

CRICKETS AUTOMATION

Training and Tutorials

xvisionIOT

Connecting nodeRED on

Hilscher netIOT Edge

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Abstract

This guide shows how to configure node-RED on Hilscher netIOT Edge in order to communicate with xvisionIOT container.

- Step One : Configure node-RED
- Step Two : Understand xvisionIOT nodes
- Step Three : Sample flow
- Step Four : Certificates management (optional)
- Step Five : SSL (optional)

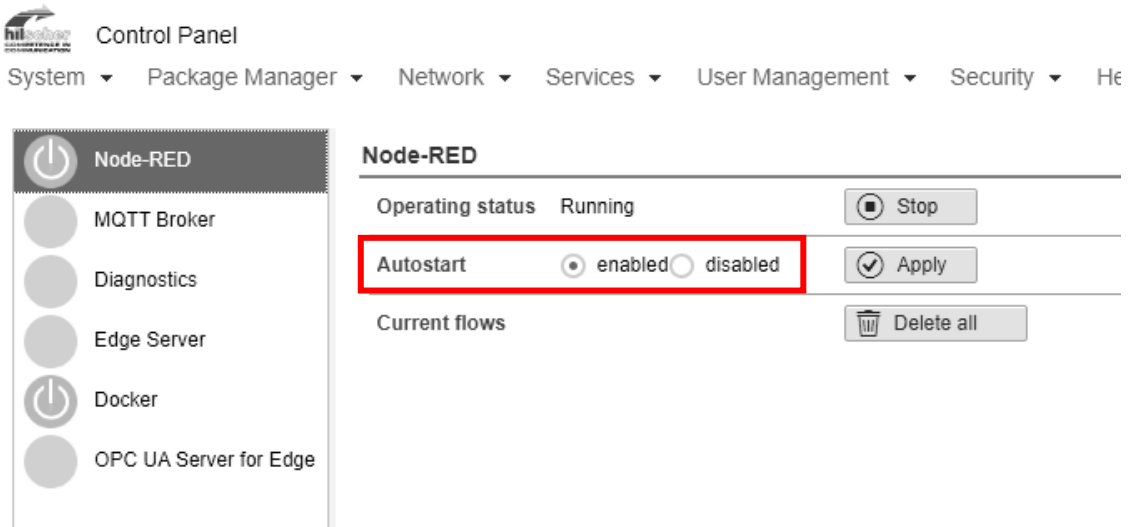
Pre-requisites

Install xvisionIOT as described in the “Install xvisionIOT container on Hilscher netIOT Edge.

1

Configure node-RED

- 1) Verify node-RED enabled. From **Edge Gateway Manager** select *Control Panel/Services/Services list*
- 2) Enable Node-RED if not enabled.



- 3) Install xvisionIOT contribute. From *Control Panel* start **Node-RED**. Choose *Palette Manager* menu, click on the *Install* tab, type "xvisionIOT" and select the contribute, finally push **INSTALL** button

2

Understand xvisionIOT nodes

xvisionIOT contribute has two node-RED nodes:

- **read item node**: lets you read an item (tag) value
- **write item node** write item node: lets you write an item (tag) value

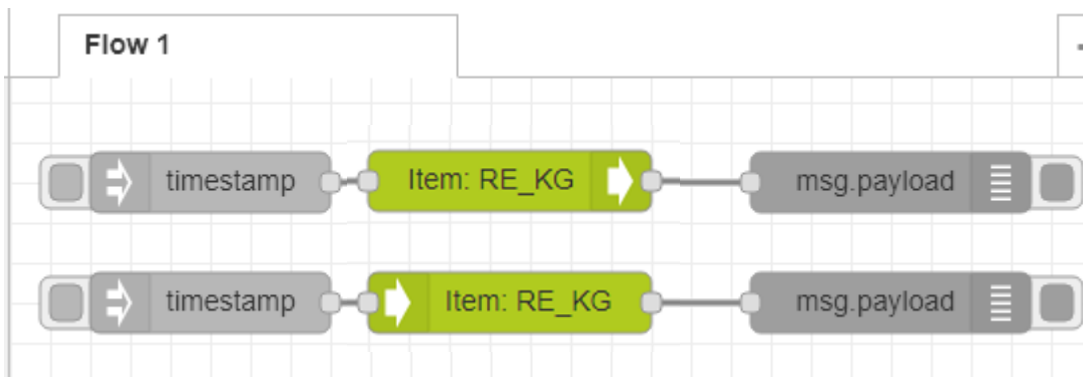


3

Sample flow

This sample flow shows how to configure node-RED to read/write xvisionIOT items.

Please check xvisionIOT container is running.



Configure a Read item Node

1. Drag the *read item node* into the flow area
2. Double click the node: The *Edit read Item node* window opens.
3. Set xvisionIOT server as localhost
4. Set *item name* to the name of an item in your running xvisionIOT project

Edit read Item node

Delete
Cancel
Done

▼ **node properties**

☰ xvisionIOT server

▼
✎

🔑 Item Name

📄 Value

▼
msg.payload

Node Name

Configure the xvisionIOT server



1. Enter server configuration by pushing the edit button
2. *Port*: use the port number that maps port 80 in the container
3. *API key*: use the same key as defined in the `/data/webhmi/restapicfg.xml` file

Edit read Item node > **Edit xvisionIOT-server node**

Delete Cancel Update

Address localhost

Port 8000

API Key 123456

SSL Parameters

Enable SSL

Certificate path Certificate path

Public Key Public key certificate

Configure a Write item Node

1. Drag the write item node into the flow area
2. Double click the node: The *Edit write Item node* window opens.
3. Set xvisionIOT server as localhost
4. Set item name to the name of an item in your running xvisionIOT project

Edit write Item node

Delete Cancel Done

node properties

xvisionIOT server localhost

Item Name RE_KG

Value Fixed 7891

Node Name Name

5. Adapt *Value* field to your needs.

QUICK START GUIDE

Sample flow

1. Start nodeRed, open menu/Import
2. Copy the following flow into the "Import Nodes" dialog, then press Enter

```
[{"id":"26fa8a5a.0fbd26","type":"xvisionIOT-read","z":"51bd9202.3faf8c","connData":"cad6b841.11f6d8","itemName":"RE_KG","value":"","valueType":"msg.payload","name":"","x":250,"y":840,"wires":[["896d29cb.2adbe8"]]}, {"id":"a8b977d6.224388","type":"xvisionIOT-write","z":"51bd9202.3faf8c","connData":"d6118e4b.7f69f","itemName":"RE_KG","value":"1234","valueType":"value","name":"","x":250,"y":900,"wires":[["34ff3b55.9471c4"]]}, {"id":"9f93e4aa.83e838","type":"inject","z":"51bd9202.3faf8c","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":100,"y":840,"wires":[["26fa8a5a.0fbd26"]]}, {"id":"896d29cb.2adbe8","type":"debug","z":"51bd9202.3faf8c","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"false","x":440,"y":840,"wires":[]}, {"id":"34ff3b55.9471c4","type":"debug","z":"51bd9202.3faf8c","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","x":440,"y":900,"wires":[]}, {"id":"55ca823f.a2de4c","type":"inject","z":"51bd9202.3faf8c","name":"","topic":"","payload":"","payloadType":"date","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":100,"y":900,"wires":[["a8b977d6.224388"]]}, {"id":"cad6b841.11f6d8","type":"xvisionIOT-server","z":"","address":"localhost","port":"8000","ssl":false}, {"id":"d6118e4b.7f69f","type":"xvisionIOT-server","z":"","address":"localhost","port":"8000","ssl":false}]
```

4

Certificates management (optional)

Warning! If you need Node-RED to communicate with xvisionIOT via SSL, then you need signed certificates. Self-signed certificates are not allowed by the netIOT appliance.

- 1) Add certificates: from **Edge Gateway Control Panel** select *Security/Public Key Infrastructure*
- 2) Select *Certificate type/Service certificates* and click on the node-RED item
- 3) Press the upload button and load the *xvisioniot_cert.pem* and the *xvisioniot_key.pem*

Control Panel

System ▾ Package Manager ▾ Network ▾ Services ▾ User Management ▾ Security ▾

Public Key Infrastructure (PKI)

Certificate Type	
Trusted Certification Authorities	
Service Certificates	
↑ Upload ↓ Download >>	📄 Copy path 📄 Show public key
Certificates ☰	Certificate Viewer - xvisioniot_cert.pem
▾ nginx	▾ issuer
cert.pem	country: "IT"
key.pem	state: "Some-State"
▾ node-red	locality: "Borgomanero"
xvisioniot_cert.pem	organization: "Crickets Automation"
xvisioniot_key.pem	commonName: "Crickets"

Reboot the netIOT: from *Control Panel/System* menu choose *Reboot*.

QUICK START GUIDE

How to configure xvisionIOT nodes for SSL

Follow the preceding instruction for no SSL nodes, but from within the **Edit xvisionIOT read/write node** form, set:

- **Enable SSL:** True
- **Certificate Path:** goto the the PKI menu, select the `xvisioniot_cert.pem` certificate and press the **Copy Path** button to copy path into the clipboard. Go back to the Edit server node form and paste the path into the *Certificate Path* field.
- **Public Key:** goto the the PKI menu, select the `xvisionIOT_key.pem` certificate and press the **Copy Path** button to copy path into the clipboard. Go back to the Edit server node form and paste the path into the *Public Key* field.

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