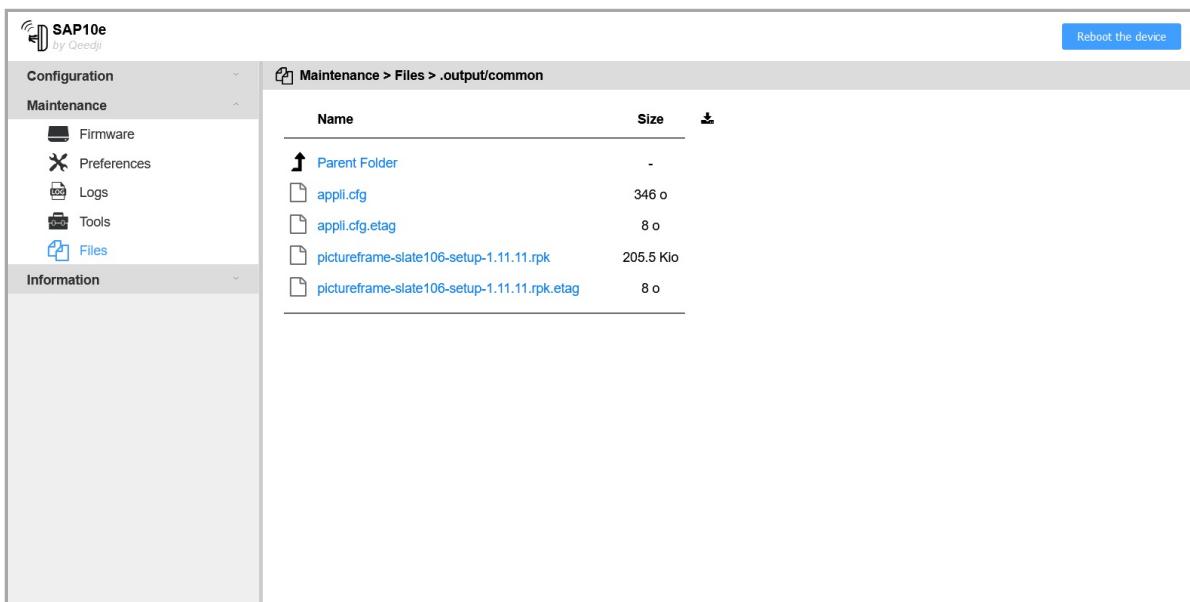
In the **Maintenance** tab, select the **Files** menu to see the files hosted at the WebDAV root directory. Then click on the `.output` directory then on the `common/` directory.

Press on the upload button (1) and load the appropriate `pictureframe-slate106-setup-xx.yy.zz.rpk` (`xx.yy.zz > 1.11.11`).



The SLATE should then upgrade themselves their firmware with this pictureframe software in few minutes.

- Do not keep two `pictureframe-slate106-setup-xx.yy.zz.rpk` files on this directory. Think to remove the obsolete one.
- To remove the `pictureframe-slate106-setup-xx.yy.zz.rpk` file, fly over the file with the mouse to make appear the button, then click on it.
- The `pictureframe-slate106-setup-xx.yy.zz.rpk` file is persistent after a device reboot.



- You can also open a WebDAV client and connect to the SAP10e device, copy the `pictureframe-slate106-setup-xx.yy.zz.rpk` file into the `.output/common` WebDAV directory of the SAP10e device. At the next wake up, the SLATE should download and install the new pictureframe release version.

## Application upgrade

The regular application can be upgraded by pushing a new firmware file `bm0032_regular-sap10e-xx.yy.zz.bin` at the root of the device WebDAV directory `http://<device-ip-addr>/` with a WebDAV client.

After the firmware file pushing, a device reboot is required so that the new firmware file is taken into account.

## Configuration update

The configuration of the application can be updated also by pushing an appropriate `.js` configuration script (or a suitable `prefs.json` file) suitable for your application in the `.conf` WebDAV directory (`http://<device-ip-addr>/conf`) with the Web user interface or with a WebDAV client.

**⚠** Loading a wrong `prefs.json` would lead to some loss of data like the datasource server configuration. So check the consistency of the `prefs.json` file before uploading it in the device. To avoid any error on the configuration of the application and the configuration of the SAP10e device, it is advised to use a `.js` configuration script (and not with a `prefs.json` file) which is testing before executing anything that it is suitable for the SAP10e device and suitable for the application running on the device. Qeedji provides configuration script template. It is then highly recommended for the user to save an appropriate `.js` configuration script for each SAP10e device installed in his building.

A `0000000000.js` template is available for download [here](#).

In this case, the file pattern must be either:

- `configuration.js` : suitable for any device whatever its MAC address,
- `0000000000.js` : suitable for any device whatever its MAC address,
- `<device_LAN1_MAC_address>.js` (with the format `ABCDEFABCDEF.js`) : suitable for device whose MAC address is matching.

After having downloaded the configuration script template:

- edit the `0000000000.js` configuration script and uncomment/modify the appropriate lines according to your needs,
- rename the configuration script if required,
- once saved, drop it in the `.conf` WebDAV directory like explained above,
- when the `.js` configuration script is satisfying, save it preciously to be able to restore its configuration after wards.

After a `.js` configuration script uploading in the device, the device is rebooting automatically once to take the new configuration into account.

**☞** The `prefs.json` file is available in the `.conf` WebDAV directory of the devive as soon as the SAP10e device configuration is modified at least once by the user. After a device configuration updating with a `prefs.json` file, a device reboot is required so that the new configuration is taken into account.

**☞** Pushing a `.js` configuration script in the `.conf` WebDAV directory (`http://<device-ip-addr>/conf`) with a WebDAV client could raise a warning at the WebDAV client end, after the `.js` file transferring is completed because the device is automatically rebooting once when it is received. For example, after the `.js` file sending with BitKinex WebDAV is done, another network request is done by the WebDAV client while the device is currently rebooting. So a WebDAV error at the WebDAV client end leads to an automatic file resending which is causing another device reboot and so on, and this, until the WebDAV client application is closed. For example, after the `.js` file sending with CarotDAV WebDAV client, the error leads only to the displaying of a warning message. The user has just to ignore the error at the WebDAV client end.

### 3.1.12 Information > Device

In the **Information** tab, select the **Device** menu to view system information about the device.

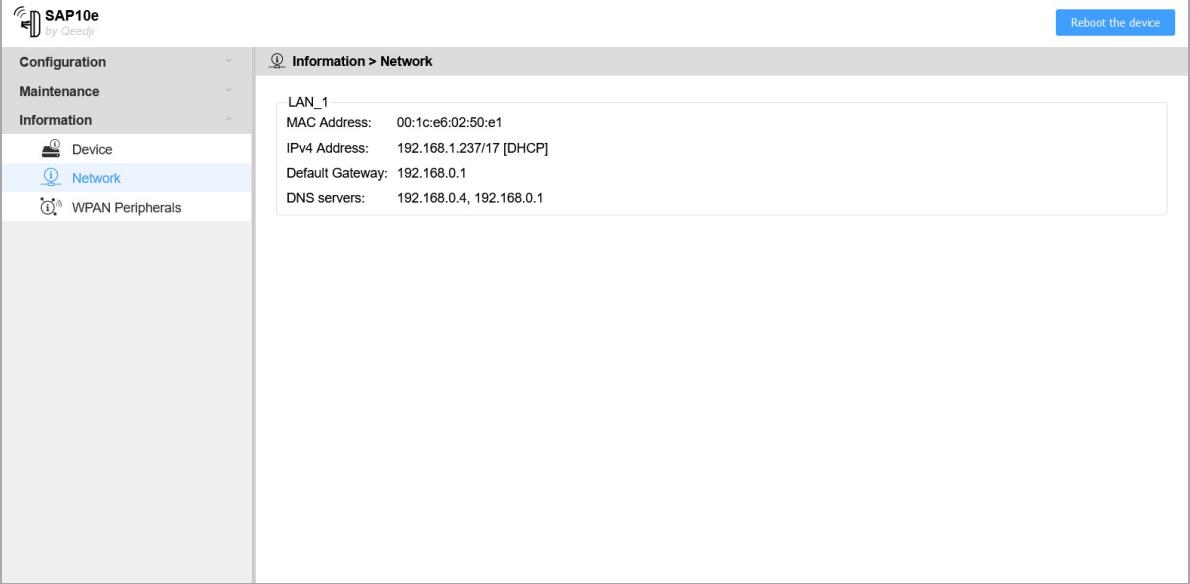
The screenshot shows a web-based interface for a SAP10e device. The top navigation bar includes a logo for 'SAP10e by Qeedji' and a 'Reboot the device' button. On the left, a sidebar menu lists 'Configuration', 'Maintenance', 'Information', 'Device' (which is selected and highlighted in blue), 'Network', and 'WPAN Peripherals'. The main content area is titled 'Information > Device' and displays the following system information:

Firmware:	bm0032_generic_server-sap10e-1.11.10_beta1
Model:	SAP10e
Manufacturer:	Qeedji
Manufacturer URL:	www.qeedji.tech
Hostname:	sap10e
UUID:	08b00004-0000-0000-0000-001ce60250e1
PSN:	01390-00004

- **Firmware** : label and version of the firmware embedded in the device,
- **Model** : model of the Qeedji device,
- **Manufacturer** : product manufacturer name,
- **Manufacturer URL** : manufacturer Website,
- **Hostname** : name of the device on the network,
- **UUID** : Universal Unique IDentifier,
- **PSN** : Product Serial Number.

### 3.1.13 Information > Network

In the **Information** tab, select the **Network** menu to view a summary of the device's network configuration.



The screenshot shows the SAP10e device interface. On the left, there is a sidebar with the following navigation options:

- Configuration
- Maintenance
- Information
  - Device
  - Network** (highlighted in blue)
  - WPAN Peripherals

The main pane is titled "Information > Network". It displays the following network configuration details for "LAN\_1":

- MAC Address: 00:1c:e6:02:50:e1
- IPv4 Address: 192.168.1.237/17 [DHCP]
- Default Gateway: 192.168.0.1
- DNS servers: 192.168.0.4, 192.168.0.1

A blue button labeled "Reboot the device" is located in the top right corner of the main pane.

**! The displaying of the IP V6 address value starting with the prefix `fe80::` is not supported in this pane. For further information, contact your IT department so that your network is advertising the IP V6 address with another prefix (ex: `fc00::`).**

### 3.1.14 Information > WPAN peripherals

In the **Information** tab, select the **WPAN Peripherals** menu to see WPAN peripherals paired to your SAP10e device.

Index	Manufacturer	Model	Serial Number	Hostname	Info
1	Qeedji	SLATE106	PSN00903-00013 CD8	slate106	Battery: 77%, Firmware rev: 1.11.10, Software rev: 1.11.11, Har...
2					
3					
4					
5	Qeedji	SLATE106	PSN00900-00078 CD0	slate-02	Battery: 100%, Firmware rev: 1.11.10, Software rev: 1.11.11, Ha...
6					
7					
8					
9					
10					

The pane allows to display system information like:

- **↻**: SLATE index column
- Manufacturer : *Qeedji* or *EnOcean*,
- Model : *Qeedji* model, *EnOcean* model,
- Serial Number : product serial number,
- Hostname : name of the SLATE device on the WPAN network,
- Info :
  - for *Qeedji* model:
    - Software rev : software release version running on the SLATE,
    - Firmware rev : boot loader software running on the SLATE put at the factory (can not be updated),
    - Hardware rev : SLATE hardware board version,
    - Battery : SLATE overall battery level in percent updated every connection to the SLATE.

The button **↻** allows to refresh the column information of the table. It could be required to wait for 15 minutes after a new configuration has been taken into account to see consistent values in this pane.

Example after having paired 4 SLATES on index 1, 2, 3 and 5.

Index	Manufacturer	Model	Serial Number	Hostname	Info
1	Qeedji	SLATE106	PSN00903-00013 CD8	slate106	Battery: 77%, Firmware rev: 1.11.10, Software rev: 1.11.11, Har...
2	Qeedji	SLATE106	PSN00900-00078 CD0	slate-02	Battery: 100%, Firmware rev: 1.11.10, Software rev: 1.11.11, Ha...
3	Qeedji	SLATE106	PSN00900-00247 CD0	slate106	Battery: 52%, Firmware rev: 1.11.10, Software rev: 1.11.11_bet...
4					
5	Qeedji	SLATE106	PSN00904-00002 CD1	slate-05	Battery: 77%, Firmware rev: 1.11.10, Software rev: 1.11.11, Har...
6					
7					
8					
9					
10					

# **Part IV**

---

**Technical information**

## 4.1 Technical specifications

<b>Model</b>	<b>Manufacturer</b>
SAP10e	Qeedji
<b>Power supply</b>	<b>Information</b>
PoE IEEE802.3af	POE power supply input: ES1 / PS2 (48 V – 20 mA)
<b>Processors</b>	
CPU	Nordic Semiconductor nRF52
Security processor	ARM CryptoCell 310
<b>Storage</b>	
Flash Memory for file system	8 MBytes
<b>Network</b>	<b>Other information</b>
1x Ethernet	10/100 Base T, male connector
<b>WPAN</b>	
Bluetooth Low Energy 5	
Frequency band: 2.402 to 2.480 GHz	
Tx Power: +8 dBm	
<b>Operating temperature</b>	<b>Storage temperature</b>
+0 °C to +40 °C	-20 °C to +60 °C
+32 °F to +104 °F	-4 °F to +140 °F
<b>Operating humidity</b>	<b>Storage humidity</b>
< 80 %	< 85 %
<b>Weight</b>	<b>Dimensions (W x H x D) (RJ45 male connector included)</b>
22 g	37 mm x 53,5 mm x 37 mm
0,078 lb	1,45" x 2,10" x 1,45"
<b>Plastic enclosure flame rating</b>	
Base: UL 94 V-0	
<b>Warranty</b>	
1 year	

## **4.2 Conformities**

### **EUROPE**

In conformity with the following European directives:

- LVD 2014/35/EU ,
- EMC 2014/30/EU ,
- RED 2014/53/EU .

# Part V

---

Contacts

## 5.1 Contacts

For further information, please contact us:

- **Technical support:** [support@qeedji.tech](mailto:support@qeedji.tech),
- **Sales department:** [sales@qeedji.tech](mailto:sales@qeedji.tech).

Refer to the Qeedji Website for FAQ, application notes, and software downloads: <https://www.qeedji.tech/>

Qeedji FRANCE  
INNES SA  
5A rue Pierre Joseph Colin  
35700 RENNES

Tel: +33 (0)2 23 20 01 62  
Fax: +33 (0)2 23 20 22 59

# **Part VI**

---

**Appendix**

## 6.1 Appendix: Qeedji PowerPoint publisher for SLATE

This appendix explains how to publish slides of a `.pptx` MS-Powerpoint presentation on SLATES paired to a SAP10e device using your MS-Office PowerPoint, on which the Qeedji PowerPoint Publisher for SLATE PowerPoint Add In is installed.

*☞ The Qeedji PowerPoint Publisher for SLATE PowerPoint Add In can deal with several SAP10e devices with the same MS-PowerPoint presentation.*

*☞ In this version, only the SAP10e devices, whose WebDAV servers are available with the `http://` scheme (default value), are supported.*

Prerequisite:

- the SLATEs need to be paired with the right index to each appropriate SAP10e device. For further information, refer to the chapter § Configuration > SLATEs pairing.

Sum-up in a SLATE pairing table, like explained below, each SLATE with their pairing index for each SAP10e device.

SAP10e device's hostname	SLATE index	PowerPoint section name	PowerPoint slide no	Name	Profession
floor-1	1	1st floor	1	Pr. Maddie NELSON	Radiologist physician
floor-1	2	1st floor	2	Pr. John SMITH	Radiologist physician
floor-1	3	1st floor	3	Dr. Patricia DUCHON	General practitioner
floor-1	4	1st floor	4	Waiting room	1st floor
floor-1	5	1st floor	5		
floor-1	6	1st floor	6	Sonia DELACOURT	Anesthetist nurse

SAP10e device's hostname	SLATE index	PowerPoint section name	PowerPoint slide no	Name	Profession
floor-2	1	2nd floor	7	Dr. Ashley ISAAC	Dentistry surgeries
floor-2	2	2nd floor	8	Dr. Xavier NELSON	Dentistry surgeries
floor-2	3	2nd floor	9	Pr. Stefan SCHMIDT	Cardiologist

*☞ In the example, the SLATEs are spread on two floors. In case your MS-PowerPoint presentation needs to deal with two SAP10e devices or more, do prefer use a MS-PowerPoint presentation with sections. In case your MS-PowerPoint presentation deals with only one SAP10e device, do prefer use a MS-PowerPoint presentation without section.*

Download the appropriate PPTX template and open it with your MS-Office PowerPoint.

The slides of the MS-PowerPoint templates given below are filling the right requirements to be displayed properly on the SLATEs:

- four grey level colors,
- layout with:
  - 4:3 format,
  - slidemaster layout for global modification,
  - a grey rectangle allowing to visualize the area reserved for the **optional** private message overlay which can be displayed thanks to the `SLATE Message Overlay` mobile application.
- one MS-PowerPoint presentation template with sections, another one without section.

The [With sections PPTX template](#) contains two sections:

- 1st floor section: made of 6 slides for the `floor-1`,
- 2nd floor section: made of 3 slides for the `floor-2`.

The [Without section PPTX template](#) contains no section.

## PowerPoint presentation preparation

Following the previous pairing table, prepare the slide content with one slide per SLATE device.

Given that the screen of the SLATEs devices has a 4:3 format, it is recommended to configure your PowerPoint presentation with a slide layout configured in the 4:3 aspect ratio as well. In the Design > Slide Size PowerPoint item, choose Standard (4:3) value instead of Widescreen (16:9) value.

Keep in mind that the final rendering will be finally displayed on a SLATE screen filling the following requirements: 800x600 pixel and four grey levels colors. Do use the grey colors shown below.

Grey color range	R-G-B (integer value)
Black	0-0-0
Dark grey	95-95-95
Light grey	159-159-159
White	255-255-255

Some sections can be used especially to publish on several SAP10e devices, with one section per SAP10e device or to shorten the publication time for a given SAP10e device by avoiding to publish useless slides. With a right click on the slide thumbnail list on the left, it is possible to remove one or all the sections. To add a section after a slide, select a slide in the slide thumbnail list, right clic, and choose Add section. You can for example rename the section with a name containing the hostname of the SAP10e device or containing the building floor where the SAP10e device is installed. Do not gather more than ten slides per section. The hidden slide remain affected to the SLATE but can not be published. For further information about PowerPoint sections, refer to the [Microsoft PowerPoint support about section](#).

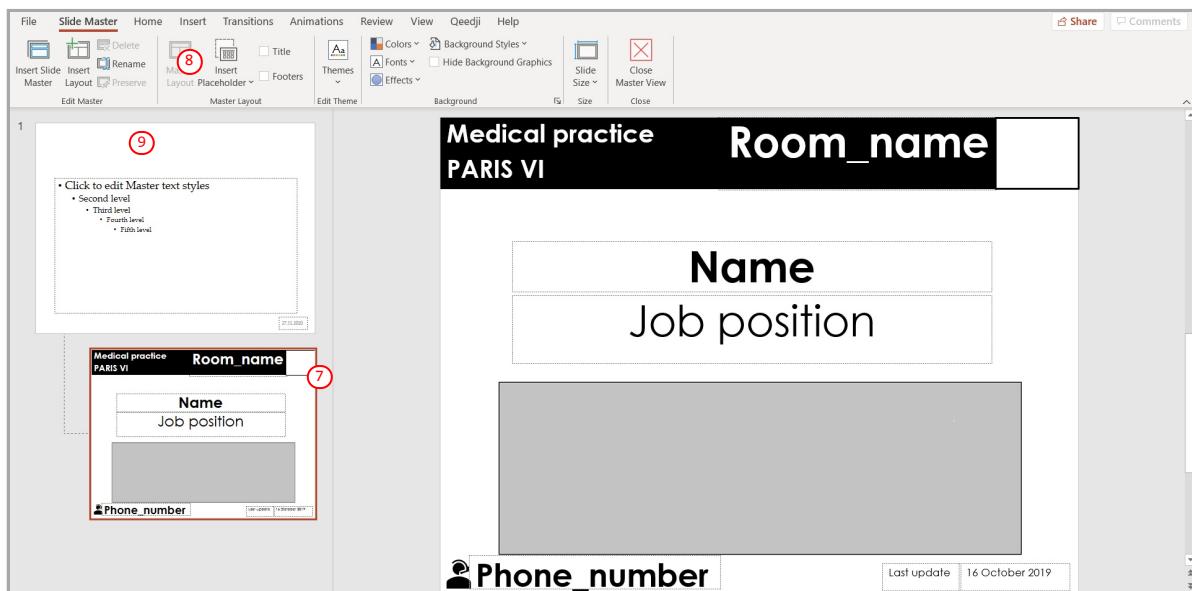
When there is no section at all, during the publication, the Qeedji PowerPoint Publisher for SLATE PowerPoint Add In switches automatically to another SAP10e device every ten slides. Ten is the max. number of SLATEs supported per SAP10e device.

In case you need to modify the PowerPoint layout template, the good practise is to modify the Slide Master. In the View (5) menu, click on the Slide Master (6) ribbon item.



Then:

- select the child Slide Master (7) to change texts or add new placeholders (8) for the common layout.
- select the parent Slide Master (9) to bring shape modifications (increase place holder size, change color) for the common layout,



Return to Normal (10) view to edit the text which is different for each slide.

Change the layout and the content according to your needs. Add as much slides as required.

## Qeedji PowerPoint Publisher for SLATE: installation

The Qeedji PowerPoint Publisher for SLATE PowerPoint Add In needs to be installed once:

- download the appropriate installer (.msi file):
  - [Qeedji PowerPoint Publisher for SLATE \(nt\\_ia64\)](#) for your MS-Office (nt\_ia64),
  - [Qeedji PowerPoint Publisher for SLATE \(nt\\_ia32\)](#) for your MS-Office (nt\_ia32).
- execute the installer and choose the **Everyone** or **Just for me** installation according to your needs. For example, choose **Just me**,
- click on **Next** button at each step by checking the default installation settings.

**☞ Choosing **Everyone** may require to run the PowerPoint with the Administrator rights to be able to deactivate the **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In afterwards.**

Open MS-Office PowerPoint and check that a **Qeedji** (1) menu has appeared. Clicking on it makes appear a **Qeedji** ribbon which has 3 items:

- **Publish** (2),
- **Settings** (3),
- **Export** (4),
- **About** (5).



**☞ If the **Qeedji** menu (1) does not appear after a successful installation, contact support@qeedji.tech.**

**☞ In the **Qeedji** ribbon, click on the **About** (5) item to see the version of the **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In.**

**☞ For older computer, it could be requested to install first .NET framework version 4.x.Y before installing the **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In.**

**☞ The same language is used for **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In interface and the MS-Windows one.**

**☞ In case you need to upgrade **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In, it is required to close MS-Office PowerPoint and open it again to use the new version.**

**☞ In some rare cases, the warning message **PowerPoint has problems with the Qeedji complement**. If the problem persists, disable this add-on and check for updates. Do you want to disable it now? (yes/no) could be prompted when opening a MS-Office PowerPoint. In this case, do ignore the message by clicking **No**. It should not prevent the **Qeedji PowerPoint Publisher for SLATE** to work properly.**

## Qeedji PowerPoint Publisher for SLATE: Uninstallation

In case you need to uninstall **Qeedji PowerPoint Publisher for SLATE** PowerPoint Add In, use the **Add or remove programs** Windows menu, then remove the **Qeedji PowerPoint Publisher for SLATE** program.

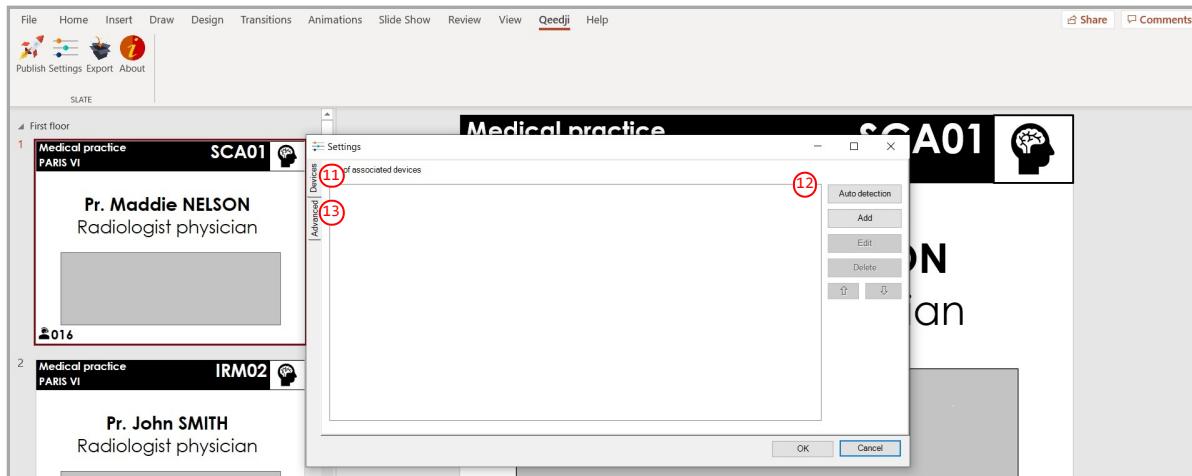
## Qeedji PowerPoint Publisher for SLATE: register one or several devices



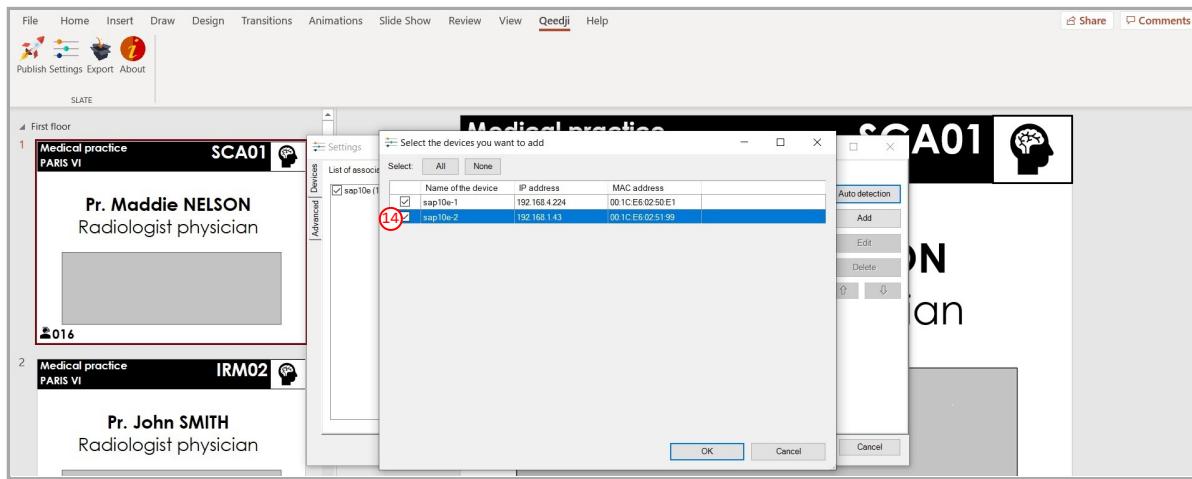
To register one or several SAP10e devices, open your MS-Office Powerpoint presentation then:

- click on the Qeedji **①** menu,
- on the Qeedji ribbon, click on the Settings **③** item to access to the SAP10e device registering panel.

On the Advanced **⑬** tab, you can define a *Background color* with a color picker. The background color is only used when the *Slide Size* is not Standard 4:3. On the Devices **⑪** tab, click on the Auto detection **⑫** button to detect the SAP10e devices available on your local network.



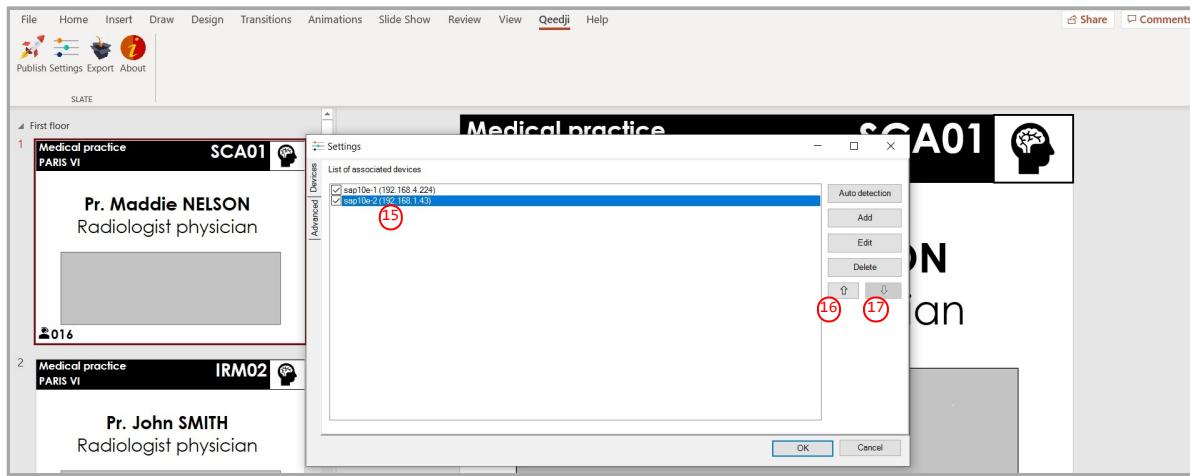
Select **⑭** the appropriate SAP10e devices to create a list of appropriate SAP10e devices as possible applicant for the MS-Powerpoint presentation.



Select then the only SAP10e devices on which you want to publish, by double clicking on them.

**☞** The SAP10e devices sorting order in the list is decisive because it is taken into account during the publication. The slides of the first section, or the first ten slides, are always affected to the SAP10e device located at the top of the list. Then the publication is continuing with the next SAP10e device located immediately below, and so on.

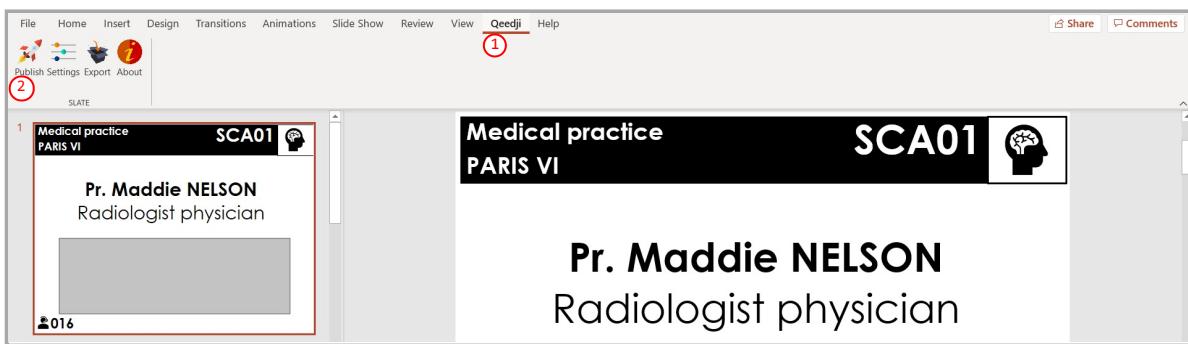
Select a SAP10e device and use the up **⑯** arrow or the down **⑰** arrow to sort them in the right order to match the MS-PowerPoint sections.



## Qeedji PowerPoint Publisher for SLATE: publish

To publish a content on your SLATEs through the SAP10e devices, open your MS-Office Powerpoint presentation. Then:

- click on the Qeedji (1) menu,
- on the Qeedji ribbon, click on the Publish (2) item.



☞ Before publishing with the *Publish* item, it is advised to check in the *Settings* item, that the registered SAP10e devices are consistent and sorted in the right order.

The *Publishing status report* is showing whether the publishing on each SAP10e devices has succeeded or not:

- Publishing succeeded : the publication has succeeded
- Publishing failure (Error: 503) : the publishing has failed. In this case, check the network connection between your computer and the SAP10e.

*Publishing status report example:*

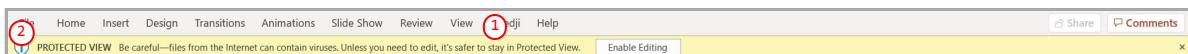
```
1/2 - Publishing on device: *floor-1* (192.168.1.121)
- Publishing of the slide: 1 on the SLATE: 1/6
  Publishing succeeded
- Publishing of the slide: 2 on the SLATE: 2/6
  Publishing succeeded
- Publishing of the slide: 3 on the SLATE: 3/6
  Publishing succeeded
- Publishing of the slide: 4 on the SLATE: 4/6
  Publishing succeeded
- Publishing of the slide: 5 on the SLATE: 5/6
  Publishing succeeded
- Publishing of the slide: 6 on the SLATE: 6/6
  Publishing succeeded
```

```
2/2 - Publishing on device: *floor-2* (192.168.1.181)
- Publishing of the slide: 7 on the SLATE: 1/3
  Publishing succeeded
- Publishing of the slide: 8 on the SLATE: 2/3
  Publishing succeeded
- Publishing of the slide: 9 on the SLATE: 3/3
  Publishing succeeded
```

**Publishing completed**

☞ When a slide is hidden, the PPK content publication is not done for this slide index, which is associated to a SLATE index.

☞ The *protected view* may prevent to publish properly by returning this error: *Publishing failure (Error: Unable to save a copy of the current document)*. To work around, click on the *Enable editing* button before publishing.



☞ During the publication, the PowerPoint slides are immediately transformed into PPK content (proprietary format) and copied into the appropriate WebDAV directories of the SAP10e devices. For example, with the [PPTX template with sections](#), the PPK are copied in the following directories.

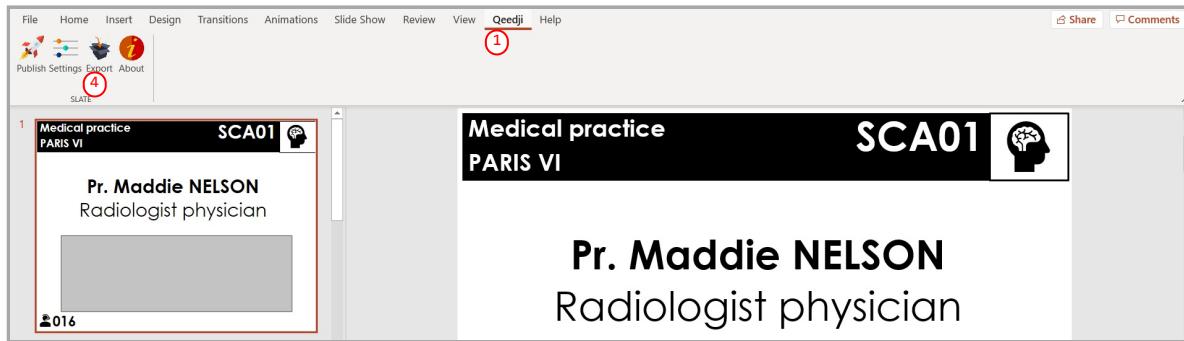
```
http://<SAP10e_1_ip_addr>/.output/1
http://<SAP10e_1_ip_addr>/.output/2
http://<SAP10e_1_ip_addr>/.output/3
http://<SAP10e_1_ip_addr>/.output/4
http://<SAP10e_1_ip_addr>/.output/5
http://<SAP10e_1_ip_addr>/.output/6

http://<SAP10e_2_ip_addr>/.output/1
http://<SAP10e_2_ip_addr>/.output/2
http://<SAP10e_2_ip_addr>/.output/3
```

After the publication, wait until 15 minutes (default SLATE wake up policy), the time for the SLATE to update their content.

## Qeedji PowerPoint Publisher for SLATE: export

To export each slide content into a respective PPK content file, click on the Export  button to select the output directory.



- Exporting of the slide: 1
- Exporting of the slide: 2
- Exporting of the slide: 3
- Exporting of the slide: 4
- Exporting of the slide: 6
- Exporting of the slide: 7
- Exporting of the slide: 8
- Exporting of the slide: 9
- Exporting of the slide: 10

Exporting completed of 9 unmasked slides

## 6.2 Appendix: Qether

In case an application can not be executed, the SAP10e returns to a `Recovery` mode, waiting for firmware update.

The provided `Qether` tool allows to make some remote operations on the SAP10e, based on its device MAC address like:

- SAP10e device firmware upgrade,
- SAP10e device configuration update,
- SAP10e device reboot.

The `<product_type>` is an extract of the device PSN value. For example, the `0139x-xxxx` PSN value leads to the `0139 <product_type>`.

The `<SAP10e_device_MAC_address>` is the MAC address of the device with the format `00:1C:E6:AB:CD:EF`.

 The MAC address of the device is written on the label stuck at the back of the SAP10e device with the format `00-1C-E6-AB-CD-EF`.

### Discover command example

This command allows to find out the SAP10e devices available on the local network:

```
qether.exe FF 0139 discover
```

### Configuration command syntax

Send a `.json` configuration file and apply it (default parameters):

```
qether.exe <SAP10e_device_MAC_address> <product_type> configure -f prefs.json
```

- The `system.httpd.username` preference value is limited to 15 characters max. The `system.httpd.password` preference value is limited to 100 characters max. The alphanumeric characters and the following characters `{}/~[]!#$&()/:;=@|^%?+~((,),'` are supported for the `system.httpd.username` and `system.httpd.password` preference values.
- The `system.hostname` preference value is limited to 15 characters max. The alphanumeric characters, the character `-` and the character `.` are supported for the `system.hostname` preference value.
- To get an IP address with the DHCP server, set `system.lan1.ipv4.static-addr` with the value `false`. Else to work with a static IP address, set `system.lan1.ipv4.static-addr` with the value `true`.

### Reboot command syntax

Reboot the target device:

```
qether.exe <SAP10e_device_MAC_address> <product_type> reboot
```

### Firmware upgrade command syntax

To send a firmware file, with the default transfer parameters, and install it. execute this command with this syntax:

```
qether.exe <SAP10e_device_MAC_address> <product_type> install -f bm0032_generic_server-sap10e-setup-1.11.10.bin
```

- *Qether needs first to be installed first on your MS-Windows computer. For further information, refer to the [Qether user manual](#).*

## 6.3 Appendix: Web services

These are the supported Web services for the regular application to command and control the SAP10e:

Web services paths	HTTP method				Query string parameters	Body	Description	From the generic server application version
	GET	POST	PUT	DELETE				
api/v1/sys/power		yes			<state>=rebooting	""	Reboot the device	1.11.10
api/v1/software/version	yes					i.e.: {"value": "1.10.11"}	Get the device delivery software version	1.11.10
api/v1/software/label	yes					{"value": "bm0032_generic_server"}	Get the device delivery software label	1.11.10
api/v1/sys/sn	yes					PSN Short representation: i.e.: {"value": "01390-00004"}	Get the device SN	1.11.10
api/v1/sys/model-name	yes					{"value": "SAP10e"}	Get the device model name	1.11.10
api/v1/sys/manufacturer	yes					{"value": "Qeedjii"}	Get the manufacturer	1.11.10
api/v1/sys/manufacturer-url	yes					{"value": "www.qeedjii.tech"}	Get Web Site of manufacturer	1.11.10
api/v1/sys/uuid	yes					Uuid string value: <uuid> = <psn>-<48x0>-<mac-48> i.e.: {"value": "08400004-0000-0000-001ce6024cad"}	Get the device UUID	1.11.10
api/v1/wpan1/mac	yes					Bluetooth MAC address value user formatted: i.e.: {"value": "e6:97:8c:83:b3:8d"}	Get the device Bluetooth MAC address	1.11.10
api/v1/wpan1/slate/capabilities	yes					The key "maxDevices" tells the maximum number of paired SLATEs. {"maxDevices": 10}	Get the max. number of SLATEs device supported by the SAP10e devices.	1.11.10
api/v1/wpan1/slate/devices-info	yes					The key "devices" is an array of JSON objects containing keys useful for this web service. {"devices": [ {"index": 1, "hostname": "sapi1", "serialNumber": "SN01390-00258 CD6", "manufacturerName": "Qeedjii", "modelNumber": "SLATE10e", "hardwareRevision": "Rev.C", "firmwareRevision": "1.11.10", "softwareRevision": "1.11.11", "batteryLevelPercentage": 35, "rssI": "-65"}, {"index": 5, "hostname": "saps5", "serialNumber": "SN00900-00259 CD6", "manufacturerName": "Qeedjii", "modelNumber": "SLATE10e", "hardwareRevision": "Rev.C", "firmwareRevision": "1.11.10", "softwareRevision": "1.11.11", "batteryLevelPercentage": 45, "rssI": "-65"} ]}	Retrieve the device information and the battery level for each SLATE connected to the SAP10e access point.	1.11.10
api/v1/wpan1/slate/pictureframe	yes					The key "devices" is an array of JSON objects containing keys useful for this web service. {"devices": [ {"index": "1", "pictureETag": "0x219486bf", "pictureSyncState": "synchronized"}, {"index": "2", "pictureETag": "0xb4a42a3f5", "pictureSyncState": "synchronized"}, {"index": "3", "pictureETag": "0x358ceb1f", "pictureSyncState": "unsynchronized"}, {"index": "5", "pictureETag": "0x84f04943", "pictureSyncState": "undefined"} ]} with "pictureSyncState" = "synchronized"   "unsynchronized"   "undefined"	Get the synchronization status of each SLATES showing whether the SLATEs content are properly synchronized with the PPI picture available on the SAP10e access point.	1.11.10

## Examples by using Curl tool

The value 192.168.1.50 is an IP address example of a SAP10e device, and admin / admin , the login credentials to access to the Web services of the SAP10e device:

- curl command example to get the device firmware version:

```
curl --user "admin:admin" -X GET "http://192.168.1.50/api/v1/software/version"
```

- curl command example to get the list of the paired devices:

```
curl --user "admin:admin" -X GET "http://192.168.1.50/api/v1/wpan1/slate/devices-info"
```

## Web site

When the Web services are executed from Web site, it may be required to configure the device so that the Web services can be supported properly:

- the CORS header should be activated,
- the origin or your Web site should be defined.

For further information, refer to the chapter § Maintenance > Preferences.

## 6.4 Appendix: Device configuration with TFTP server (+ DHCP server code 66)

The SAP10e device can be configured thanks to a `.js` configuration script (Javascript) hosted on a `TFTP`<sup>1</sup> server associated to a `DHCP` server (code 66 option) properly configured and available on the local network.

<sup>1</sup> Trivial File Transfer Protocol

The `.js` configuration script downloading can be done as soon as a `DHCP` server is available, even whether the device is configured with a static IP address. Once connected to the `DHCP` server, the device can get:

- the IP address value of its network interface, when the option `Obtain IP address automatically by DHCP` is activated then,
- the primary DNS value when the `system.lan1.dns.static` user preference is `false` then,
- the `.js` configuration script from the `TFTP` server when the `system.tftp.enable` user preference is `true`.

Prerequisites:

- the appropriate `.js` configuration script must be available in the exported directory of the `TFTP` server. It must:
  - be suitable for the device, its firmware type and its firmware version,
  - match an appropriate filename pattern:
    - `000000000000.js` or,
    - `<device_LAN1_MAC_address>.js` (with the format `ABCDEFABCDEF.js`).

When a `.js` configuration script is modified on the `TFTP` server, the device must be restarted once so that the new configuration script is taken into account by the device.

☞ When using a `TFTP` server, the `configuration.js` filename pattern is not supported.

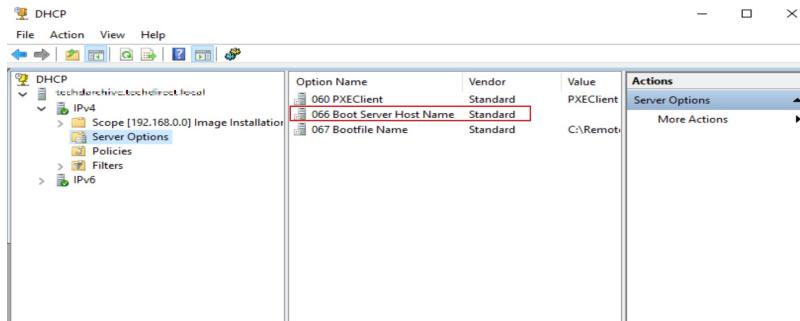
⚠ The downloading of a `.js` configuration script from a `TFTP` server can be done only at the device booting-up and when the device has never downloaded it before or when the script content has been modified since the last download (CRC check).

### DHCP server configuration

The `DHCP` server must be configured to be associated to a `TFTP` server. For that, you need to use code 66 option (`TFTP Server`), using the IPv4 address value of the `TFTP` server.

For example, for a `Microsoft DHCP server`, you need to define the option `Boot Server Host Name` and give the IPv4 address of the `TFTP` server. It can be in `Extended option` and/or `Server Options`.

☞ The service must be restarted so that the modifications are fully reflected.

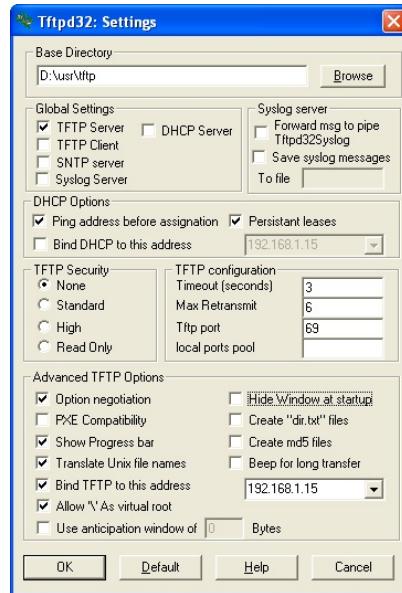


### TFTP server configuration

The configuration is depending on the used software client. In all cases, you need to:

- get the directory URL that can be seen by `TFTP` clients,
- choose a `TFTP` security `None`,
- keep the default port (69).

Here is an example of the `tftpd32` software with MS-Windows.



In this example, the `TFTP` server address is `192.168.1.15` and the exported directory is `D:/usr/tftp`.

☞ In this pane, enter the IP address of the `TFTP` server. Indeed entering the `TFTP` server domain name may prevent the feature to work properly.

Copy the `.js` configuration script in the exported directory of the `TFTP` server.

☞ It is recommended to have one `.js` configuration script per device by following the pattern `<MAC>.js`.