Iot Web Server

Designs and plans

2017

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# Sensors

## GPS

Data exchange key/value for GPS sensor:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key** | **Android** | **Embedded** | **PHP** | **Unit in DB** |
| utc\_date |  | ddMMyy |  |  |
| utc\_time |  | hhmmss.SSS |  |  |
| utc\_time\_stamp | currentmillis |  | millisecond | millisecond |
| latitude | decimal | 2234.8092 | decimal | decimal |
| lat\_ns |  | N |  |  |
| longitude | decimal | 8826.4464 | decimal | decimal |
| long\_ew |  | E |  |  |
| speed | kmph | knots | kmph | kmph |
| altitude | decimal (meter) | decimal (meter) | decimal (meter) | decimal (meter) |

# Services

## Generic

Below services will be used by all.

### Authentication Service

#### URL

http://<domain-alias>/services/auth/login.php

https://<domain-alias>/services/ auth/login.php

#### Data Structure

##### Request

The posted data must be in json with the below format.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| username | M |  | 1. Username of a user  2. device\_id of a device |
| password | M |  | 1. Password of a user  2. client\_secret of a device (A secret token already shared with device at provisioning stage) |

Example json:

{

"username":"861693034850735",

"password":"g4881hkoip6upkucjjgj84m2f3"

}

##### Response

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| session\_id | M |  |  |
| utc\_current\_timestamp | M |  |  |
| utc\_current\_date | M |  | yyMMdd |
| utc\_current\_time | M |  | hhmmss |

Example json:

{

"session\_id":"g4881hkoip6upkucjjgj84m2f3"

"utc\_current\_timestamp":""

"utc\_current\_date":"yyMMdd"

"utc\_current\_time":"hhmmss"

}

## Android

## Embedded

### Authentication Service

#### URL

http://<domain-alias>/services/embedded/auth.php

https://<domain-alias>/services/embedded/auth.php

#### Data Structure

##### Request

The posted data must be in json with the below format.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| d\_id | M | Device ID |  |
| d\_key | M | Device secret key (A secret token already shared with device at provisioning stage) |  |

Example json:

{

"d\_id":"861693034850735",

"d\_key":"g4881hkoip6upkucjjgj84m2f3"

}

##### Response

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| s\_id | M | Session ID |  |
| utc\_cur\_d | M | Current UTC Date | yyMMdd |
| utc\_cur\_t | M | Current UTC Time | hhmmss |
| u\_conf | M | True, if system has a updated configuration; otherwise false | Boolean |

Example json:

{

"sid":"g4881hkoip6upkucjjgj84m2f3",

"utc\_cur\_d":"yyMMdd",

"utc\_cur\_t":"hhmmss",

"u\_conf":"true"

}

### Heart Beat Service

#### URL

http://<domain-alias>/services/embedded/heartbeat.php

https://<domain-alias>/services/embedded/heartbeat.php

#### Data Structure

##### Request

The posted data must be in json with the below format.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| s\_id | M | Session ID |  |
| d\_id | M | Device ID |  |
| batt | M | Percentage level of the battery | 0-100 |

Example json:

{

"s\_id":"g4881hkoip6upkucjjgj84m2f3",

"d\_id":"861693034850735",

"batt":"65"

}

##### Response

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| utc\_cur\_d | M | Current UTC Date | yyMMdd |
| utc\_cur\_t | M | Current UTC Time | hhmmss |
| u\_conf | M | True, if system has a updated configuration; otherwise false | Boolean |

Example json:

{

"utc\_cur\_d":"yyMMdd",

"utc\_cur\_t":"hhmmss",

"u\_conf":"true"

}

### postdata

#### URL

http://<domain-alias>/services/embedded/postdata.php

https://<domain-alias>/services/embedded/postdata.php

#### Data Structure

The posted data must be in json with the below format.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| session\_id | M |  |  |
| device\_id | M |  |  |
| message\_id | O |  |  |
| battery\_level | M | % | 0-100 |
| sensor\_data.gps\_sensor.capture\_date | O | yyMMdd |  |
| sensor\_data.gps\_sensor.capture\_time | O | hhmmss |  |
| sensor\_data.gps\_sensor.utc\_date | M | ddMMyy |  |
| sensor\_data.gps\_sensor.utc\_time | M | hhmmss.SSS |  |
| sensor\_data.gps\_sensor.latitude | M | ddmm.mmmm |  |
| sensor\_data.gps\_sensor.lat\_ns | M |  | N = North, S = South |
| sensor\_data.gps\_sensor.longitude | M | ddmm.mmmm |  |
| sensor\_data.gps\_sensor.long\_ew | M |  | E = East, W = West |
| sensor\_data.gps\_sensor.altitude | O | meters |  |
| sensor\_data.gps\_sensor.speed | O | knots |  |
| sensor\_data.temperature\_sensor.capture\_date | O | yyMMdd |  |
| sensor\_data.temperature\_sensor.capture\_time | O | hhmmss |  |
| sensor\_data.temperature\_sensor.temperature | M | Celcius |  |
| sensor\_data.lock\_sensor.capture\_date | O | yyMMdd |  |
| sensor\_data.lock\_sensor.capture\_time | O | hhmmss |  |
| sensor\_data.lock\_sensor.lock\_status | M |  | 0 = Unlocked, 1 = Locked |

Example json:

{

"session\_id":"g4881hkoip6upkucjjgj84m2f3",

"device\_id":"861693034850735",

"message\_id":"<any unique id (optional)>",

"battery\_level":"65",

"sensor\_data":{

"gps\_sensor":{

"capture\_date":"ddMMyy",

"capture\_time":"hhmmss.SSS",

"utc\_date":"ddMMyy",

"utc\_time":"hhmmss.SSS",

"latitude":"2234.8092",

"lat\_ns":"N",

"longitude":"8826.4464",

"long\_ew":"E",

"altitude":"decimal in meters",

"speed":"knots"

},

"temperature\_sensor":{

"capture\_date":"ddMMyy",

"capture\_time":"hhmmss.SSS",

"temperature":"celcius"

},

"lock\_sensor":{

"capture\_date":"ddMMyy",

"capture\_time":"hhmmss.SSS",

"lock\_status":"0"

}

}

}

## Local

### getdata

#### URL

http://<domain-alias>/services/local/getdata.php

https://<domain-alias>/services/local/getdata.php

#### Data Structure

##### Request

The request data must be in json with the below format.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| device | M |  | 1. Username of a user  2. device\_id of a device |
| password | M |  | 1. Password of a user  2. client\_secret of a device (A secret token already shared with device at provisioning stage) |

Example json:

{

"username":"861693034850735",

"password":"g4881hkoip6upkucjjgj84m2f3"

}

##### Response

|  |  |  |  |
| --- | --- | --- | --- |
| **Key** | **M/O** | **Description** | **Valid Values (if any)** |
| session\_id | M |  |  |
| utc\_current\_timestamp | M |  |  |
| utc\_current\_date | M |  | yyMMdd |
| utc\_current\_time | M |  | hhmmss |

Example json:

{

"session\_id":"g4881hkoip6upkucjjgj84m2f3"

"utc\_current\_timestamp":""

"utc\_current\_date":"yyMMdd"

"utc\_current\_time":"hhmmss"

}

# Web Application User Interface

Screens needed:

1. Login
2. Dashboard
3. Edit Device Properties
4. Real-time view
5. Reporting

## Login

## Dashboard

## Edit Device Properties

## Real-time view

## Reporting