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# C2-OPCUA Tech Training

## (Sample Testing Setup)

Valid as of 10/22/25

# C2-OPCUA Overview

- C2-OPCUA : CLICK PLUS OPC UA Server communication module, microSD card slot, (1) microB-USB and (1) Ethernet 10/100Base-T (RJ45) port(s). For use with all CLICK PLUS PLCs.
- The C2-OPCUA module is compatible with option slot 0 or option slot 1 of any CLICK PLUS PLC. Multiple C2-OPCUA modules are supported.
- Requires CLICK Programming Software version 3.7x or above
- USB2.1 compatible port on Windows PC, or 10/100 Ethernet TCP/IP network
- The C2-OPCUA module ***requires*** a communications connection separate from that of the CPU. Both may be connected to the same or different Ethernet networks.
- The CPU can be programmed over its Ethernet or USB port.
- The C2-OPCUA USB port will allow a connected PC to function as an OPC UA client, but other OPC UA clients will require connection to the Ethernet port.
- Supports UA Part 8 Data Access and OPC UA Security architecture

# Additional Resources Needed

- UAExpert by United Automation from this LINK
  - This is a 3rd party OPC UA Client which can be used for testing.
- C2-xxCPUx (Any CLICK Plus CPU) with Firmware v3.7x or higher
- C2-OPCUA Slot Module
- CLICK Programming Software v3.7x or higher

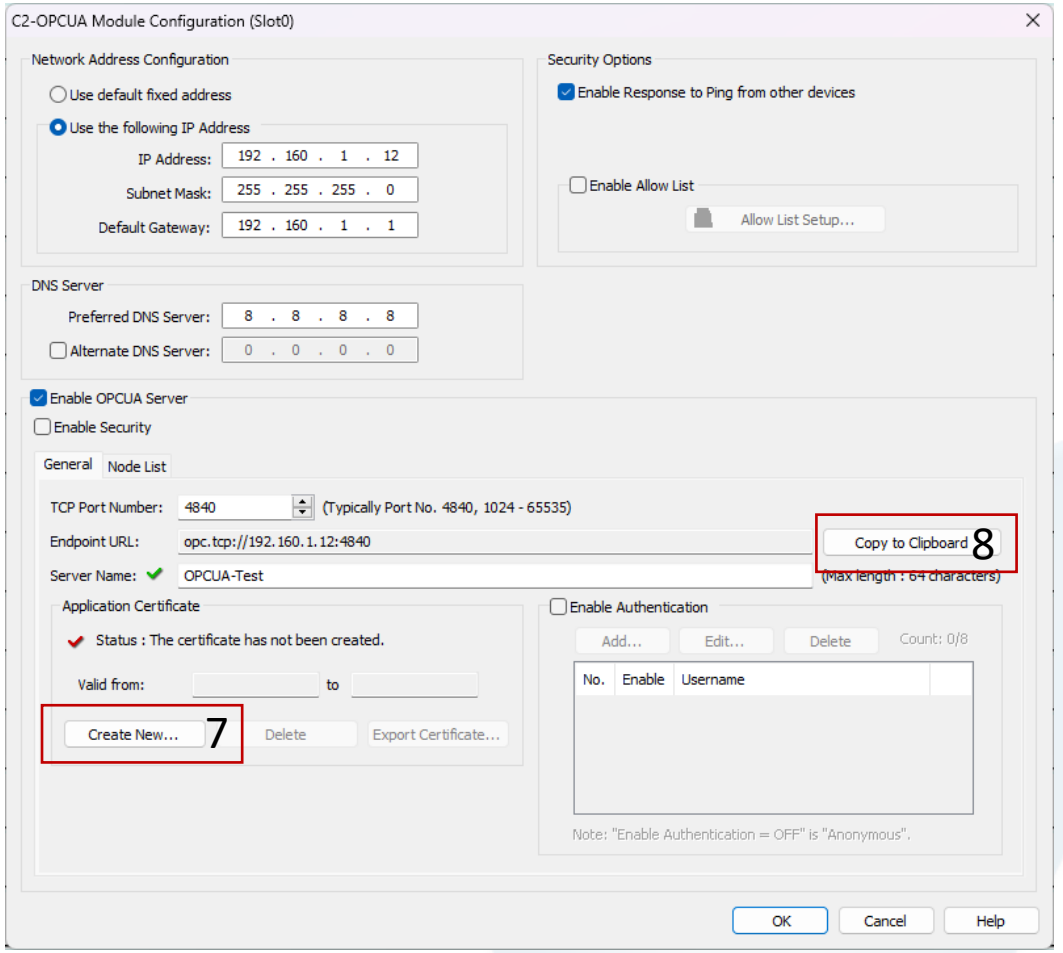
# C2-OPCUA Installation

**Be sure to update the CLICK PLUS PLC firmware BEFORE installing the C2-OPCUA Module**

1. Ensure you have 24VDC wired to the CLICK PLUS PLC.  (Do not use the USB low power mode.)
2. BEFORE you install the C2-OPCUA  module, connect to the CLICK PLUS PLC and update the firmware to v3.7x or higher
3. Power off the CPU.
4. Install the C2-OPCUA module, following the hardware installation instructions in the  “Installing Option Slot Modules” section of Chapter 3 in the Click PLUS User Manual.
5. Restore power.
6. Update the firmware again—this time it will update the C2-OPCUA firmware.

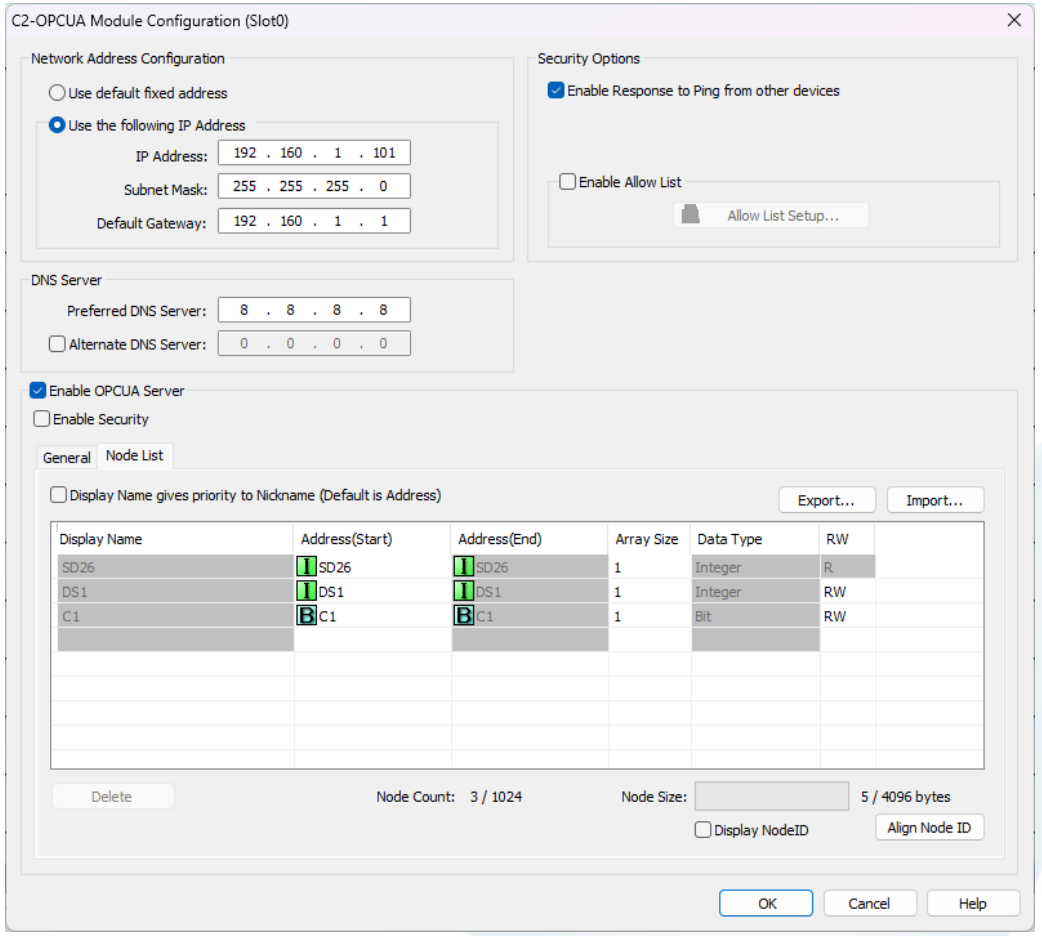
# C2-OPCUA Software Setup PART 1

1. Add the C2-OPCUA module to project using ***System Configuration*** screen
2. Navigate to ***SlotX C2-OPCUA Setup Screen*** using the top ribbon or function tree
3. For ease of testing, use an IP address/Default Gateway on the same network as your CLICK PLC and PC
4. Enter 8.8.8.8 for your DNS Server
5. Check ***Enable OPCUA Server***
6. Choose a ***Server Name*** and take a note of this for later use.
7. Press ***Create New…*** under Application Certificate. Enter ***Country*** and ***Organization*** and press ***OK***. This creates a self-signed certificate for use.
8. Press ***Copy to Clipboard*** to copy the ***Endpoint URL*** for use later in UA Expert



# C2-OPCUA Software Setup PART 2

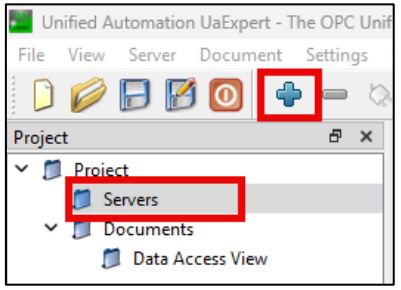
9. Now change to the ***Node List*** tab
10. Enter the following addresses in the ***Address(Start)*** column:
    - SD26 (_RTC_Second)
    - DS1 (or other available DS address if using an existing project)
    - C1 (or other available C-bit address if using an existing project)
11. Press OK to finish the module configuration
12. The PLC clock must match the OPCUA clock to ensure data can be synchronized (*If times stamps are not within a few minutes of each other, the C2-OPCUA module will not function correctly*). Best way to achieve this is to use the ***Calendar/Clock Setup*** screen under the PLC menu in the ribbon. Change the radio button to ***Adjust to PC Clock*** and press ***Write to PLC***
13. Add the same addresses to a Click Data View
14. Transfer your project to the CLICK. Wait for the C2-OPCUA module “OK" light to stop flashing for setup to be complete



# UAExpert Setup PART 1

1. In UA Expert, either click the blue "***+***" in the tool bar *OR* right click the ***Servers*** area in the left-hand project window to get the ***Add Server*** dialog shown in figure 2 at right.
2. Double click under ***Custom Discovery***, then paste the ***Endpoint URL*** that was copied in step 8 of "C2-OPCUA Software Setup" and press ***OK***.
3. Now the server will show in the list under ***Custom Discovery***. Highlight the correct entry and add the ***Server Name*** also noted in step 8 to the ***Configuration Name*** *at the top of the* ***Add Server*** *dialog*.
4. In the same ***Add Server*** dialog, and while the new server is still highlighted, change to the ***Advanced*** tab (shown in figure 4 at right), paste the ***Endpoint URL*** in the ***Endpoint Url*** field and then press ***OK***.
5. Now the new Server will show in the left-hand ***Project*** window. Highlight the Server name you just added and press the ***Connect Server*** button that looks like a plug.
6. Since using a self-signed certificate, you may get a pop-up warning about the certificate. Press ***Trust Server Certificate*** then ***Continue*** button. (*A self-signed certificate with security disabled is good for troubleshooting and set-up, but ADC recommends using security when in operation as all data is sent as plain text*).

1

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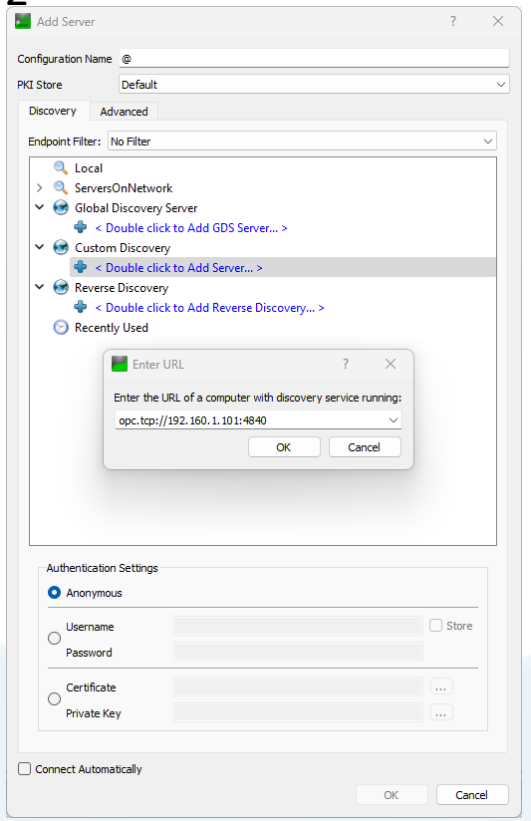


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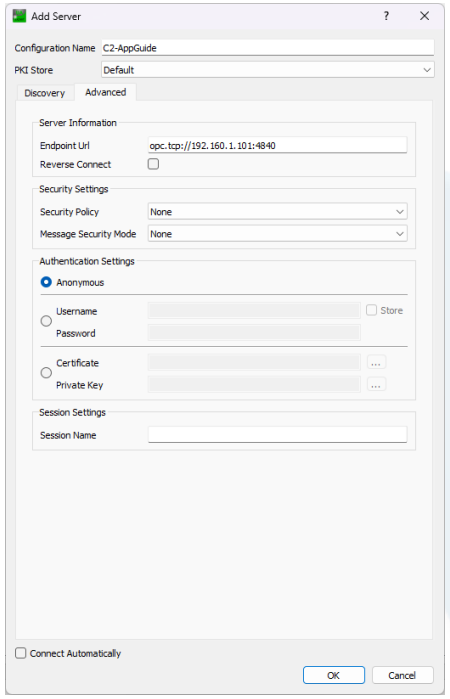


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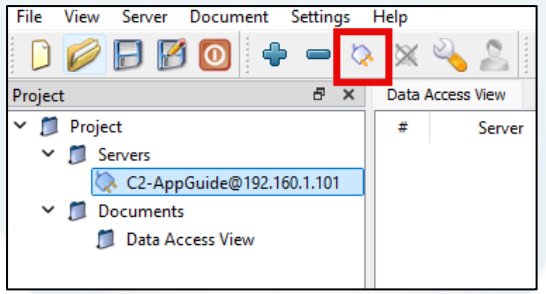

# UAExpert Setup PART 2

7. In the lower left hand ***Address Space*** window, expand Objects, then DeviceSet, and finally CLICKPLUS. Now you can see the nodes you added in step 10 of “C2-OPCUA Software Setup”. These addresses can now be dragged to the middle ***Data Access View*** window.

8. In the ***Data Access View*** window, ***StatusCode*** should be "**Good**" and the **Value** for SD26 should display the current seconds of the real-time clock of the Click. This tests if UAExpert is reading data from your C2-OPCUA module.

9. Now double click on the ***Value*** cell for DS1, write 100 and press ***Enter***. This should write data to DS1 in your CLICK PLC. Check the Data View you created in step 13 of “C2-OPCUA Software Setup” to ensure the C2-OPCUA module is receiving data from UAExpert as well.

10. The final test is to double click in the ***Value*** cell for C1 and either turn on or off the check box to test a Boolean write to the PLC as well.

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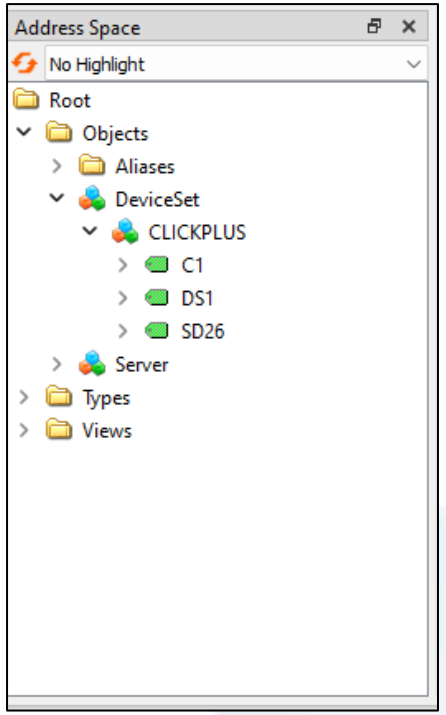


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