weeWX and Weather34 Web Template Setup Guide

This is a **general** guide on integrating weeWX weather software with the weather34 web template adapted for weeWX by Ian Steeple. In this example, the weeWX server and the web server are on separate systems (Ubuntu 18.04 virtual machines on VMware ESXi 6.5) The web server runs Apache 2.4 and PHP 7.2. The weather station is a Davis Vantage Pro2 Model 6153 with 24hr Fan Aspirated Radiation Shield and uses the WeatherlinkIP data logger.

Step 1:

Install, configure and test weeWX on first server (weeWX server).

a) The assumption is that Ubuntu 18.04 has already been installed.
b) The guide here describes how to install weeWX as a DEB package
c) Customize the weewx.conf file in /etc/weewx based on your location, station hardware and uploads to WU, PWS, archive interval etc.
d) Restart weeWX.
e) At this point weeWX should be getting your weather station into the database and creating new web pages and chart images in /var/www/html/weewx/ at every archive interval as well as uploading the data to WU, PWS etc.
f) Your weewx log should show messages like this:

```
weewx[1375]: manager: Daily summary version is 2.0
weewx[1375]: restx: Wunderground-PWS: Published record 2018-10-15 18:10:00 CDT (1539645000)
weewx[1375]: restx: PWSWeather: Published record 2018-10-15 18:10:00 CDT (1539645000)
weewx[1375]: vantage: Gentle wake up of console successful
weewx[1375]: cheetahgenerator: Generated 18 files for report StandardReport in 0.89 seconds
weewx[1375]: manager: Daily summary version is 2.0
weewx[1375]: imagegenerator: Generated 12 images for StandardReport in 0.12 seconds
```

g) Your /var/www/html/weewx directory should look something like this containing the updated web pages, chart images etc. generated at every archive interval.

```
/var/www/html/weewx$ ls -la
ot root   4096 Oct 15 18:15 .
ot root   4096 Oct 15 18:15 ..
ot root   4096 Sep 21 19:00 backgrounds
ot root   3117 Oct 15 18:15 daybarometer.png
ot root   3133 Oct 15 18:15 dayhumidity.png
ot root   2817 Oct 15 18:15 dayinside.png
ot root   1731 Oct 15 18:15 dayradiation.png
ot root   2012 Oct 15 18:15 dayrain.png
ot root   3383 Oct 15 18:15 dayrx.png
ot root   2863 Oct 15 18:15 daytempchill.png
ot root   3969 Oct 15 18:15 daytempdew.png
ot root   1634 Oct 15 18:15 dayuv.png
ot root   2974 Oct 15 18:15 daywinddir.png
ot root   4015 Oct 15 18:15 daywind.png
ot root   4471 Oct 15 18:15 daywindvec.png
ot root   1150 Oct 10 00:05 favicon.ico
ot root  16573 Oct 15 18:15 index.html
ot root    564 Oct 10 00:05 mobile.css
ot root   2070 Oct 15 18:15 mobile.html
ot root   2950 Oct 15 18:00 monthbarometer.png
ot root  10058 Oct 15 18:15 month.html
```

Step 2:

Install Ubuntu 18.04, Apache 2.x and PHP 7.x on second server (web server).

a) Here's a good guide. Make sure the php-curl and php-mbstring modules are installed for PHP. Here's a solution if you are not able to install php-mbstring.

Step 3:

Configure RSYNC in weeWX and verify that your default weeWX web page/skin works .

a) The RSYNC feature of weeWX requires "passwordless ssh" configured for the user that runs weeWX so that weeWX can copy the files to the web server. Here's a guide on configuring "passwordless ssh".

b) Change the RSYNC section of the weewx.conf file with your details. Here's an example. This section is explained in the weeWX user guide. **Note** that here we are copying not just the "weewx" directory within the html folder but the whole "html" folder – to the web server. This is important when we get to the end of Step 4.

```
[[RSYNC]]
    #Copying local /var/www/html folder to web server
    skin = Rsync
    HTML_ROOT = /var/www/html
    server = 10.10.10.25
    user = root
    path = /var/www/html
    delete = 0
```

c) Verify that the default weeWX web page works by browsing to http://webserver_IP_address/weewx Here's an example of the default weeWX skin:

Step 4:

      Configure weather34 template.

a) Use this Quick Start Guide to set up the weather34 template on the web server. The template on the web server has yet to have access to the "realtime.txt" file generated by the "CRT" extension to get it's weather data.

b) Install and configure NFS server on the weeWX system to mount the /var/tmp directory (which is the location of the "realtime.txt" file) on the web server. NFS client should be installed and configured on the web server. Here is a good general guide on installing NFS server and client.

      Here is the NFS snippet from the /etc/exports file on the weeWX server (NFS Server):

```
/var/tmp        10.10.0.0/16(ro,sync)
```

      Here is the NFS mount line on the /etc/fstab file on the web server (NFS Client).

```
10.10.10.20:/var/tmp    /nfs/weather   nfs auto,nofail,noatime,nolock,intr,tcp,actimeo=1800 0 0
```

      After the NFS configuration above, the "realtime.txt" file will be available to the weather34 template in the /nfs/weather directory of the web server.

c) Browse to http://webserver_IP_address/easyweathersetup.php ,configure your template, save configuration and browse to http://webserver_IP_address . Your weather34 template should look something like this:

d) Use Method 2 in the Archive Charts Setup Guide with this change:

- Instead of pasting the contents of the "skinconf-snippets.txt" file into the end of the [CheetahGenerator] section of the /etc/weewx/skins/Standard/skin.conf file – you will have to merge the items from the file into the [CheetahGenerator] section – else you will get errors when weeWX starts. The resulting skin.conf [CheetahGenerator] section looks like this with the merged items highlighted:

```
[CheetahGenerator]
    # This section is used by the generator CheetahGenerator, and specifies
    # which files are to be generated from which template.

    # Possible encodings are 'html_entities', 'utf8', or 'strict_ascii'
    encoding = html_entities

    [[SummaryByMonth]]
        # Reports that summarize "by month"
        [[[NOAA_month]]]
            encoding = strict_ascii
            template = NOAA/NOAA-YYYY-MM.txt.tmpl
        [[[WU_month]]]
            encoding = strict_ascii
            template = chartsweewxdata/MMYYYY.txt.tmpl
            HTML_ROOT = /var/www/html/chartsweewx

    [[SummaryByYear]]
        # Reports that summarize "by year"
        [[[NOAA_year]]]
            encoding = strict_ascii
            template = NOAA/NOAA-YYYY.txt.tmpl
        [[[WU_year]]]
            encoding = strict_ascii
            template = chartsweewxdata/YYYY.txt.tmpl
            HTML_ROOT = /var/www/html/chartsweewx

    [[ToDate]]
        # Reports that show statistics "to date", such as day-to-date,
        # week-to-date, month-to-date, etc.
        [[[day]]]
            template = index.html.tmpl

        [[[week]]]
            template = week.html.tmpl

        [[[month]]]
            template = month.html.tmpl

        [[[year]]]
            template = year.html.tmpl

        [[[RSS]]]
            template = RSS/weewx_rss.xml.tmpl

        [[[Mobile]]]
            template = mobile.html.tmpl

        [[[MobileSmartphone]]]
            template = smartphone/index.html.tmpl

        [[[MobileTempOutside]]]
            template = smartphone/temp_outside.html.tmpl

        [[[MobileRain]]]
            template = smartphone/rain.html.tmpl

        [[[MobileBarometer]]]
            template = smartphone/barometer.html.tmpl

        [[[MobileWind]]]
            template = smartphone/wind.html.tmpl

        [[[MobileRadar]]]
            template = smartphone/radar.html.tmpl

        [[[WUDAILY]]]
            encoding = strict_ascii
            template = chartsweewxdata/DDMMYYYY.txt.tmpl
            HTML_ROOT = /var/www/html/chartsweewx

        [[[VERSION]]]
            template = version.php.tmpl
            HTML_ROOT = /var/www/html
```
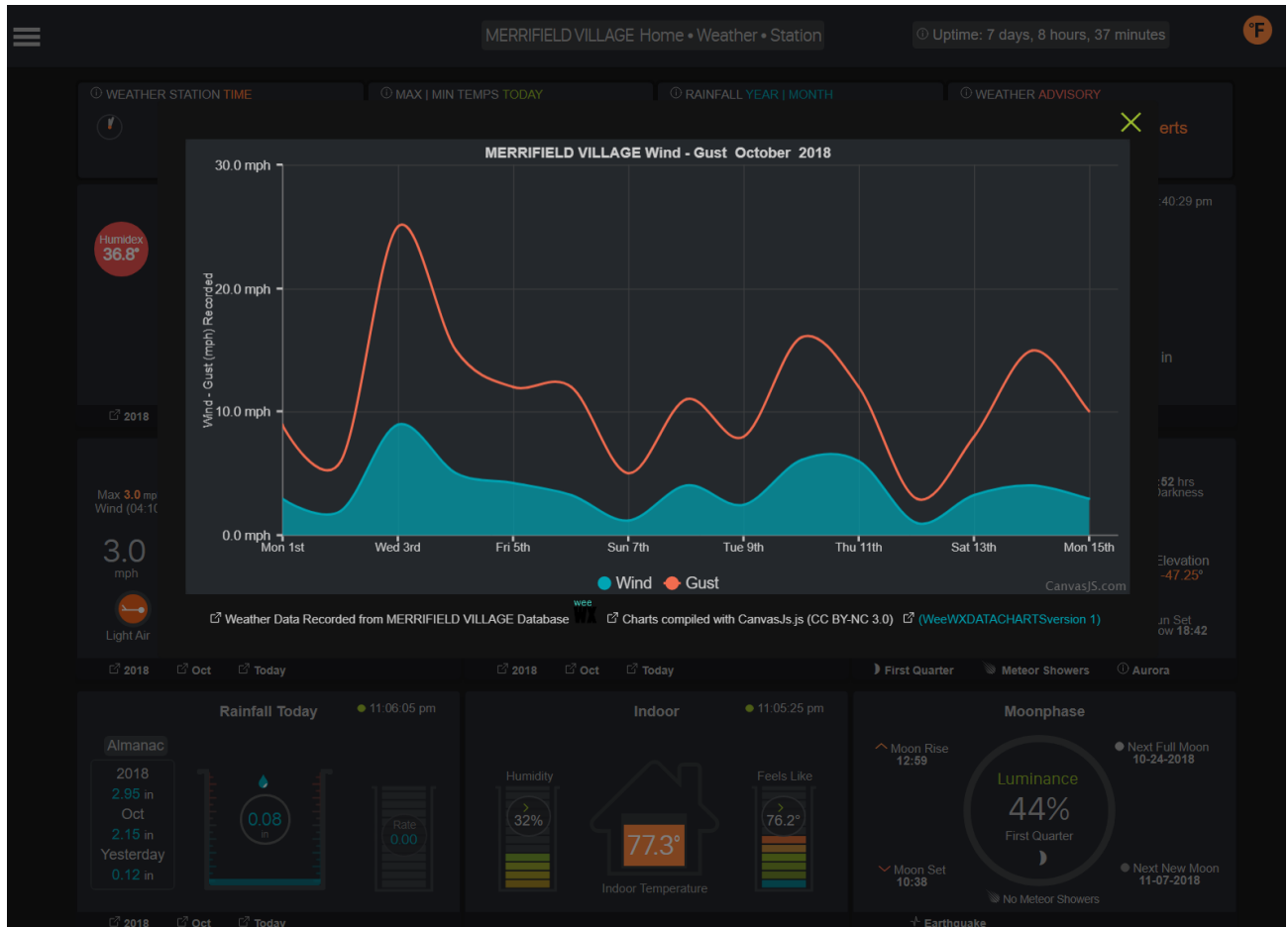
- Restart weeWX

- The RSYNC configuration in the weewx.conf file performed in Step 3b allows the complete /var/www/html directory on the weeWX server to be copied to the web server and therefore at every archive interval the following should be taking place.
  - the *default weewx web pages and charts* are generated in the weeWX server's "/var/www/html/weewx" directory and copied to the same location on the web server by the RSYNC process.
  - the *chartsweewx data* is generated in the weeWX server's "/var/www/html/chartsweewx/chartsweewxdata" folder and the "/var/www/html/chartsweewx/" folder and contents are copied to the same location on the web server by the RSYNC process
  - the *"version.php"* file is generated in the "/var/www/html/" directory of the weeWX server and copied to the same location on the web server via the RSYNC process.
- The weewx log looks like this at archive interval:

```
Oct 15 23:55:16 weather weewx[1375]: vantage: Getting archive packets since 2018-10-15 23:50:00 CDT (1539665400)
Oct 15 23:55:16 weather weewx[1375]: vantage: Gentle wake up of console successful
Oct 15 23:55:18 weather weewx[1375]: vantage: Retrieving 1 page(s); starting index= 1
Oct 15 23:55:18 weather weewx[1375]: manager: Added record 2018-10-15 23:55:00 CDT (1539665700) to database 'weewx.sdb'
Oct 15 23:55:18 weather weewx[1375]: manager: Added record 2018-10-15 23:55:00 CDT (1539665700) to daily summary in 'weewx.sdb'
Oct 15 23:55:19 weather weewx[1375]: vantage: DMPAFT complete: page timestamp 2018-10-07 02:40:00 CDT (1538898000) less than final timestamp 2
018-10-15 23:55:00 CDT (1539665700)
Oct 15 23:55:19 weather weewx[1375]: vantage: Catch up complete.
Oct 15 23:55:19 weather weewx[1375]: reportengine: Running reports for latest time in the database.
Oct 15 23:55:19 weather weewx[1375]: reportengine: Running report StandardReport
Oct 15 23:55:19 weather weewx[1375]: vantage: Requesting 200 LOOP packets.
Oct 15 23:55:19 weather weewx[1375]: reportengine: Found configuration file /etc/weewx/skins/Standard/skin.conf for report StandardReport
Oct 15 23:55:19 weather weewx[1375]: cheetahgenerator: using search list ['weewx.cheetahgenerator.Almanac', 'weewx.cheetahgenerator.Station',
'weewx.cheetahgenerator.Current', 'weewx.cheetahgenerator.Stats', 'weewx.cheetahgenerator.UnitInfo', 'weewx.cheetahgenerator.Extras']
Oct 15 23:55:19 weather weewx[1375]: manager: Daily summary version is 2.0
Oct 15 23:55:19 weather weewx[1375]: restx: PWSWeather: Published record 2018-10-15 23:55:00 CDT (1539665700)
Oct 15 23:55:19 weather weewx[1375]: restx: Wunderground-PWS: Published record 2018-10-15 23:55:00 CDT (1539665700)
Oct 15 23:55:19 weather weewx[1375]: vantage: Gentle wake up of console successful
Oct 15 23:55:20 weather weewx[1375]: cheetahgenerator: Generated 18 files for report StandardReport in 0.99 seconds
Oct 15 23:55:20 weather weewx[1375]: manager: Daily summary version is 2.0
Oct 15 23:55:20 weather weewx[1375]: imagegenerator: Generated 12 images for StandardReport in 0.13 seconds
Oct 15 23:55:20 weather weewx[1375]: copygenerator: copied 0 files to /var/www/html/weewx
Oct 15 23:55:20 weather weewx[1375]: reportengine: Running report FTP
Oct 15 23:55:20 weather weewx[1375]: reportengine: Found configuration file /etc/weewx/skins/Ftp/skin.conf for report FTP
Oct 15 23:55:20 weather weewx[1375]: ftpgenerator: FTP upload not requested. Skipped.
Oct 15 23:55:20 weather weewx[1375]: reportengine: Running report RSYNC
Oct 15 23:55:20 weather weewx[1375]: reportengine: Found configuration file /etc/weewx/skins/Rsync/skin.conf for report RSYNC
Oct 15 23:55:20 weather weewx[1375]: rsyncupload: rsync'd 30 files (133,949 bytes) in 0.80 seconds
```

- The weeWX data is now directly available to the weather34 template to generate the CanvasJS charts from the weather station data and history rather than from a Weather Underground API feed. The charts should now look like this:

- Enjoy!

--taylormia