

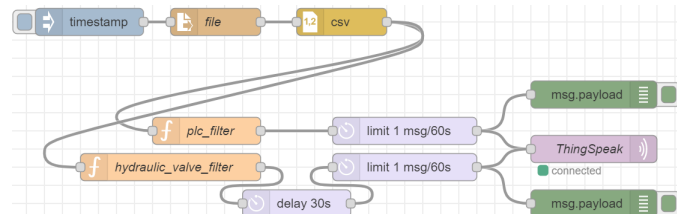
#02: Node-RED

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ThingSpeak channel: <https://thingspeak.com/channels/1363188>

The primary goal of this challenge is to filter a list of messages from the *traffic.csv* file and send them to a *ThingSpeak* channel. The requested topics are:

- `factory/department1/section1/plc` and `factory/department3/section3/plc` that will send to *field1*;
- `factory/department1/section1/hydraulic_valve` and `factory/department3/section3/hydraulic_valve` that will send to *field2*;



In particular the main functionalities of all the nodes are the followings:

- **file**: read the content of the *traffic.csv* file and send it to the next node (absolute path);
- **csv**: parse the string received from the previous node and create a Javascript object of key/value pairs for each line;
- **plc_filter** and **hydraulic_valve_filter**: receive a message for each line of the file, detect if they contain the string '*Publish Message*' and the right topic (the four listed at the beginning), wrap the payload of the message, convert it from hexadecimal to string and send a message in the form '`field_i=[value]&status=MQTTPUBLISH`';
- **delay nodes**: limit the rate of the messages in order to respect the requirements of the free version of *ThingSpeak*;
- **ThingSpeak**: all the filtered messages received by the previous nodes are sent to the *ThingSpeak* channel, with the topic '`channels/[channel_id]/publish/[api_key]`'.