**Middleware server API interface**

## Development environment

Linux + Apache + PHP + Memcached

## Function Description

1. All interface use HTTP request of POST mode
2. Return data format adopts stand JSON string
3. All Request and responses work as asynchronous return (except device registration and device login)

## Process

1**、Device Registration** 

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### 2、Command request and response



### 3、Real-time record notification



## Device cloud configuration

1. Configure network，Make sure the device can connect Internet
2. Setup Cloud server

**Server IP address**： device.api.beta.crosschex.us

**User Name**： （Assigned by the application）

**Pawword**： （Assigned by the application）

**On Application(APP) side need provide 4 interface (URL address) to get the callback**

1. **Device registration interface (URL address):**

This interface use to APP feedback device register status. When device connect with cloud(Soap Server), the middle ware server will provide device information to APP. The APP will verification the device information(serial number, Mode and so on) whether it is approved device. Then the APP will keep or abandon this device. The APP keep the device information that’s means the device already registered successful on your APP. Then APP must with a interface (URL) feedback device register status as “success”.

The middle ware server will provide APP the below string:

**Serial\_number:** hardware device serial number (every device with unique serial number)  
 **model:** device model (Such as: W1\_972)   
  **firmware:** device firmware version

**protocol:** Communication version

1. **Device login interface:** use to device login in the APP. Because the **Device registration** is for APP to get device information. The **Device login** means the device starting create communication with APP. In the hardware there a “user name” and “password” and when device registered in the cloud. The middle ware server will send “user name” and “password” from device to APP. The APP verify the “user name” and “password” to make the device communication with APP. Then the **Device login interface** need feedback success.

Login verification information:  
**Serial\_number:** hardware device serial number (every device with unique serial number)  
**username**: user name  
**password:**  password

1. **APP asynchronous callback interface(URL):** When APP send request command to the device, after device running the request, the middle ware server will send the request result to APP asynchronous callback interface

The result:

**Serial\_number:** hardware device serial number (every device with unique serial number)  
task\_id: request task number

command: command name

data: request result

1. **Get Real time record interface(URL)**：When device with new time attendance records, the middle ware server will use this interface tell the APP with new time attendance record.

Real time record

## Explanation

There are two return mode between the APP and middle ware server: **Synchronous return and Asynchronous return**

1. **Synchronous return ：**When device registration and login in the APP. The middle ware server will waiting for the APP interface (URL) feed back the registration or login statues. When APP feed back “success” the middle ware will continue next command.

**Asynchronous return**： When APP request the middle ware server get hardware device network information, after middle ware server get the network information from device will feedback to the APP by asynchronous callback interface

1. **Task\_id**：The APP send request command to the middle ware server, APP need create a unique task id number(6 digit number) for the request command. When middle ware server feed back the result of the request command also include the task id.