APRS Weather Station with Dire Wolf

WB2OSZ

First very rough draft - January 2022

Many hams have home weather stations and would like to transmit weather data over APRS.

Many home weather stations produce a standardized file in the WXNOW.TXT format. This is composed of two lines:

- Date & time
- Encoded weather data

We only care about the second line which might look something like this:

```
220/004g005t077r000p000P000h50b09900
```

An APRS Weather Report with position (APRS Protocol Reference, page 65) conveniently uses the same format so that can be inserted directly into the packet without reformatting. Example:

```
!4903.50N/07201.75W_220/004g005t077r000p000P000h50b09900
```

What does this mean? We can add fake addresses and feed it into decode_aprs to find out:

```
$ echo 'A>B:!4903.50N/07201.75W_220/004g005t077r000p000P000h50b09900' |
decode_aprs

Weather Report, WEATHER Station (blue)

N 49 03.5000, W 072 01.7500

wind 4.6 mph, direction 220, gust 5, temperature 77, rain 0.00 in last
hour, rain 0.00 in last 24 hours, rain 0.00 since midnight, humidity
50, barometer 29.24, ""
```

How can we generate our own?

Dire Wolf has an option to run a command to supply the comment part of a packet.

Linux

For Linux, it is very simple.   Below is a complete working configuration file you can use for experimentation.   Don't do this with a transmitter connected. People will hate you because it sends 3 times a minute.   This is just as a demonstration to illustrate how it works.

1. Put a wxnow.txt file in the current working directory.
2. Create a configuration file, called weather.conf, as shown below.

```
MYCALL HAM1

# The following is a single line in the configuration file.

PBEACON delay=0:10 every=0:20 lat=12.34 long=56.78
symbol="weather station" commentcmd="tail -1 wxnow.txt"
```

3. Run "direwolf -c weather.conf"

The result should look like this:

```
[0L] HAM1>APDW17:!1220.40N/05646.80E_220/004g005t077r000p000P000h50b09900
```

Just for fun, use decode_aprs:

```
$ echo
'HAM1>APDW17:!1220.40N/05646.80E_220/004g005t077r000p000P000h50b09900'
| decode_aprs


Weather Report, WEATHER Station (blue), DireWolf, WB2OSZ

N 12 20.4000, E 056 46.8000

wind 4.6 mph, direction 220, gust 5, temperature 77, rain 0.00 in last
hour, rain 0.00 in last 24 hours, rain 0.00 since midnight, humidity
50, barometer 29.24, ""
```

Windows

Windows does not have the "tail" command so it becomes more complicated. Some have suggested installing some package of Linux utilities. Here is my solution for using only standard Windows capabilities. Let me know if you can come up with a better way.

We will need a wxnow.txt file somewhere. In this example it will be assumed to be in the current working directory.

We will also need a Dire Wolf configuration file. For this example, call it weather.conf.

```
MYCALL HAM1

# The following is a single line in the configuration file.

pbeacon delay=0:10 every=0:30 lat=12.34 long=56.78 symbol="weather
station" commentcmd="powershell -command get-content wxnow.txt -tail 1"
```

Notice how "powershell -command" needs to precede the actual command that we want.