Node-RED: PAC twitter Alerts (digital)

The most basic condition for alerts is when some variable takes on a value outside of a predefined threshold—whether that value is too high, too low, or changing too quickly. These are easy conditions to test for in Node-RED, so it is fairly straight forward to set up an alert system based on analog or digital signals from a SNAP PAC system like the Learning Center used in this example (part number SNAP-PACLC).

In this post, I'll explain how to set up a digital input channel alert.

Before you begin:

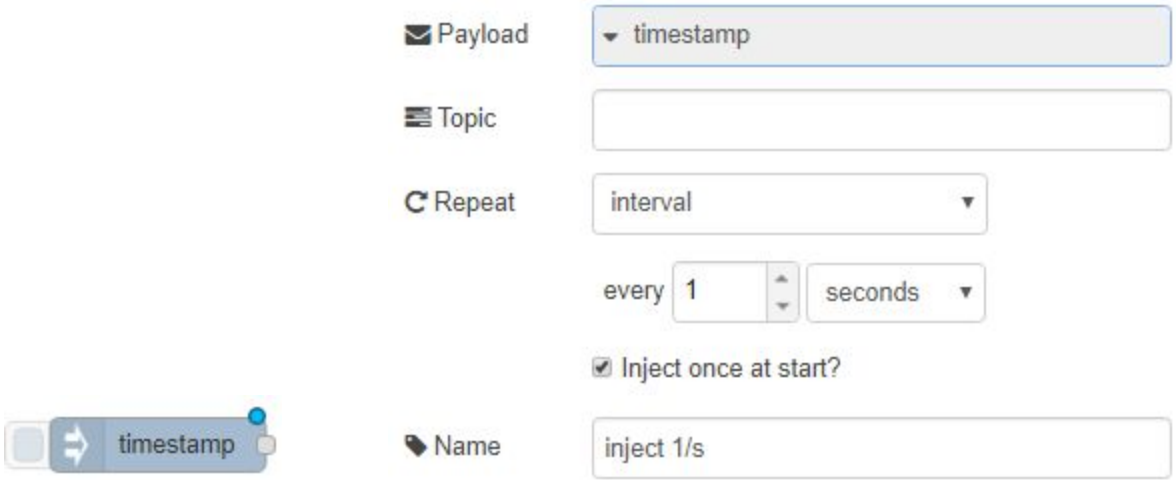
⚠ On your *groov* Box, upgrade Node-RED —ideally, to the latest version,v0.17.4+— to get node-red-node-twitter 1.11+.

You'll also need the SNAP PAC nodes.

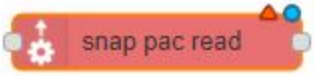
Digital input, binary alert

The most basic twitter alert can be sent when an alarm is switched on, based on the change of a digital value from a SNAP PAC I/O module on the Learning Center.

1. Start by regularly checking the state of the switch with a once-per-second **inject** node.

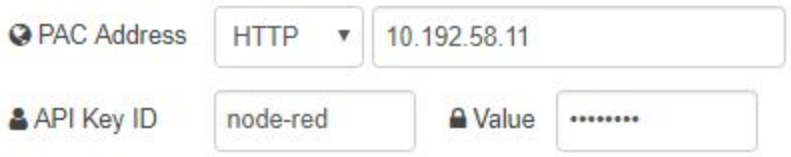


2. Next grab a **SNAP PAC Read** node, install the package if you don't see them.

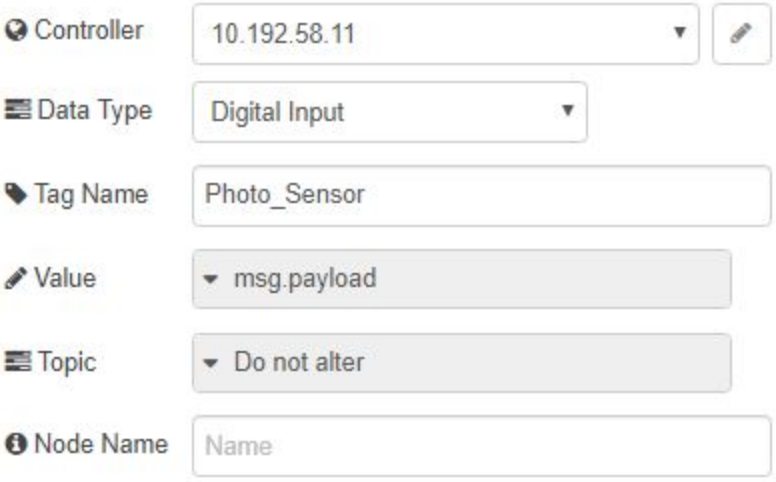


3. Double click the new node to edit it. Then select the pencil icon to add your PAC device:

4. Enter in the PAC address, and configure SSL certificates if using HTTPS, otherwise just enter an authentication key for the controller, and continue.

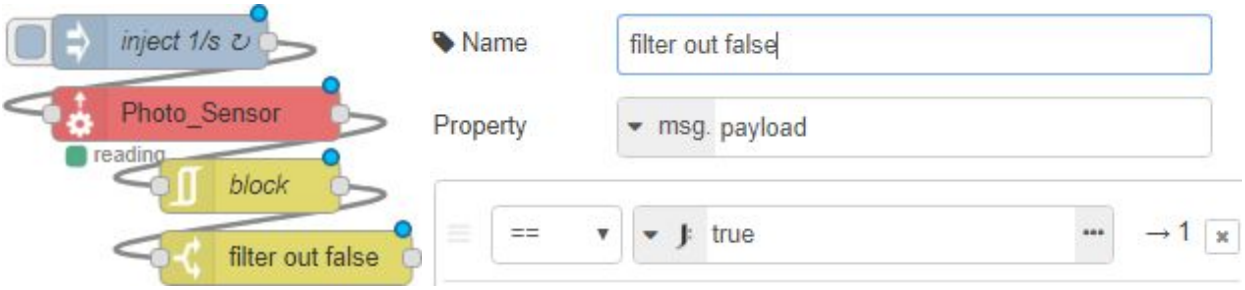


5. I am going to send a tweet when the photo sensor switch is activated, so I enter Photo_Sensor. (From the PAC Control Learning Center convenience store strategy.)



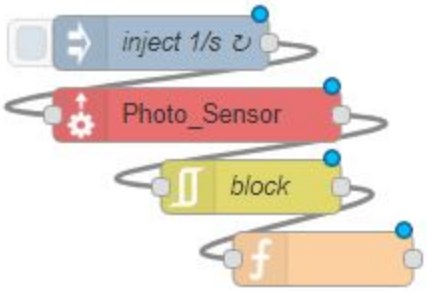
6. I do not, however, want to report every single second that I check the value—only if the value has changed (that is, when the input is toggled).
To do this, place an **rbe** "rate by exception" node that is set to "block unless value changes (ignore initial value)" so that it only gets through when toggled, and not when the flow is deployed.

a. As a small bonus I *could* add another node to filter out the light sensor off signal and only alert me when it is activated. For this I would use a switch node to check the digital state. After coming out of the **rbe** node, go straight into a switch:



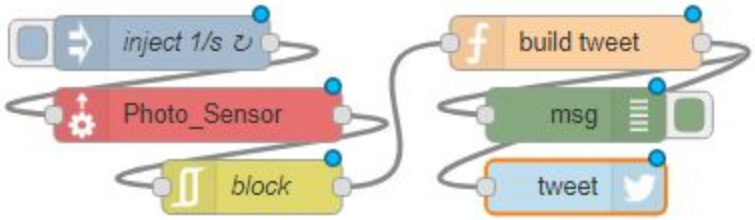
Here I show how to let the message through only when payload holds the expression value “true”. This is an example of simple binary digital filtering.
*NOTE: Instead I am letting both on **and** off signals through.*

7. Now I must build the actual tweet using a **function** node.



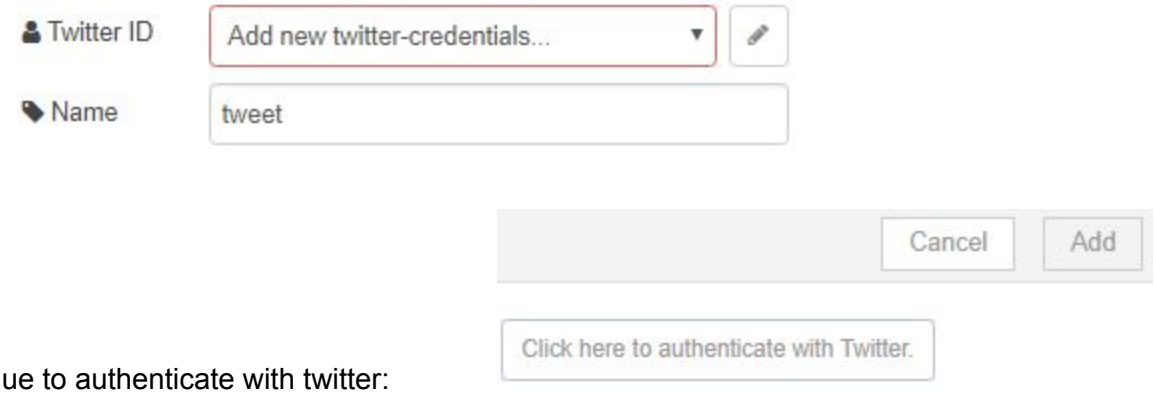
To build a tweet, return a message with the string of the desired information, including any tags and hashtags, all packed up in the payload.
This payload alerts the account @NR_Alerts when it is light or dark outside, depending on the state of the switch. This information could be written in any of a number of ways depending on your specific application.

8. Finally add a twitter output node, and optionally a debug node to double check the msg object was created correctly.



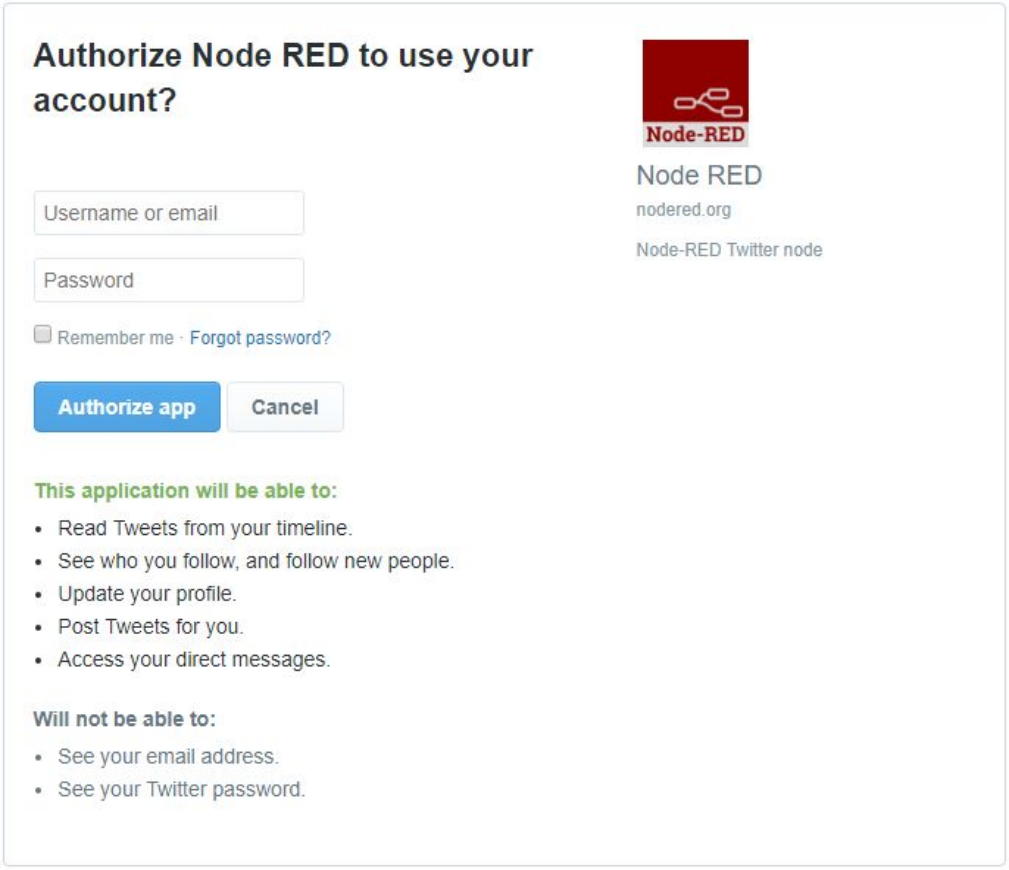
9. **You may want to have a separate twitter account for Node-RED** for your own privacy and the alert messages can add a lot of noise to your personal account. If you wish to get notifications on your personal account just tag @yourusername in the tweet string.

    To connect whichever account you choose to this flow, double click the twitter node and click the pencil icon to add new twitter credentials.

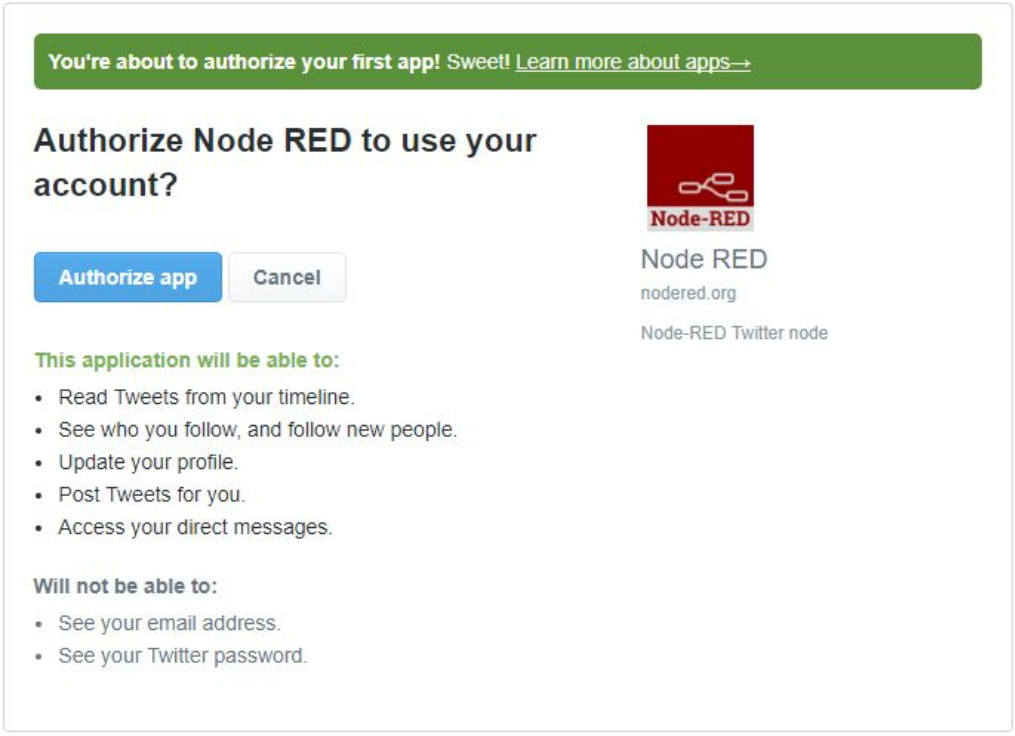


Continue to authenticate with twitter:

If you are not logged in you will hit a login screen:



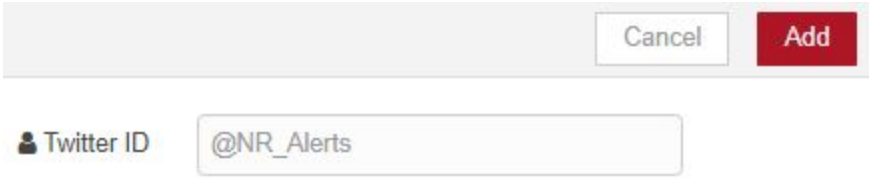
In this case, go ahead and log in. If you were already logged in, you will see:



Authorize the app, and then close the tab once confirmation is returned.

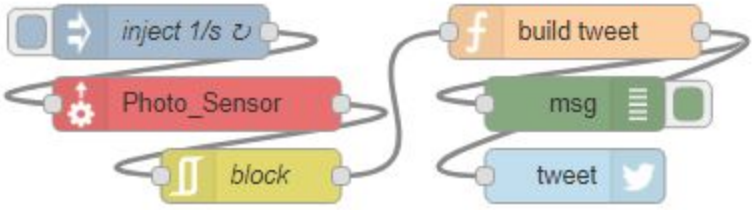
> Authorised - you can close this window and return to Node-RED

Add the new Twitter ID credentials to the node settings, and the node setup is complete!



10. Deploy the flow.

    Now Node-RED checks the photo sensor status every second, and only when it changes will it build and send a tweet from the account you used, tagging who or whatever you wish!



    Activate the switch to test the flow: