

Keeware to TBox Ethernet Communications Setup



Description: This PCD Application Note will guide you through setting up basic Ethernet communications via ModBus TCP/IP Protocol between the KepServerEX Communications Engine and the TBox Family of RTU/PLC Products Solutions.

Requirements: KepServerEX Communications Engine (Version 5.4 or later) with the Modbus Protocol Suite installed. Semaphore TBox RTU/PLC with Ethernet Communications Configured.

Assumptions: It is assumed that you have familiarity with industrial devices and communications products and you have configured and can successfully communicate to the TBox RTU/PLC via Ethernet Communications with TWinSoft Programming Software.

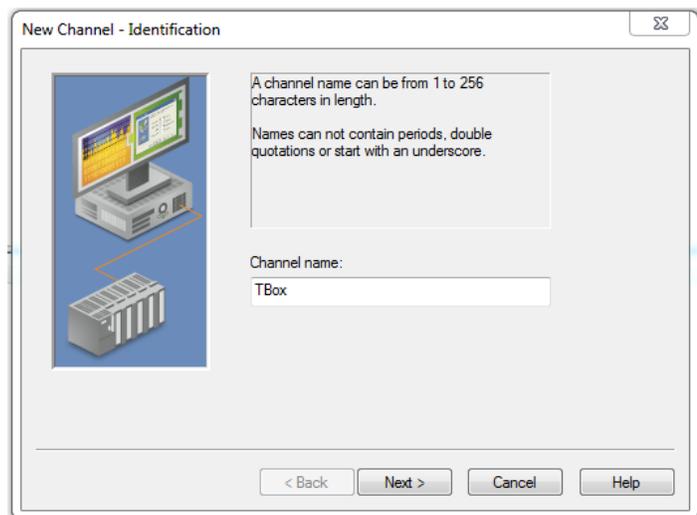
Notes: All of the information provided is believed to be accurate and reliable; however, PCD assumes no responsibility for any errors. Further, PCD assumes no responsibility for the use of the information provided.

Section 1 - Creating a new Channel

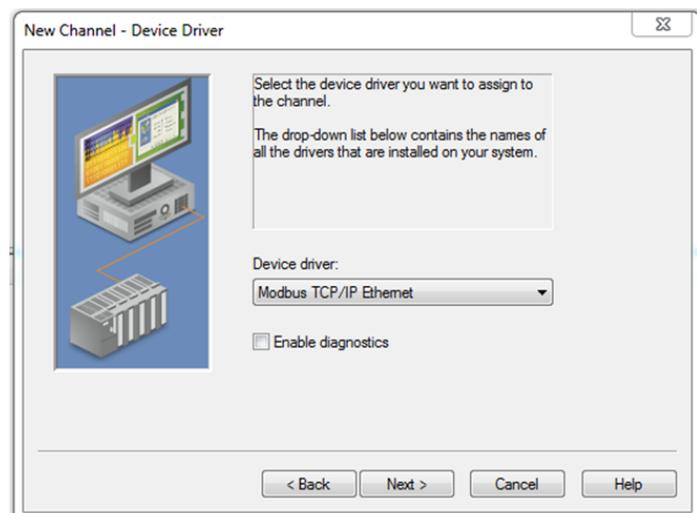
1. Open KEPServerEX Runtime and choose “New” from the file menu.
2. You will be prompted to replace the runtime project. Select “No” if you have a current configuration running then skip ahead to step 4.
3. If you wish to start with a new configuration file select “Yes, Update”.
4. Click in the browser tree to add a channel or use the new channel button. The wizard will guide you through the channel setup.



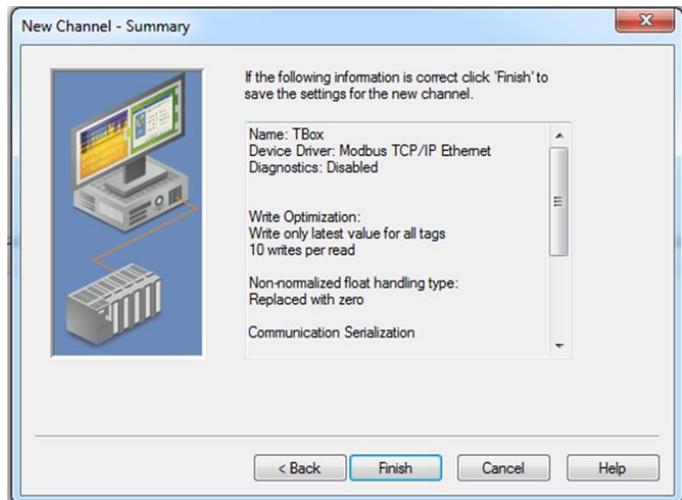
5. Enter a name and select next.



6. Choose “Modbus TCP/IP Ethernet” from the drop down box and click next.

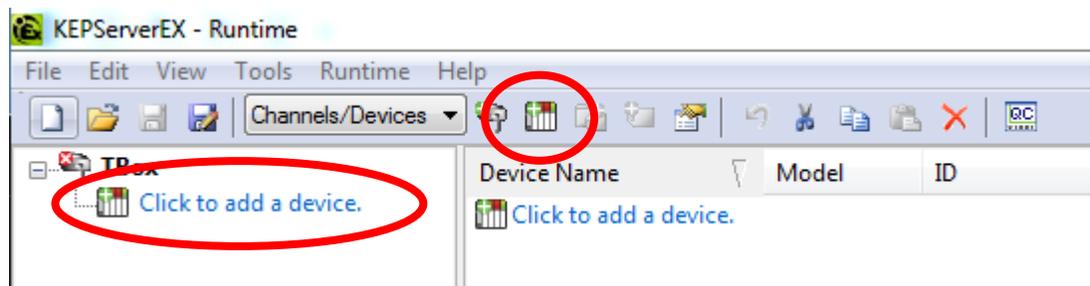


7. Communication Serialization – Leave these settings at default. Communication Serialization, specifies whether data transmissions should be limited to one channel at a time. For more information, refer to "Channel Properties - Advanced" in the server help file.
8. Network Interface – This can be left at default. When left at default Kepware will let the operating decide what network adaptor to use.
9. Connection Behavior – Default settings are fine.
10. Write Optimizations – Default settings.
11. Non-Normalized Float Handling – Default settings.
12. Summary – On the summary page you can review the settings before clicking finish. Use the back button to modify any settings.

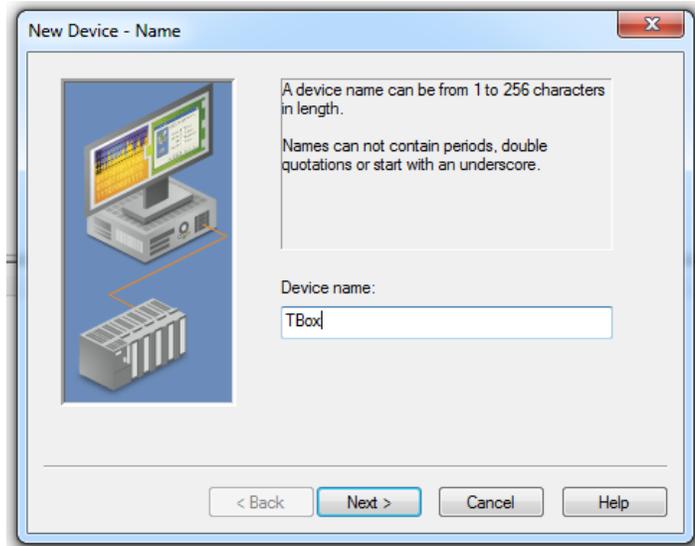


Section 2- Add a device.

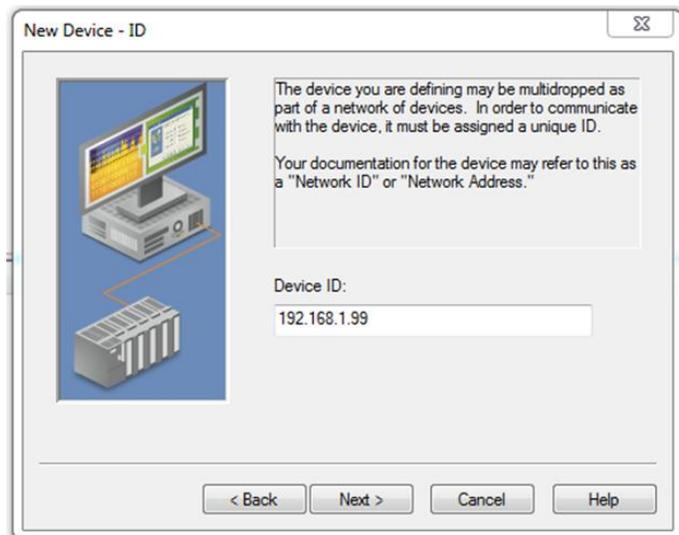
1. Click in the browser tree to add a new device or use the new device Button. The wizard will guide you through the device setup.



2. Enter a name and select next.



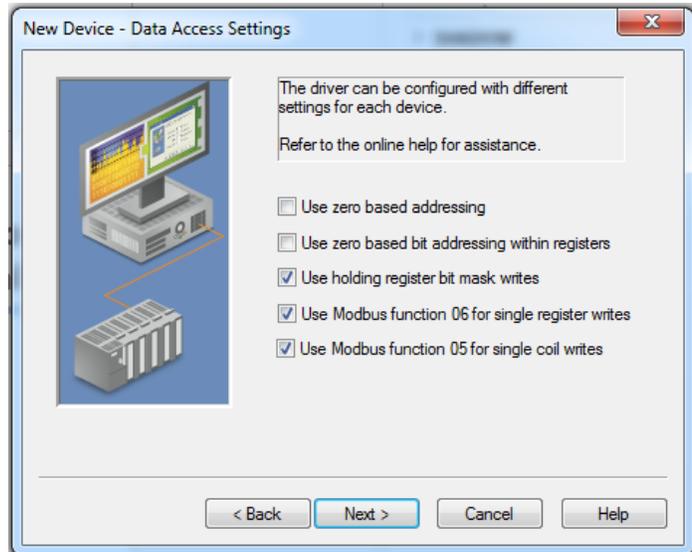
3. Device model – Modbus (Default setting).
4. Device ID – This will be the IP Address of the TBox. The Default TBox IP Address is 192.168.1.99.



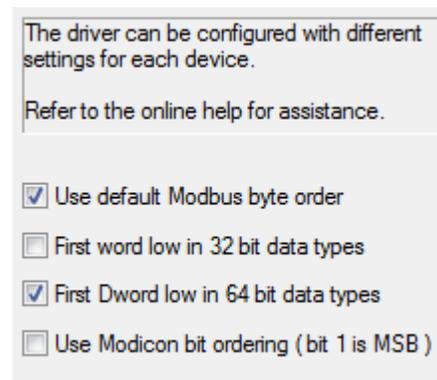
5. Scan Mode – Default setting.
6. Timing – All timing settings can be left at default.
7. Auto Demotion – Click both checkboxes and leave the other settings at defaults.
8. Database Creation – these settings will be left at defaults.
9. Ethernet – These will be left at default unless you changed the port settings in the TBox.

10. Data Access Settings – Uncheck the following:

- “Use zero based addressing”
- “Use Zero based bit addressing within registers”.



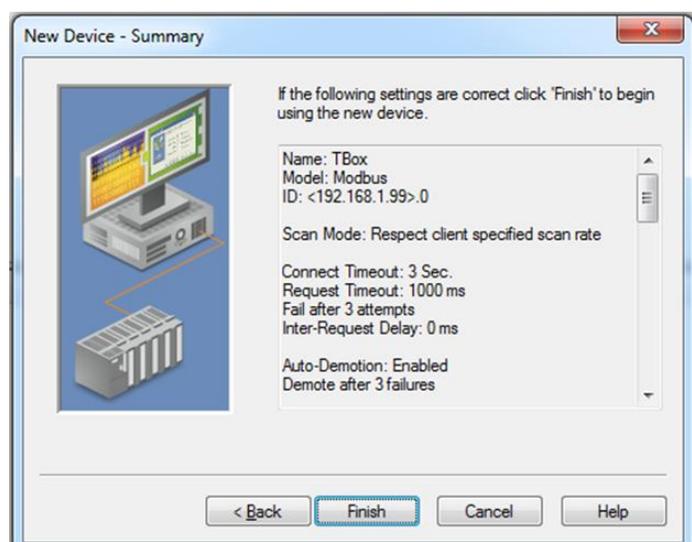
11. Data Encoding Settings – Uncheck “First word low in 32 bit data types”.



12. Variable Import Settings – This will remain unchanged.

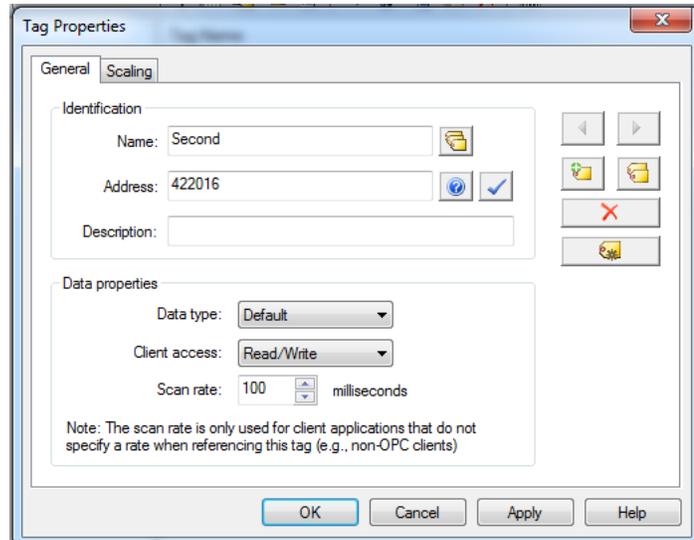
13. Error Handling – Default settings.

14. Confirm your settings on the summary screen and click finish.

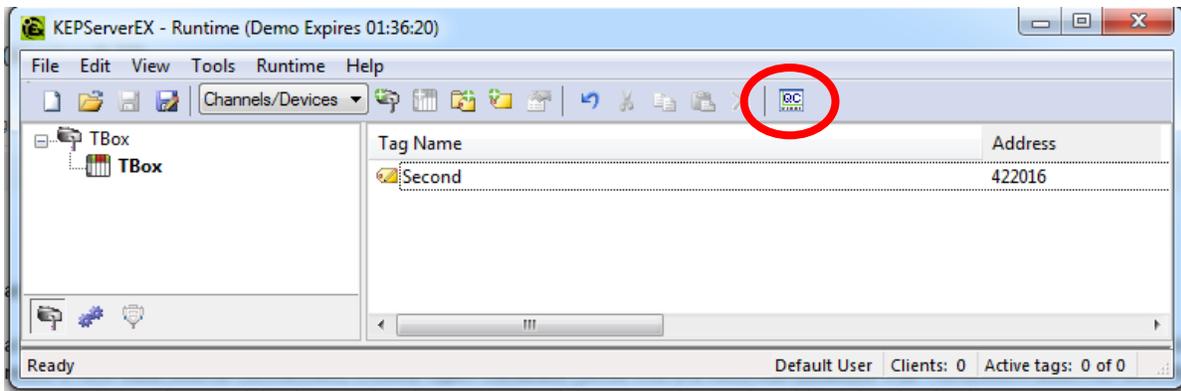


Section 3 - Add a tag

1. Click add a static tag to open the Tag Properties box.
2. Name the tag and give it an address using standard Modbus addressing. For this exercise we will be using the Second tag from the TBox at Modbus register 422016. Click OK.



3. Using the Quick Client you can test the communications to the tag you configured.



4. You should now see the Value change along with the second's clock in the TBox RTU/PLC.

