OpenAquaponics

Application SDK

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# Description

Put in a description here

# Database Table Definitions

## OAServer.OAUserInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| sUsername | REQUIRED | PRIMARY | VARCHAR | 32 | The username |
| sEmail | REQUIRED | N/A | VARCHAR | 64 | The email address of the user |
| sFirstname | REQUIRED | N/A | VARCHAR | 32 | The first name |
| sLastName | NOT REQUIRED | N/A | VARCHAR | 32 | The last name |
| sAddress | NOT REQUIRED | N/A | VARCHAR | 128 | The address line 1 |
| sAddress2 | NOT REQUIRED | N/A | VARCHAR | 128 | The address line 2 |
| sCity | NOT REQUIRED | N/A | VARCHAR | 32 | The city |
| sState | NOT REQUIRED | N/A | VARCHAR | 32 | The state |
| sZip | NOT REQUIRED | N/A | VARCHAR | 16 | The zip code |
| sPhone | NOT REQUIRED | N/A | VARCHAR | 16 | The phone number |
| bPublic (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user account is public or private |
| bEnable (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user account is enabled or disabled |

## OAServer.OAUserPass

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| sUsername | REQUIRED | PRIMARY | VARCHAR | 32 | The username |
| sPassword | REQUIRED | N/A | VARCHAR | 32 | A salted hash of the password |

## OAServer.OASystemCfg

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| sUsername | REQUIRED | FOREIGN | VARCHAR | 32 | The owner of the system |
| sSystemId | REQUIRED | PRIMARY | VARCHAR | 16 | Unique ID of the system |
| sGroupId | NOT REQUIRED | FOREIGN | VARCHAR | 16 | Unique ID of the group |
| sDescription | NOT REQUIRED | N/A | VARCHAR | 256 | System description |
| bPublic (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user system is public or private |
| bEnable (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user system is enabled or disabled |

## OAServer.OANodeCfg

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| sUsername | REQUIRED | FOREIGN | VARCHAR | 32 | The owner of the node |
| sSystemId | REQUIRED | FOREIGN | VARCHAR | 16 | Unique ID of the system |
| sNodeId | REQUIRED | PRIMARY | VARCHAR | 16 | Unique ID of the node |
| sChannelNames | NOT REQUIRED | N/A | VARCHAR | 256 | The name for each sampling channels separated by a comma (,) |
| sChannelUnits | NOT REQUIRED | N/A | VARCHAR | 64 | The units for each sampling channel separated by a comma ,) |
| mPollingPeriod (60) | NOT REQUIRED | N/A | INT | -- | The polling period between samples |
| sDescription | NOT REQUIRED | N/A | VARCHAR | 256 | Description of the node |
| bPublic (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user node is public or private |
| bEnable (TRUE) | NOT REQUIRED | N/A | BOOL | -- | The user node is enabled or disabled |

## OAServer.OAGroup

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| sGroupId | REQUIRED | PRIMARY | VARCHAR | 16 | Unique ID of the group |
| sDescription | NOT REQUIRED | N/A | VARCHAR | 256 | Group description |

## OAServer.OAAccounting

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| mIdx | NOT REQUIRED | PRIMARY | INT | -- | Table primary key (AUTO\_INCREMENT) |
| mNum | NOT REQUIRED | N/A | INT | -- | The transaction ID for the user |
| sUsername | REQUIRED | FOREIGN | VARCHAR | 32 | The owner of the transaction |
| sGroupId | NOT REQUIRED | FOREIGN | VARCHAR | 16 | The transaction group ID |
| sSystemId | NOT REQUIRED | FOREIGN | VARCHAR | 16 | The transaction system ID |
| sNodeId | NOT REQUIRED | FOREIGN | VARCHAR | 16 | The transaction node ID |
| dDate | NOT REQUIRED | N/A | DATE | -- | The transaction date/time |
| fAmount | REQUIRED | N/A | FLOAT | -- | The transaction amount |
| sDescription | NOT REQUIRED | N/A | VARCHAR | 256 | Transaction description |

## OAData.{sNodeId}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Column Name (Default) | Required | Key | Type | Length | Description |
| mIdx | REQUIRED | PRIMARY | INT | -- | The sample number (AUTO\_INCREMENT) |
| mTimeTag | REQUIRED | N/A | INT | -- | The timetag of the sample in seconds (time is relative to Linux epoch) |
| sData | REQUIRED | N/A | VARCHAR | 256 | The sample data separated by commas (,) |

# OpenAquaponics API v1

## Summary

Paths are relative to: [www.api.opensourceaquaponics.com/v1/](http://www.api.opensourceaquaponics.com/v1/)

UID = User ID

SID = System ID

NID = Node ID

TID = Task ID

AID = Accounting ID

## OACommunity

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /OACommunity | FALSE | High level statistics, number of users, total up time, number of groups, number of systems, number of nodes, a sample plot from a public account, etc. |
| GET | /OACommunity/OAUsers | FALSE | Gets a listing of the public users, should support some kind of search feature. |

## OAGroups

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /OAGroups | FALSE | List of groups users can be members of (ie: personal, commercial, research, Utah Aquaponics Grows Association, etc) |
| PUT | /OAGroups | TRUE | Create a new group |

## OAUser

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /{UID}/OAUser | FALSE | Gets basic user information (nothing sensitive) |
| GET | /{UID}/OAUser | TRUE | Gets all user information (potentially sensitive) |
| PUT | /{UID}/OAUser | TRUE | Puts the updated user information |
| POST | /{UID}/OAUser | FALSE | Attempts to create new user and authenticates via email; Locks out IP after ‘x’ attempts, etc. |

## OASystems

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /{UID}/OASystems | TRUE/FALSE | Get the list of OASystems attached to this user; Can be public/private |
| POST | /{UID}/OASystems | TRUE | Create a new OASystem IDs for this system, system name, system description, group association, public/private, etc. |
| GET | /{UID}/OASystems/{SID} | TRUE/FALSE | Get the list of OANode IDs for this system, system name, system description, group association, etc; Can be public/private |
| PUT | /{UID}/OASystems/{SID} | TRUE | Update the list of OANode IDs for this system, system name, system description, group association, public/private, etc. |
| DELETE | /{UID}/OASystems/{SID} | TRUE | Deletes a system pairing of OANodes and gives the OANode no grouping |

## OANodes

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /{UID}/OANodes | TRUE/FALSE | Get the list of OANodes attached to this user; Can be public/private |
| POST | /{UID}/OANodes | TRUE | Create a new OANode ID for this system, system name, system description, group association, public/private, etc. Also creates the OANode\data MySQL table. |
| GET | /{UID}/OANodes/{NID} | TRUE/FALSE | Get the OANode IDs, node name, node description, hardware configuration (pins, units, etc), get the OATasks attached to this node, group association, etc; Can be public/private |
| PUT | /{UID}/OANodes/{NID} | TRUE | Update the node name, node description, hardware configuration (pins, units, etc), get the OATasks attached to this node, group association, public/private, etc. |
| DELETE | /{UID}/OANodes/{NID} | TRUE | Deletes a OANode from the database and all associated data |
| GET | /{UID}/OANodes/{NID}/data | TRUE/FALSE | Get the OANode IDs sampled data, allows some type of data thresholding and selection; Can be public/private |
| POST | /{UID}/OANodes/{NID}/data | TRUE | Creates OANode sample data onto the server |
| PUT | /{UID}/OANodes/{NID}/data | TRUE | Modifies OANode sample data onto the server |
| DELETE | /{UID}/OANodes/{NID}/data | TRUE | Deletes the OANode data from the database, can support some data selection (ie: by date, by row, etc) |

## OATasks

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /{UID}/OATasks | TRUE | List all of the monitoring tasks associated with the user |
| POST | /{UID}/OATasks | TRUE | Create a new monitoring task associated with a OANode or list of OANodes |
| GET | /{UID}/OATasks/{TID} | TRUE | Get the monitoring task associated with a OANode or list of OANodes |
| PUT | /{UID}/OATasks/{TID} | TRUE | Update a particular monitoring task associated with a OANode |
| DELETE | /{UID}/OATasks/{TID} | TRUE | Delete a particular monitoring task |

## OAAccounting

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | RESOURCE | AUTH | DESCRIPTION |
| GET | /{UID}/OAAccounting | TRUE | List all of the monetary transactions of the user; supports selectable sets by UID, SID, NID, date, amount, etc |
| POST | /{UID}/OAAccounting | TRUE | Create new transaction in the list |
| GET | /{UID}/OAAccounting/{AID} | TRUE | Get the particular transaction |
| PUT | /{UID}/OAAccounting/{AID} | TRUE | Update transaction |
| DELETE | /{UID}/OAAccounting/{AID} | TRUE | Delete a transaction from the list |

---------------------------------------------------------------

Question:

* What do you do when an OANode is reconfigured? How do you update the database? Give it another unique tag and mark the node as inactive?

R = required

NR – not required

PK – Primary Key

FK – Foreign Key

OANodeEvent (this is also a way to create automate events)

* event number (PK) (R, automatic)
* timetag database (R, automatic)
* node ID (FK) (R)
* event type (ENUM: add plant, add fish, triggers (water, temp, humidity), execution time overrun, ex?) (R) (FK)
* severity (R) – (info, warning, critical, failure, etc)
* send SMS (R)
* send Twitter (R)
* send email (R)
* description (NR)
* ??

Event Type

* Event number (PK) (R, automatic)
* Name (R)
* Description (NR)