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# Introduction

In this document you will find the schema definition for the Zeppelin Bend load database.

## CONVENTIONS

All of the table definitions use the following conventions.

### Key Fields

Key fields are highlighted using the following icons:

 Indicates this field is the primary key (or part of a composite key).

 Indicates this field is a foreign key into another table. Details of the relationship will be defined in the description of the field.

### Field Units

If a fields values should be entered using a defined unit, it will be specified in round brackets following the field definitions. All fields that define units do so because the software make assumptions about the values in these fields (e.g. to perform calculations).

# Tables

Below you will find the schema description of all tables that need to be populated to produce a useable server.

## Loads

The loads table stores information about the load aggregation points.

Table: **loads**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| load\_id | text | The identifier for the load aggregation point. |
| weather\_region | text | The weather region where this load aggregation point is located. Foreign key into the Weather table. |

## Loads In

The loads in table stores the power consumption readings for the loads.

Table: **loads\_in**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| load\_id | text | The identifier for the load point where these readings were taken. Foreign key into the Loads table. |
| date | date as text (YYYY-MM-DD) | The YYYY-MM-DD formatted date when these readings were taken. |
| kw\_0030 | float (kW) | The kw usage for the 00:00 to 00:30 time period. |
| kw\_0100 | float (kW) | The kw usage for the 00:30 to 01:00 time period. |
| kw\_0130 | float (kW) | The kw usage for the 01:00 to 01:30 time period. |
| kw\_0200 | float (kW) | The kw usage for the 01:30 to 02:00 time period. |
| kw\_0230 | float (kW) | The kw usage for the 02:00 to 02:30 time period. |
| kw\_0300 | float (kW) | The kw usage for the 02:30 to 03:00 time period. |
| kw\_0330 | float (kW) | The kw usage for the 03:00 to 03:30 time period. |
| kw\_0400 | float (kW) | The kw usage for the 03:30 to 04:00 time period. |
| kw\_0430 | float (kW) | The kw usage for the 04:00 to 04:30 time period. |
| kw\_0500 | float (kW) | The kw usage for the 04:30 to 05:00 time period. |
| kw\_0530 | float (kW) | The kw usage for the 05:00 to 05:30 time period. |
| kw\_0600 | float (kW) | The kw usage for the 05:30 to 06:00 time period. |
| kw\_0630 | float (kW) | The kw usage for the 06:00 to 06:30 time period. |
| kw\_0700 | float (kW) | The kw usage for the 06:30 to 07:00 time period. |
| kw\_0730 | float (kW) | The kw usage for the 07:00 to 07:30 time period. |
| kw\_0800 | float (kW) | The kw usage for the 07:30 to 08:00 time period. |
| kw\_0830 | float (kW) | The kw usage for the 08:00 to 08:30 time period. |
| kw\_0900 | float (kW) | The kw usage for the 08:30 to 09:00 time period. |
| kw\_0930 | float (kW) | The kw usage for the 09:00 to 09:30 time period. |
| kw\_1000 | float (kW) | The kw usage for the 09:30 to 10:00 time period. |
| kw\_1030 | float (kW) | The kw usage for the 10:00 to 10:30 time period. |
| kw\_1100 | float (kW) | The kw usage for the 10:30 to 11:00 time period. |
| kw\_1130 | float (kW) | The kw usage for the 11:00 to 11:30 time period. |
| kw\_1200 | float (kW) | The kw usage for the 11:30 to 12:00 time period. |
| kw\_1230 | float (kW) | The kw usage for the 12:00 to 12:30 time period. |
| kw\_1300 | float (kW) | The kw usage for the 12:30 to 13:00 time period. |
| kw\_1330 | float (kW) | The kw usage for the 13:00 to 13:30 time period. |
| kw\_1400 | float (kW) | The kw usage for the 13:30 to 14:00 time period. |
| kw\_1430 | float (kW) | The kw usage for the 14:00 to 14:30 time period. |
| kw\_1500 | float (kW) | The kw usage for the 14:30 to 15:00 time period. |
| kw\_1530 | float (kW) | The kw usage for the 15:00 to 15:30 time period. |
| kw\_1600 | float (kW) | The kw usage for the 15:30 to 16:00 time period. |
| kw\_1630 | float (kW) | The kw usage for the 16:00 to 16:30 time period. |
| kw\_1700 | float (kW) | The kw usage for the 16:30 to 17:00 time period. |
| kw\_1730 | float (kW) | The kw usage for the 17:00 to 17:30 time period. |
| kw\_1800 | float (kW) | The kw usage for the 17:30 to 18:00 time period. |
| kw\_1830 | float (kW) | The kw usage for the 18:00 to 18:30 time period. |
| kw\_1900 | float (kW) | The kw usage for the 18:30 to 19:00 time period. |
| kw\_1930 | float (kW) | The kw usage for the 19:00 to 19:30 time period. |
| kw\_2000 | float (kW) | The kw usage for the 19:30 to 20:00 time period. |
| kw\_2030 | float (kW) | The kw usage for the 20:00 to 20:30 time period. |
| kw\_2100 | float (kW) | The kw usage for the 20:30 to 21:00 time period. |
| kw\_2130 | float (kW) | The kw usage for the 21:00 to 21:30 time period. |
| kw\_2200 | float (kW) | The kw usage for the 21:30 to 22:00 time period. |
| kw\_2230 | float (kW) | The kw usage for the 22:00 to 22:30 time period. |
| kw\_2300 | float (kW) | The kw usage for the 22:30 to 23:00 time period. |
| kw\_2330 | float (kW) | The kw usage for the 23:00 to 23:30 time period. |
| kw\_2400 | float (kW) | The kw usage for the 23:30 to 24:00 time period. |

## Loads Out

The loads out table stores the power production readings for the loads.

Table: **loads\_out**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| load\_id | text | The identifier for the load point where these readings were taken. Foreign key into the Loads table. |
| date | date as text (YYYY-MM-DD) | The YYYY-MM-DD formatted date when these readings were taken. |
| kw\_0030 | float (kW) | The kw production for the 00:00 to 00:30 time period. |
| kw\_0100 | float (kW) | The kw production for the 00:30 to 01:00 time period. |
| kw\_0130 | float (kW) | The kw production for the 01:00 to 01:30 time period. |
| kw\_0200 | float (kW) | The kw production for the 01:30 to 02:00 time period. |
| kw\_0230 | float (kW) | The kw production for the 02:00 to 02:30 time period. |
| kw\_0300 | float (kW) | The kw production for the 02:30 to 03:00 time period. |
| kw\_0330 | float (kW) | The kw production for the 03:00 to 03:30 time period. |
| kw\_0400 | float (kW) | The kw production for the 03:30 to 04:00 time period. |
| kw\_0430 | float (kW) | The kw production for the 04:00 to 04:30 time period. |
| kw\_0500 | float (kW) | The kw production for the 04:30 to 05:00 time period. |
| kw\_0530 | float (kW) | The kw production for the 05:00 to 05:30 time period. |
| kw\_0600 | float (kW) | The kw production for the 05:30 to 06:00 time period. |
| kw\_0630 | float (kW) | The kw production for the 06:00 to 06:30 time period. |
| kw\_0700 | float (kW) | The kw production for the 06:30 to 07:00 time period. |
| kw\_0730 | float (kW) | The kw production for the 07:00 to 07:30 time period. |
| kw\_0800 | float (kW) | The kw production for the 07:30 to 08:00 time period. |
| kw\_0830 | float (kW) | The kw production for the 08:00 to 08:30 time period. |
| kw\_0900 | float (kW) | The kw production for the 08:30 to 09:00 time period. |
| kw\_0930 | float (kW) | The kw production for the 09:00 to 09:30 time period. |
| kw\_1000 | float (kW) | The kw production for the 09:30 to 10:00 time period. |
| kw\_1030 | float (kW) | The kw production for the 10:00 to 10:30 time period. |
| kw\_1100 | float (kW) | The kw production for the 10:30 to 11:00 time period. |
| kw\_1130 | float (kW) | The kw production for the 11:00 to 11:30 time period. |
| kw\_1200 | float (kW) | The kw production for the 11:30 to 12:00 time period. |
| kw\_1230 | float (kW) | The kw production for the 12:00 to 12:30 time period. |
| kw\_1300 | float (kW) | The kw production for the 12:30 to 13:00 time period. |
| kw\_1330 | float (kW) | The kw production for the 13:00 to 13:30 time period. |
| kw\_1400 | float (kW) | The kw production for the 13:30 to 14:00 time period. |
| kw\_1430 | float (kW) | The kw production for the 14:00 to 14:30 time period. |
| kw\_1500 | float (kW) | The kw production for the 14:30 to 15:00 time period. |
| kw\_1530 | float (kW) | The kw production for the 15:00 to 15:30 time period. |
| kw\_1600 | float (kW) | The kw production for the 15:30 to 16:00 time period. |
| kw\_1630 | float (kW) | The kw production for the 16:00 to 16:30 time period. |
| kw\_1700 | float (kW) | The kw production for the 16:30 to 17:00 time period. |
| kw\_1730 | float (kW) | The kw production for the 17:00 to 17:30 time period. |
| kw\_1800 | float (kW) | The kw production for the 17:30 to 18:00 time period. |
| kw\_1830 | float (kW) | The kw production for the 18:00 to 18:30 time period. |
| kw\_1900 | float (kW) | The kw production for the 18:30 to 19:00 time period. |
| kw\_1930 | float (kW) | The kw production for the 19:00 to 19:30 time period. |
| kw\_2000 | float (kW) | The kw production for the 19:30 to 20:00 time period. |
| kw\_2030 | float (kW) | The kw production for the 20:00 to 20:30 time period. |
| kw\_2100 | float (kW) | The kw production for the 20:30 to 21:00 time period. |
| kw\_2130 | float (kW) | The kw production for the 21:00 to 21:30 time period. |
| kw\_2200 | float (kW) | The kw production for the 21:30 to 22:00 time period. |
| kw\_2230 | float (kW) | The kw production for the 22:00 to 22:30 time period. |
| kw\_2300 | float (kW) | The kw production for the 22:30 to 23:00 time period. |
| kw\_2330 | float (kW) | The kw production for the 23:00 to 23:30 time period. |
| kw\_2400 | float (kW) | The kw production for the 23:30 to 24:00 time period. |

## Weather

The weather table contains the weather observations. At present there are no defined units for the observations in this table.

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| region | text | The name of the region where these weather observations were taken. |
| timestamp\_utc | text ([ISO 8601](https://en.wikipedia.org/wiki/ISO_8601)) | An [ISO 8601](https://en.wikipedia.org/wiki/ISO_8601) encoded UTC timestamp when the observations were taken.  e.g. 2010-05-23T00:25:03Z |
| temperature\_dry\_buld | float | The dry bulb temperature in degrees Celsius. |
| temperature\_dew\_point | float | The dew point temperature in degrees Celsius. |
| temperature\_feels\_like | float | The “feels like” temperature in degrees Celsius. |
| relative\_humidity | float | The relative humidity. Range 0 to 100. |
| wind\_direction | float | The direction of the wind. |
| wind\_speed\_mean | float | The mean speed of the wind. |
| wind\_speed\_gust | float | The gust speed of the wind. |
| pressure | float | The atmospheric pressure. |
| rainfall\_last\_10min | float | The amount of rainfall over the last 10 minutes |
| rainfall\_since\_9am | float | The amount of rainfall since 9am. |

# Internal Use Tables

The following tables are reserved for internal use and are subject to change without notice. Any data stored in these tables is not guaranteed to be retained as part of an upgrade to the database schema.

## meters

This meters table stores a list of meters that have been aggregated to a load point.

Table: **meters**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| meter\_id | text | The unique identifier for the meter. |
| load\_id | text | The identifier for the load aggregation point for this meter. Foreign key into the Loads table. |

## Processed Files

This processed files table is used to track files that have been processed by various parts of the system in order to avoid duplicate processing.

Table: **processed\_files**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| filename | text | The name of the file that has been processed. |

## Version

The version table is used to track the database schema. Any changes made to this table will potentially interfere with the correct running of the system.

Table: **version**

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| version | integer | The version number of the database schema. |