

sdbCheck.py

DESCRIPTION:

The primary purpose of this script is to create and maintain a “last known good” copy of the weewx.sdb database to make recovery from database corruption a bit easier. The script is intended to run without supervision and, as such, one of the main design goals has been to make the script as robust as possible. If an exception condition occurs, the script makes every attempt to notify the user (via email) rather than simply “failing silently”. Consequently, only the last 15% of the script actually performs the intended operation – the remainder is for error checking and user configuration support.

NOTE: While weeWX is written for Python 2, this script requires an installation of Python 3 as it uses features unavailable in Python 2. Many systems already have Python 3 installed. If not, it can be loaded through Software Managers on Linux systems or downloaded from ActiveState.com for Windows and Mac systems. The script also requires an installation of sqlite3 to perform the database integrity check. This is also available for all major platforms.

INSTALLATION:

Installation simply consists of copying the sdbCheck.py file into any directory the user has write permissions for on the system where weeWX is running. The first thing that must be done is to configure the script by editing the configuration options towards the front of the script. These allow the user to edit things such as how often weeWX updates the weewx.sdb database, the email address to use when sending a notification, etc. The script can also assist in verifying that the entered options are valid. To do this, run the script from a terminal window in the directory where it is installed and add anything as a command line option, for example “sdbCheck.py x”. If anything at all is found on the command line other than the script name itself, it will enter a configuration check mode. Here, it will verify that every parameter has been updated and, where possible, that the entered values are correct. The very last step is to send the user a test email. If this is received, then the script should be good to go.

It is probably a good idea to run the script manually at least once. The first time through it will create a “./Backup” directory off the installation directory if it does not already exist. Then, based on the values entered for the UPDATE times, it will eventually run, waiting for a “safe” time to copy the database to the installation directory. The copy is then checked using the ‘pragma integrity_check’ feature of sqlite3. Assuming the check passes, the copy is moved to the “./Backup” directory, replacing any previous backup. Anything less than a successful completion should result in notification via email with a description of what went wrong.

Once the script is known to be working correctly, the next step will be to automate it using whatever support the Operating System provides. On Linux systems, this would consist of a cron entry running the script at whatever interval was specified with the SCRIPT_UPDATE option. With Windows systems use Task Scheduler and, on Mac OS X there is a scheduler called launchd (of which I know nothing about).

SUPPORT:

I will be happy to try and address any issues found by someone using this script. Please contact me at dave@dlharper.net, along with a description of your environment and the problem you encountered. My development environment is Linux Mint and my weeWX platform is Raspberry Pi. However, I have VirtualBox installed on my Mint system and can support other operating systems such as different Linux distributions and Windows (7, 8 & 10). This would have to be done through the weeWX simulator. Unfortunately, I currently have no ability to run on any version of Mac OS.

DISCLAIMER:

For nearly the last 30 years I've used Tcl/Tk for my scripting language, however, over the past year I've been making an effort to bring my scripting skills up to date with a more modern language. If you see something that looks really dumb in the script, it's probably because it is. I'm still learning. Also, (damn, I hate legal crap) it is my sincere hope that others may find the script useful. However, if it fails to operate as desired for you, you're not getting my house or car or anything but an apology and offer to try and fix what went wrong.