

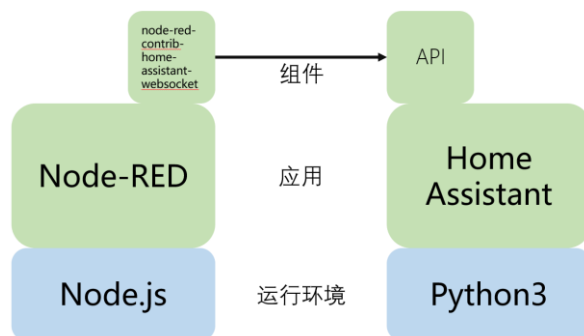
Node-RED 安装与初体验

【操作步骤】

1. Node-RED 架构
2. 在树莓派上安装 Node-RED
3. 启动 Node-RED
4. 创建第一个流程

【参考】

- Node-RED 与 HomeAssistant



- Node-RED 网站
<https://nodered.org/>
- 树莓派上安装 Node-RED
`sudo apt-get install build-essential`
`bash <(curl -sL https://raw.githubusercontent.com/node-red/raspbian-deb-package/master/resources/update-nodejs-and-nodered)`

Node-RED 配置

【操作步骤】

1. Node-RED 的启动、停止、输出查看、自启动
2. Node-RED 的用户名/密码设置
3. 安装 node-red-contrib-home-assistant-websocket
4. 建立与 home-assistant 的连接

【参考】







- 树莓派上 Node-RED 命令
 - `node-red-stop` ——停止 Node-RED 服务
 - `node-red-start` ——启动 Node-RED 服务
 - `node-red-restart` ——重启 Node-RED 服务
 - `node-red-log` ——输出 Node-RED 服务日志
 - `sudo systemctl enable nodered.service` ——系统启动时自动运行 Node-RED
 - `sudo systemctl disable nodered.service` ——系统系统时不自动运行 Node-RED
- 安装 node-red-admin 工具
 - `sudo npm install -g node-red-admin`
- 生成密码的 hash 值
 - `node-red-admin hash-pw`
- 安装 node-red-contrib-home-assistant-websocket
 - `cd ~/.node-red`
 - `npm install node-red-contrib-home-assistant-websocket`

HomeAssistant 节点(1)

【操作步骤】

1. 导入流程样例
2. event: all 节点演示
3. event: state 节点演示
4. poll state 节点演示

【参考】

| 节点 | 说明 | 输入 | 输出 (payload) |
|---|----------------------|----|--------------|
|  events: all  | 由 HomeAssistant 事件触发 | 无 | 事件相关数据 |
|  events: state  | 由实体状态改变事件触发 | 无 | 新的状态值 |
|  poll state  | 定时查询状态 | 无 | 状态值 |

- HomeAssistant 中的事件
<https://www.hachina.io/docs/470.html>
- 流程样例

```

{"id":"ef53097d.5af3b8","type":"tab","label":"","events":all,"disabled":false,"info":"","z":"","id":"e6574104.b450c","type":"tab","label":"","events":state,"disabled":false,"info":"","z":"","id":"1afde359.90f62d","type":"tab","label":"poll state","disabled":false,"info":"","z":"","id":"69621d87.7af904","type":"server","z":"","name":"HACChina Example","legacy":false,"hassio":false,"rejectUnauthorizedCerts":true,"ha_boolean":{"y/yes|true|on|home|open"},"id":"7c92d0a1.eadbe","type":"server-events","z":"ef53097d.5af3b8","name":"只由 xiaomi_aqara.click 事件触发","server":"69621d87.7af904","event_type":"xiaomi_aqara.click","x":149,"y":662.0000448226929,"wires":[["260a41b5.88261e"]]},{"id":"80cfff72a.fd91d8","type":"debug","z":"ef53097d.5af3b8","name":"dubug 输出 msg.payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":955.0001029968262,"y":812.9999980926514,"wires":[],"id":"260a41b5.88261e","type":"switch","z":"ef53097d.5af3b8","name":"","property":"payload.event.click_type","propertyType":"msg","rules":[{"t":"eq","v":"single","vt":"str"},{"t":"eq","v":"double","vt":"str"},{"t":"eq","v":"hold","vt":"str"}],"checkall":"true","repair":false,"outputs":3,"x":281.9999809265137,"y":833.0000438690186,"wires":[["9e917871.0aa988"],["f0b9e490.544888"],["8c3d79c4.9f6698"]]},{"id":"9e917871.0aa988","type":"change","z":"ef53097d.5af3b8","name":"change 节点, 设定 payload 为`单击`","rules":[{"t":"set","p":"payload","pt":"msg","to":"单击","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":607,"y":649.999980926514,"wires":[["80cfff72a.fd91d8"]]},{"id":"f0b9e490.544888","type":"change","z":"ef53097d.5af3b8","name":"change 节点, 设定 payload 为`双击`","rules":[{"t":"set","p":"payload","pt":"msg","to":"双击","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":616.0000152587891,"y":798.0000591278076,"wires":[["80cfff72a.fd91d8"]]},{"id":"8c3d79c4.9f6698","type":"change","z":"ef53097d.5af3b8","name":"change 节点, 设定 payload 为`长按`","rules":[{"t":"set","p":"payload","pt":"msg","to":"长按","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":561.9999923706055,"y":932.9999828338623,"wires":[["80cfff72a.fd91d8"]]},{"id":"45261274.003c6c","type":"server-events","z":"ef53097d.5af3b8","name":"所有事件","server":"69621d87.7af904","event_type":"","x":139.88280868530273,"y":245.58205223083496,"wires":[["aa8164c7.8a5668"],["fa25242b.0a2598"],["680e2ad.42936d4"],["9f10fec7.cb7b2"],["8177868a.07dac8"]]},{"id":"aa8164c7.8a5668","type":"debug","z":"ef53097d.5af3b8","name":"dubug 输出 msg.payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"topic","x":524.0195465087891,"y":210.00391101837158,"wires":[],"id":"680e2ad.42936d4","type":"debug","z":"ef53097d.5af3b8","name":"dubug 输出

```

msg.event_type","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"event_type","x":544.0195770263672,"y":318.00391960144043,"wires":[]},{id:"9f10fec7.cb7b2","type":"debug","z":"ef53097d.5af3b8","name":"debug 输出

msg.payload.event.entity_id","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload.event.entity_id","x":575.0195503234863,"y":417.00390434265137,"wires":[]},{id:"8177868a.07dac8","type":"debug","z":"ef53097d.5af3b8","name":"debug 输出

all","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":true,"x":528.0195732116699,"y":45.99999809265137,"wires":[]},{id:"401dfb4b.7bc1a4","type":"server-state-changed","z":"e6574104.b450c","name":"所有实体状态改变事件

","server":"69621d87.7af904","entityidfilter":"*","entityidfiltertype":"regex","outputinitially":false,"state_type":"str","haltifstate":"","halt_if_type":"str","halt_if_compare":"is","outputs":1,"x":220,"y":300,"wires":[["fa7bd4bc.372168"]],{"id":"fa7bd4bc.372168","type":"debug","z":"e6574104.b450c","name":"debug 输出

payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":710,"y":240,"wires":[]},{id:"90b025c1.8bede8","type":"server-state-changed","z":"e6574104.b450c","name":"判断某实体新的状态

","server":"69621d87.7af904","entityidfilter":"sensor.temperature_158d00019f8b1f","entityidfiltertype":"substring","outputinitially":false,"state_type":"num","haltifstate":"30","halt_if_type":"num","halt_if_compare":"gt","outputs":2,"x":230,"y":620,"wires":[["9b145a75.f7f578"],["cb76e7db.c38a68"]],{"id":"9b145a75.f7f578","type":"debug","z":"e6574104.b450c","name":"debug 输出

payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":710,"y":540,"wires":[]},{id":"cb76e7db.c38a68","type":"debug","z":"e6574104.b450c","name":"debug 输出

payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":670,"y":740,"wires":[]},{id":"c689c009.ee1c3","type":"poll-state","z":"1afde359.90f62d","name":"每 5 秒轮询状态

","server":"69621d87.7af904","updateinterval":5,"outputinitially":false,"outputonchanged":false,"entity_id":"sensor.temperature_158d00019f8b1f","state_type":"str","halt_if":"30","halt_if_type":"num","halt_if_compare":"gt","outputs":2,"x":260,"y":440,"wires":[["bc1c32ab.882fc"],["cafd670.2dbf498"]],{"id":"bc1c32ab.882fc","type":"debug","z":"1afde359.90f62d","name":"debug 输出

payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":700,"y":300,"wires":[]},{id":"cafd670.2dbf498","type":"debug","z":"1afde359.90f62d","name":"debug 输出






payload","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":690,"y":500,"wires":[]}]

HomeAssistant 节点(2)

【操作步骤】

1. 导入流程样例
2. current_state 节点演示
3. get entities 节点演示
4. call service 节点演示
5. 其它节点

【参考】

| 节点 | 说明 | 输入 | 输出 (payload) |
|--|--------------------|-------------------------------------|----------------|
|  current state | 查询当前状态 | 可输入 payload.entity_id:实体名, 也可在节点中配置 | 状态值 |
|  get entities | 查找实体 | 仅用于启动, 查询条件在节点中配置 | 状态对象 |
|  call service | 调用服务 | 可输入服务与数据, 也可在节点中配置 | 调用的服务与数据 |
|  fire event | 事件触发 | 可输入事件类型与数据, 也可在节点中配置 | 事件类型与数据 |
|  get history | 查询历史状态值 | 输入时间范围与实体名, 也可在节点中配置 | 数组, 包含各个状态值 |
|  get template | 运行模板 | 模板内容, 也可在节点中配置 | 模板运行 (渲染) 后的输出 |
|  trigger: state | event:state 节点的高级版 | 开启和关闭触发 | 状态值 |

- HomeAssistant 中的实体与状态

<https://www.hachina.io/docs/468.html>

<https://www.hachina.io/docs/469.html>

- 流程样例

```
[{"id":"52beafd.0c9aa5","type":"tab","label":"current_state","disabled":false,"info":""},{id":"ceae909.4c51c7","type":"tab","label":"get entities","disabled":false,"info":""},{id":"d1231bc8.c7b848","type":"tab","label":"call service","disabled":false,"info":""},{id":"69621d87.7af904","type":"server","z":"","name":"HACHina Example","legacy":false,"hassio":false,"rejectUnauthorizedCerts":true,"ha_boolean":"y|yes|true|on|home|open",{id":"855bb2cb.9dbb3","type":"api-current-state","z":"52beafd.0c9aa5","name":"","server":"69621d87.7af904","halt_if":"","halt_if_type":"str","halt_if_compare":"is","override_topic":true,"override_payload":true,"override_data":true,"entity_id":"","state_type":"str","outputs":1,"x":438.0001449584961,"y":295.0000219345093,"wires":[["876fbdb.19f994","7a48375e.420078"]]},{"id":"876fbdb.19f994","type":"debug","z":"52beafd.0c9aa5","name":"debug","x":438.0001449584961,"y":295.0000219345093,"wires":[]},{"id":"dce082a3.be39c","type":"inject","z":"52beafd.0c9aa5","name":"inject","x":438.0001449584961,"y":295.0000219345093,"wires":[]},{"id":"aeca411.153a58","type":"inject","z":"52beafd.0c9aa5","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":152.89453125,"y":457.953125,"wires":[["855bb2cb.9dbb3"]]},{"id":"b9cd81.45ff628","type":"ha-get-entities","z":"ceae909.4c51c7","server":"69621d87.7af904","name":"","x":438.0001449584961,"y":295.0000219345093,"wires":[]},{"id":"6acf8f0d.366df","type":"debug","z":"ceae909.4c51c7","name":"","x":438.0001449584961,"y":295.0000219345093,"wires":[]}]
```

输出

注入

输出

查询条件为空, 获得所有实体

payload

2

```
60,"wires":[{}],{"id":"76cc4a4.8ccecb4","type":"inject","z":"ceae909.4c51c7","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":120,"y":240,"wires":[["b9cd81.45ff628"]]},{"id":"89697c65.0cc5e","type":"ha-get-entities","z":"ceae909.4c51c7","server":"69621d87.7af904","name":" 查询所有属性","rules":[{"property":"attributes.battery_level","logic":"lt","value":"50","valueType":"num"}],"output_type":"split","output_empty_results":false,"output_location_type":"msg","output_location":"payload","output_results_count":1,"x":420,"y":560,"wires":[["5c06f904.b526d8"]]},{"id":"b1a4bfd2.7c0f4","type":"inject","z":"ceae909.4c51c7","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":130,"y":520,"wires":[["89697c65.0cc5e"]]},{"id":"5c06f904.b526d8","type":"debug","z":"ceae909.4c51c7","name":"","active":true,"toolbar":true,"console":false,"tostatus":false,"complete":false,"x":850,"y":460,"wires":[{}],{"id":"ef1308d1.da90d8","type":"ha-get-entities","z":"ceae909.4c51c7","server":"69621d87.7af904","name":"","rules":[{"property":"entity_id","logic":"starts_with","value":"light","valueType":"str"}],"property":"state","logic":"is","value":"on","valueType":"str"},"output_type":"split","output_empty_results":false,"output_location_type":"msg","output_location":"payload","output_results_count":1,"x":380,"y":820,"wires":[["4f35600d.46849"]]},{"id":"ebc42a27.c1a788","type":"inject","z":"ceae909.4c51c7","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":130,"y":780,"wires":[["ef1308d1.da90d8"]]},{"id":"3fef601f.367a1","type":"debug","z":"ceae909.4c51c7","name":"","active":true,"toolbar":true,"console":false,"tostatus":false,"complete":false,"x":850,"y":820,"wires":[{}],{"id":"5d957599.66c26c","type":"api-call-service","z":"d1231bc8.c7b848","name":" 调用 persistent_notification.create 服务","server":"69621d87.7af904","service_domain":"persistent_notification","service":"create","data":{"message":"来自 Node-RED 的问候"},"render_data":false,"mergecontext":"","output_location":"payload","output_location_type":"msg","x":720,"y":240,"wires":[[]]},{"id":"7e69a9e1.6b12b8","type":"inject","z":"d1231bc8.c7b848","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":260,"y":240,"wires":[["5d957599.66c26c"]]},{"id":"862b9ad5.c37a58","type":"api-call-service","z":"d1231bc8.c7b848","name":" 打开灯","server":"69621d87.7af904","service_domain":"light","service":"turn_on","data":{"entity_id":"light.gateway_light_f0b429aa0768"},"render_data":false,"mergecontext":"","output_location":"payload","output_location_type":"msg","x":850,"y":380,"wires":[[]]},{"id":"8ec7ae87.1a6b7","type":"api-call-service","z":"d1231bc8.c7b848","name":" 关闭灯","server":"69621d87.7af904","service_domain":"light","service":"turn_off","data":{"entity_id":"light.gateway_light_f0b429aa0768"},"render_data":false,"mergecontext":"","output_location":"payload","output_location_type":"msg","x":770,"y":540,"wires":[[]]},{"id":"1278c04c.a1727","type":"server-state-changed","z":"d1231bc8.c7b848","name":"","server":"69621d87.7af904","entityidfilter":"sensor.temperature_158d00019f8b1f","entityidfiltertype":"exact","outputinitially":false,"state_type":"num","haltifstate":"30","halt_if_type":"num","halt_if_compare":"gt","outputs":2,"x":330,"y":440,"wires":[["862b9ad5.c37a58"],["8ec7ae87.1a6b7"]]},{"id":"4f35600d.46849","type":"api-current-state","z":"ceae909.4c51c7","name":"","server":"69621d87.7af904","halt_if":"","halt_if_type":"str","halt_if_compare":"is","override_topic":true,"override_payload":true,"override_data":true,"entity_id":"","state_type":"str","outputs":1,"x":660,"y":700,"wires":[["3fef601f.367a1"]]]]
```