PWS Upload Protocol

Personal Weather Station Upload Protocol

Here is how to create a Personal Weather Station update to wunderground.com:

Background
To upload a weather condition, you make a standard HTTP GET request with the ID, PASSWORD and weather conditions as GET parameters

URL

Here is the URL used in the uploading:

```
https://rtupdate.wunderground.com/weatherstation/updateweathersta
```

[edit (http://wiki.wunderground.com/index.php?title=PWS_-_Upload_Protocol&action=edit&section=5)]

GET parameters

- NOT all fields need to be set, the _required_ elements are:
    - action
    - ID
    - PASSWORD
    - dateutc
- IMPORTANT all fields must be url escaped
    - reference http://www.w3schools.com/tags/ref_urlencode.asp (http://www.w3schools.com/tags/ref_urlencode.asp)
- example

```
2001-01-01 10:32:35
 becomes
2000-01-01+10%3A32%3A35
```

- if the weather station is not capable of producing a timestamp, our system will accept "now". Example:

```
dateutc=now
```

- list of fields:

```
action [action=updateraw] -- always supply this parameter to indi
ID [ID as registered by wunderground.com]
PASSWORD [Station Key registered with this PWS ID, case sensitive
dateutc - [YYYY-MM-DD HH:MM:SS (mysql format)] In Universal Coord
winddir - [0-360 instantaneous wind direction]
windspeedmph - [mph instantaneous wind speed]
windgustmph - [mph current wind gust, using software specific tim
windgustdir - [0-360 using software specific time period]
windspdmph_avg2m  - [mph 2 minute average wind speed mph]
winddir_avg2m - [0-360 2 minute average wind direction]
windgustmph_10m - [mph past 10 minutes wind gust mph ]
windgustdir_10m - [0-360 past 10 minutes wind gust direction]
```

```
humidity - [% outdoor humidity 0-100%]
dewptf- [F outdoor dewpoint F]
```

```
tempf - [F outdoor temperature]
 * for extra outdoor sensors use temp2f, temp3f, and so on
```

```
rainin - [rain inches over the past hour)] -- the accumulated rai
dailyrainin - [rain inches so far today in local time]
```

```
baromin - [barometric pressure inches]
```

```
weather - [text] -- metar style (+RA)
clouds - [text] -- SKC, FEW, SCT, BKN, OVC
```

```
soiltempf - [F soil temperature]
 * for sensors 2,3,4 use soiltemp2f, soiltemp3f, and soiltemp4f
soilmoisture - [%]
* for sensors 2,3,4 use soilmoisture2, soilmoisture3, and soilmoi
```

```
leafwetness  - [%]
+ for sensor 2 use leafwetness2
```

```
solarradiation - [W/m^2]
UV - [index]
```

```
visibility - [nm visibility]
```

```
indoortempf - [F indoor temperature F]
indoorhumidity - [% indoor humidity 0-100]
```

- Pollution Fields:

```
AqNO - [ NO (nitric oxide) ppb ]
AqNO2T - (nitrogen dioxide), true measure ppb
AqNO2 - NO2 computed, NOx-NO ppb
AqNO2Y - NO2 computed, NOy-NO ppb
AqNOX - NOx (nitrogen oxides) - ppb
AqNOY - NOy (total reactive nitrogen) - ppb
AqNO3 -NO3 ion (nitrate, not adjusted for ammonium ion) UG/M3
AqSO4 -SO4 ion (sulfate, not adjusted for ammonium ion) UG/M3
AqSO2 -(sulfur dioxide), conventional ppb
AqSO2T -trace levels ppb
AqCO -CO (carbon monoxide), conventional ppm
AqCOT -CO trace levels ppb
AqEC -EC (elemental carbon) - PM2.5 UG/M3
AqOC -OC (organic carbon, not adjusted for oxygen and hydrogen) -
AqBC -BC (black carbon at 880 nm) UG/M3
AqUV-AETH  -UV-AETH (second channel of Aethalometer at 370 nm) UG
AqPM2.5 - PM2.5 mass - UG/M3
AqPM10 - PM10 mass - PM10 mass
AqOZONE - Ozone - ppb
```

```
softwaretype – [text] ie: WeatherLink, VWS, WeatherDisplay
```

Example URL

Here is an example of a full URL:

```
https://weatherstation.wunderground.com/weatherstation/updateweat
```

- NOTE: not all fields need to be set

Response Text

The response from an HTTP GET request contains some debugging data.

RESPONSES and MEANINGS:

response

```
Status code: 200
```

- the observation was ingested successfully

response

```
Status code: 401
```

- invalid user data entered in the ID and PASSWORD GET parameters

response

```
Status code: 400
```

- the minimum GET parameters ID, PASSWORD (Station Key registered with this PWS ID, case sensitive), action, and dateutc were not set

RapidFire Updates

RapidFire Updates allow you to update weather station conditions at a frequency up to one observation every 2.5 seconds. Web site visitors will see these observations change in real-time on the wunderground.com site.

- A real-time update should look almost like the standard update.
- And, please add to the query string:
    - &realtime=1&rtfreq=2.5
- where rtrfreq is the frequency of updates in seconds.
- here is an example:

```
https://rtupdate.wunderground.com/weatherstation/updateweathersta
```

Need more help?

Email Us (/customer/portal/emails/new?b_id=17298)

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