Setup & configuration OMRON PLC to Node-Red

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Overview

This is a Node-RED node module to directly interface with OMRON PLCs over FINS Ethernet protocol. Tested on CV, CP, CS, CJ, NJ and NX PLCs (the ones with FINS support)

Example flows have been included to help you get started. In the node-red editor, click the hamburger menu, select import then examples (or press ctrl+i)
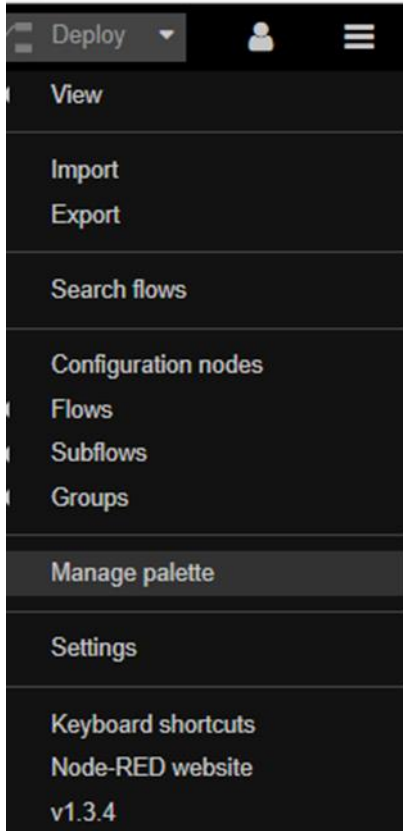
NODES
•read - read 1 or more WORDs or bits
•write - write 1 or more WORDs or bits
•fill - fill 1 or more consecutive addresses with a value
•read-multiple - read several disparate WORD or BIT address values
•transfer - copy 1 or more data values from one memory area to another
•control - this has the following functions...
  • Connect PLC
  • Disconnect PLC
  • Get PLC Status
  • Get PLC Unit Data
  • Set PLC STOP/PROGRAM mode
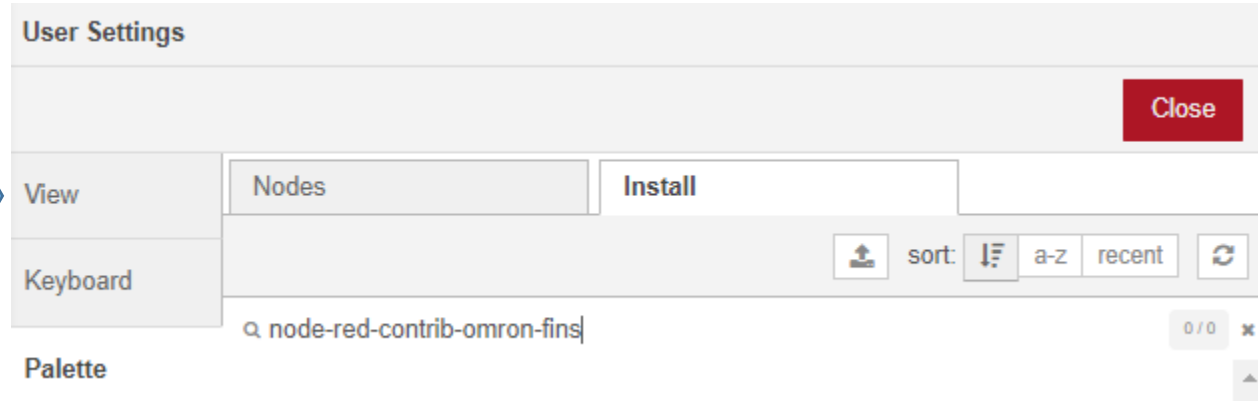 • Set PLC RUN/MONITOR mode
  • Get Clock
  • Set Clock

Setup Module/Library Flows for OMRON PLC
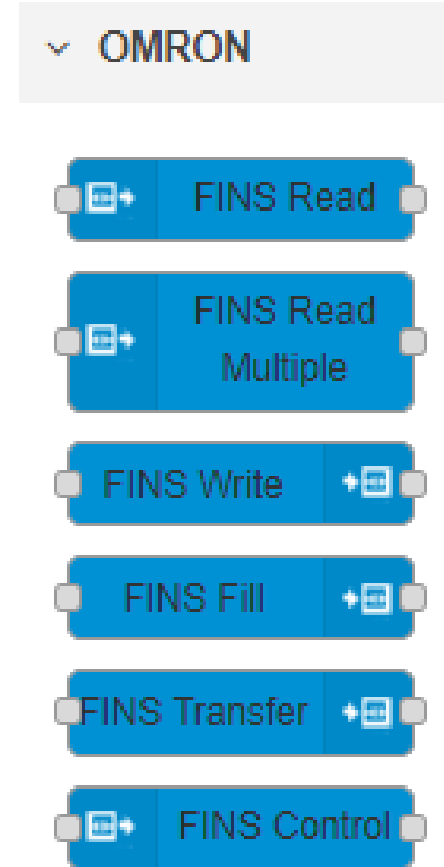
1. Install **node-red-contrib-omron-fins**

Click Manage Pallet

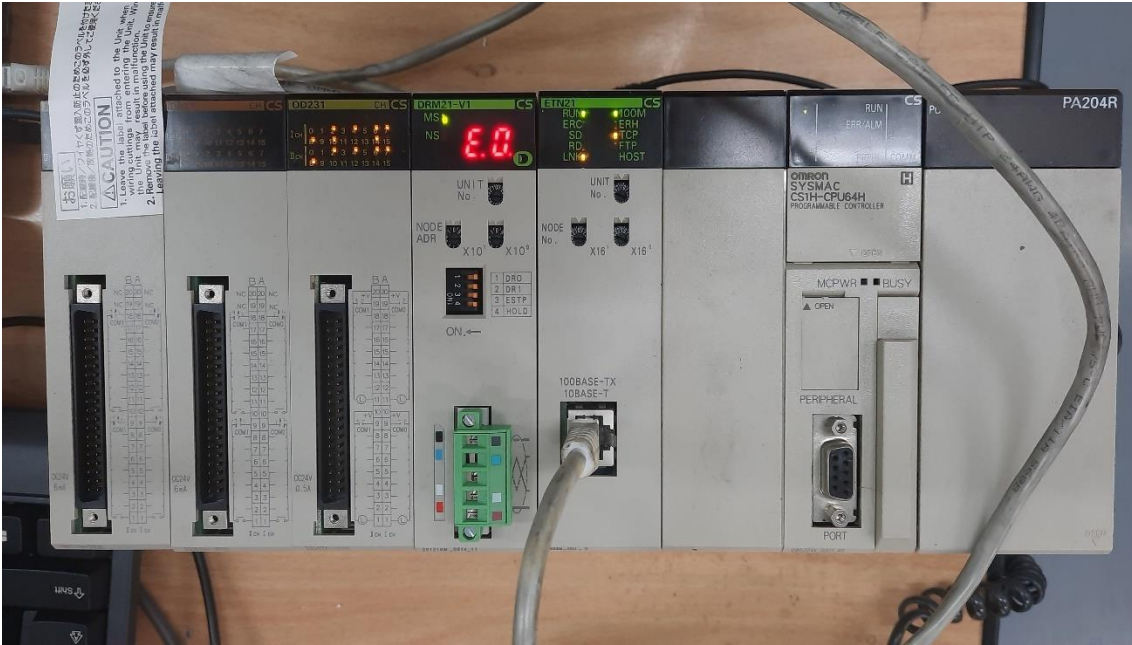Click Install Tab, find node-red-contrib-omron-fins, and install

Nodes

Connecting OMRON to Node-Red

2. Connect OMRON PLC to node-red computer via ethernet

3. Set IP Address for OMRON PLC from CX Programmer Application
   For Example:
   IP Address   : 192.168.250.1
   Subnet Mask   : 255.255.255.0

4. Set Computer IP Address similiar with OMRON PLC IP Address
   For Example   : 192.168.250.10

FINS Read node

5. Make a flow using OMRON FINS Read node

Flow:

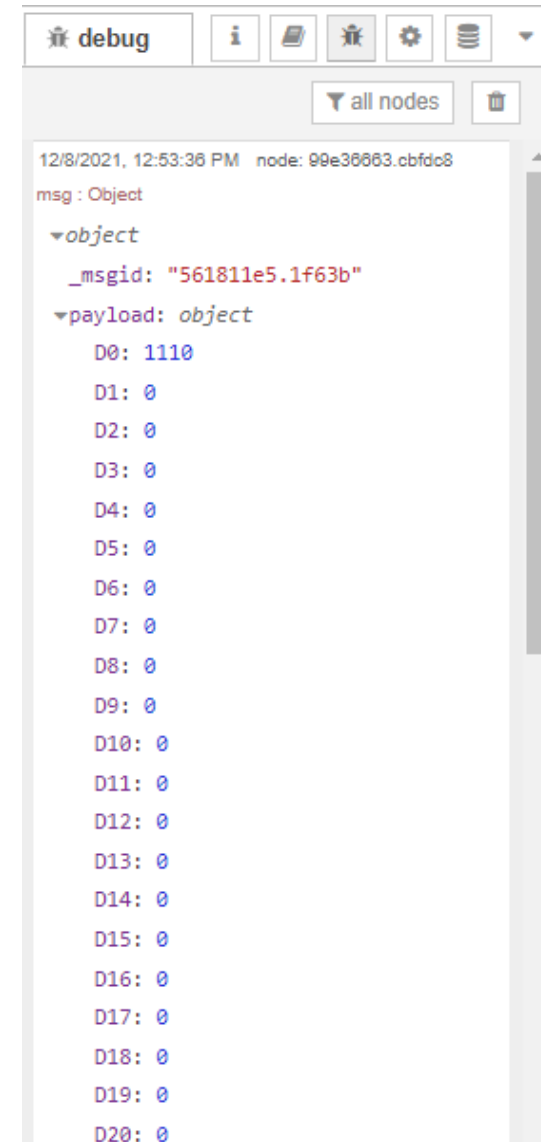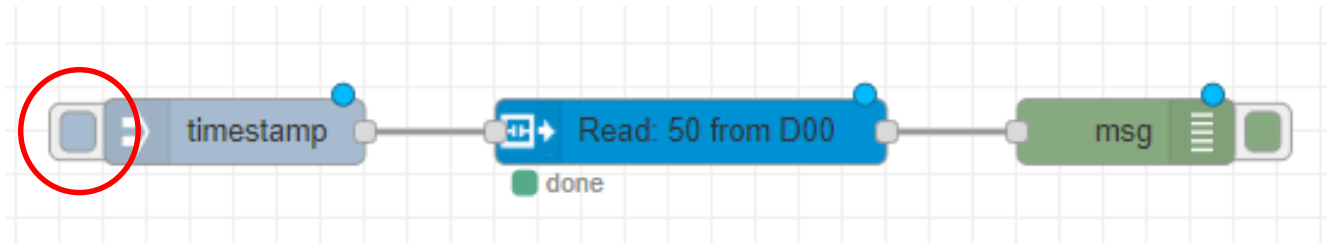Double click node FINS Read, set configuration:

Node in IP Address

FINS Read node

6. Deploy and click button in timestamp node to trigger to read OMRON
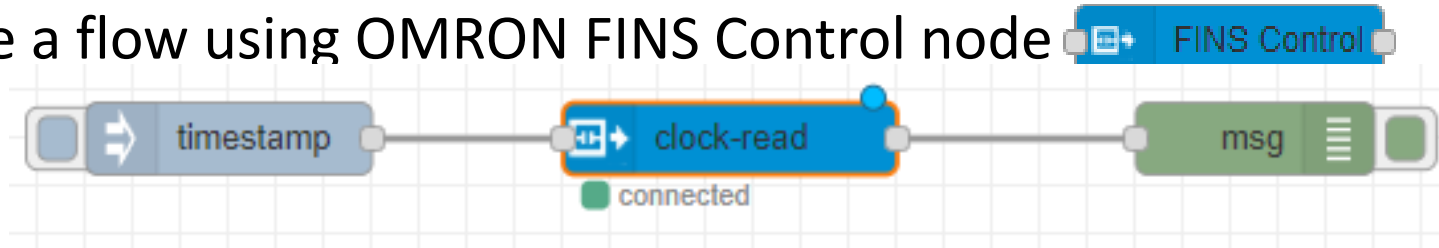   We try to read address D00 until D49.
   Click debug message tab, we can view
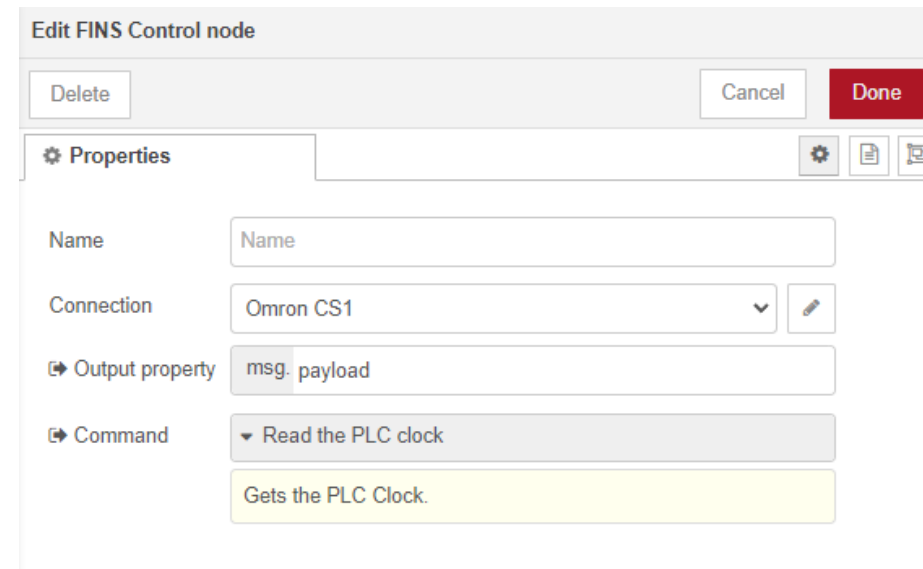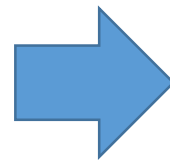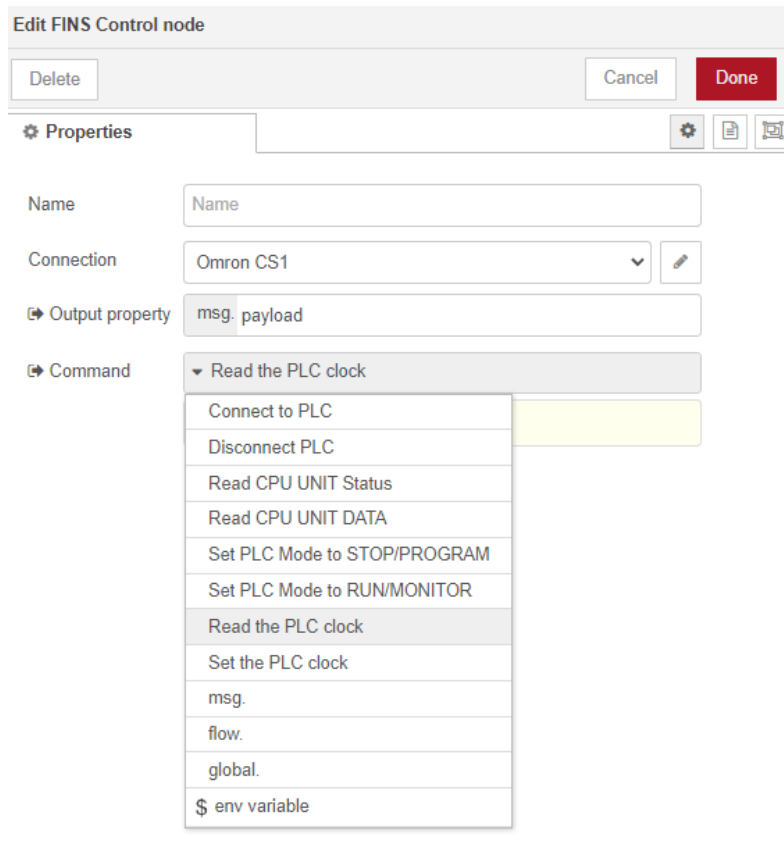   payload contains variables

FINS Control node

7. Make a flow using OMRON FINS Control node

Flow:

Double click node FINS Control, set Connection same with previous step.

For Command select Read the PLC clock (example):

FINS Control node

8. Deploy and click button in timestamp node to trigger to read clock OMRON
   Click debug message tab, we can view
   payload contains variables PLC clock/time

FINS Write node

9. Make a flow using OMRON FINS Write node

Flow:

Double click node FINS Write, set Connection same with previous step.
Example, we will write to Address D0 with value 120

Edit FINS Write node

| Delete | | Cancel | Done |

⚙ Properties

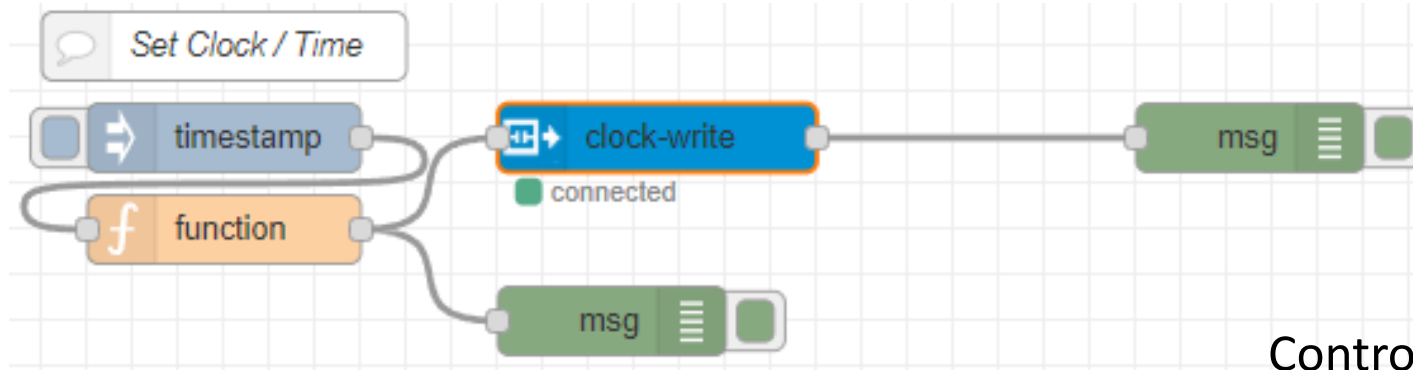| Name | Name |
Connection	Omron CS1
Address	D0
Data	120
Output property	msg. payload

Set PLC Clock

11. Make a flow using OMRON FINS Control node

Flow:

Make a function node to create clock format

⚙ Setup	On Start	On Message	On Stop

```
1  var d = new Date();
2  var year = parseInt(d.getFullYear().toString().substr(-2));
3  var month = d.getMonth()+1;
4  var day = d.getDate();
5  var hour = d.getHours();
6  var minute = d.getMinutes();
7  var second = d.getSeconds();
8  var day_week = d.getDay();
9
10  var m={
11      "year":year,
12      "month":month,
13      "day":day,
14      "hour":hour,
15      "minute":minute,
16      "second":second,
17      "day_of_week":day_week
18  };
19
20  return {payload:[m]};
21
```

Control Node configuration, select command
Set the PLC clock

Edit FINS Control node

| Delete | | Cancel | Done |

⚙ **Properties**

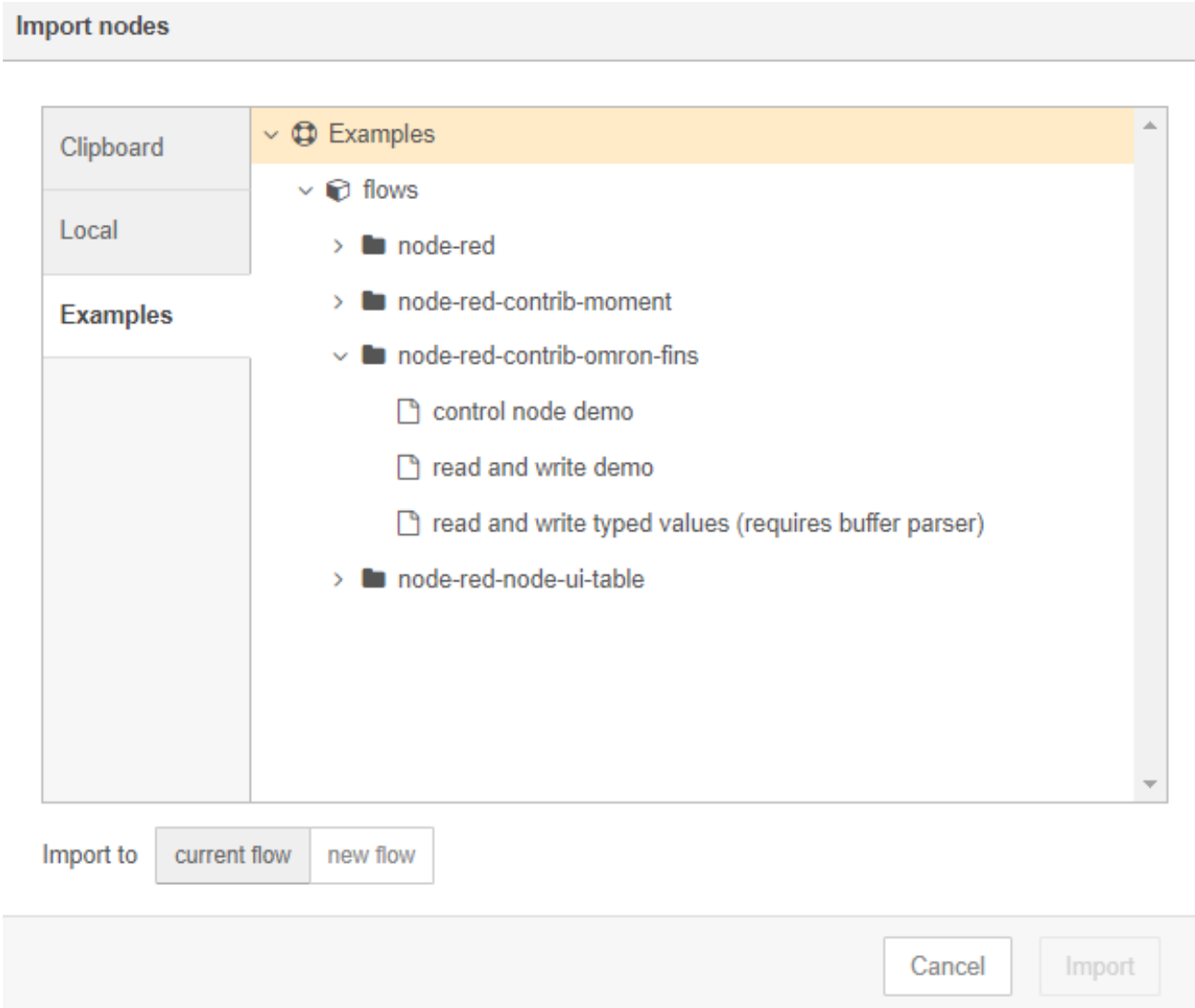| Name	Name
Connection	Omron CS1
⮕ Output property	msg. payload
⮕ Command	▾ Set the PLC clock

Sets the PLC Clock to value in the clock field. See built in help for more info.

| ⏱ Clock Value | ▾ msg. payload[0] |

OTHERS NODE FUNCTION EXAMPLES

Import examples flow

OTHERS NODE FUNCTION EXAMPLES

Download example flow from my Google Drive

Link: *https://drive.google.com/file/d/111BDB_JGhCRYSup7KcH6SWhEaoh06_M4/view?usp=sharing*