Industrial Networking

Tech Note 10 Cellular RTU Modbus I/O Transfers

Abstract:

This document provides a step by step procedure for configuring Modbus I/O transfer on the RAM to poll any Modbus Ethernet Slave device.

Products:

RAM Cellular RTU

Use Case / Problem Solved: Short Description

The RAM Cellular RTU can be used as a Modbus Data Concentrator. This document steps through the configuration one I/O Transfer (Modbus Write) enabling the RAM to move data to and from any Modbus Ethernet Slave device. Many Transfers can be added to meet the application requirements (Read & Write transfers). Data that is gathered by the RAM can then be used in a variety of application scenarios including and not limited to:

1. Easy remote connectivity and monitoring
2. Transferred as DNP3 data
3. Controlled using the Event Engine
4. Used for Alarming and Notification (Email/SMS)

Required Software:

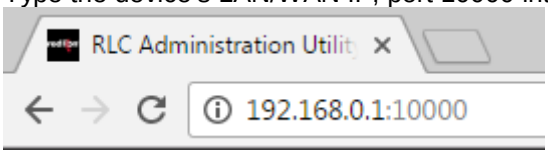
Web browser

Required Firmware:

Any 4.xx firmware

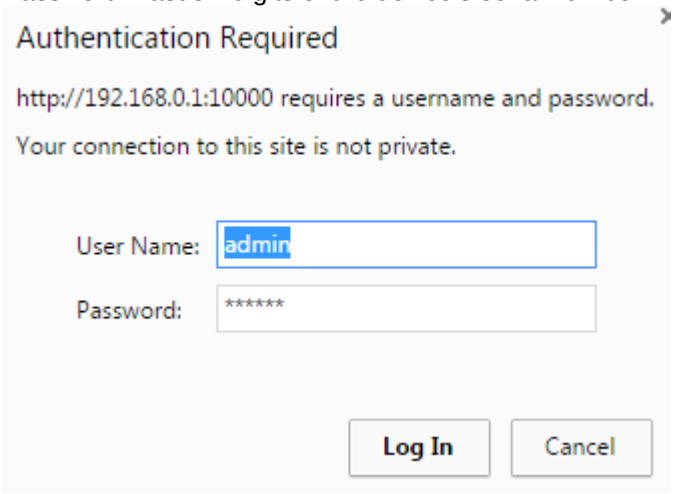
Log into the RAM Web Browser

a. Type the device's LAN/WAN IP, port 10000 into a web browser



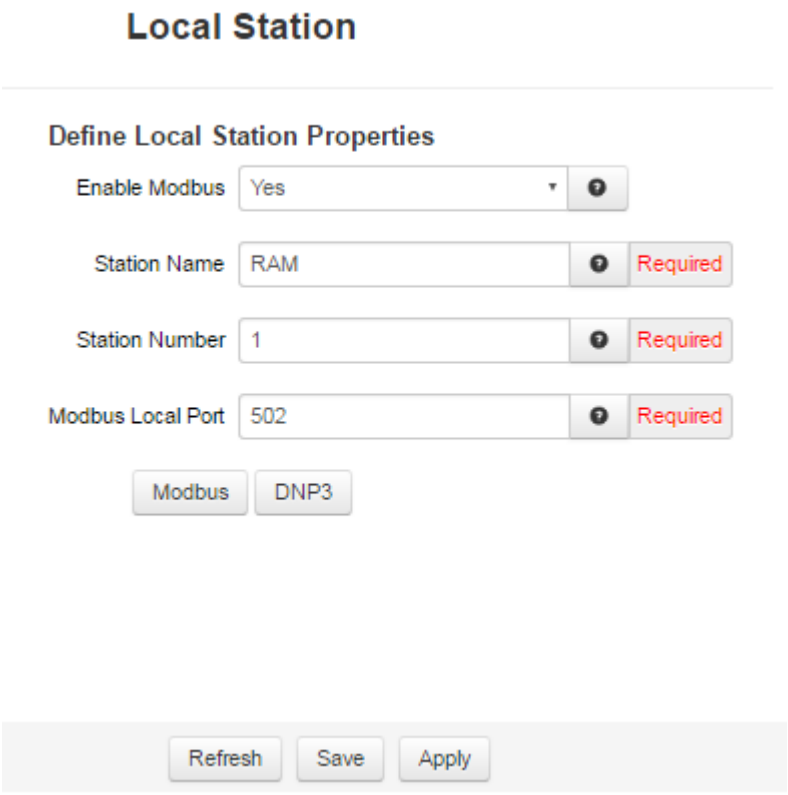
b. User Name: admin

c. Password: Last six digits of the device's serial number



Configure RAM Modbus Station Parameters

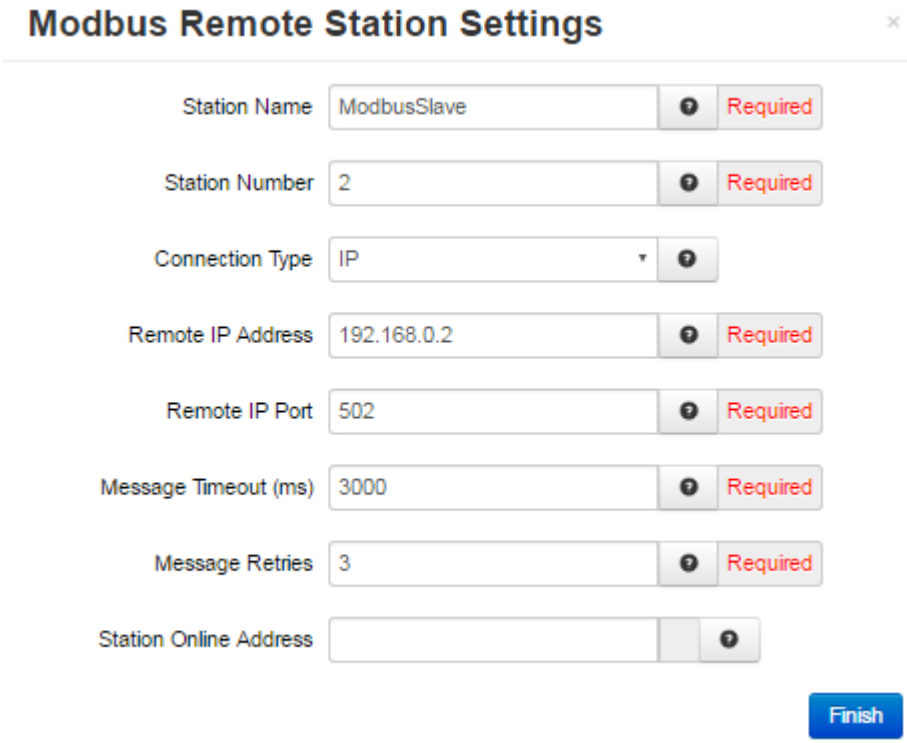
1. Navigate to: *Automation – Modbus – Local Station*
2. Set Enable Modbus to *Yes*
3. Define Station Name
4. Define Station Number
5. Define Modbus Local Port (Standard TCP Port for Modbus is 502)



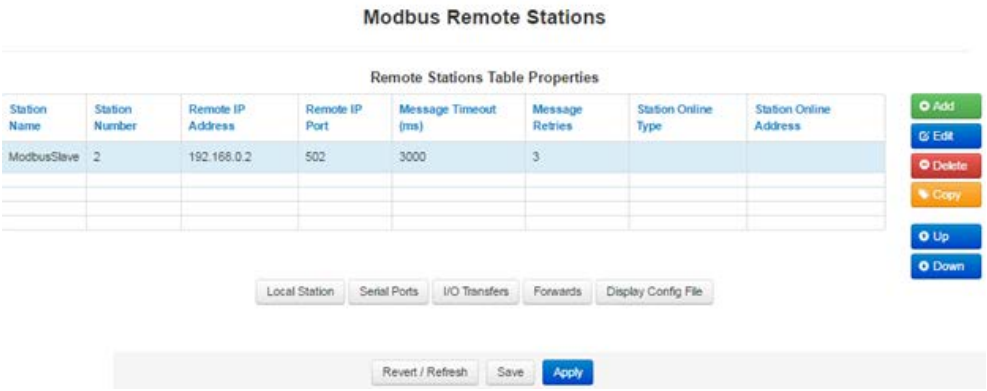
6. Click *Save*

Add a Remote Station Definition

1. Navigate to *Automation – Modbus – Remote Station*
2. Click *Add*
3. Enter Station Name for remote device
4. Enter remote device Station Number (Modbus station address)
5. Enter the Remote IP Address
6. Enter Remote IP Port (IP port 502 is the standard default Modbus)
7. Optionally enter the Station Online address



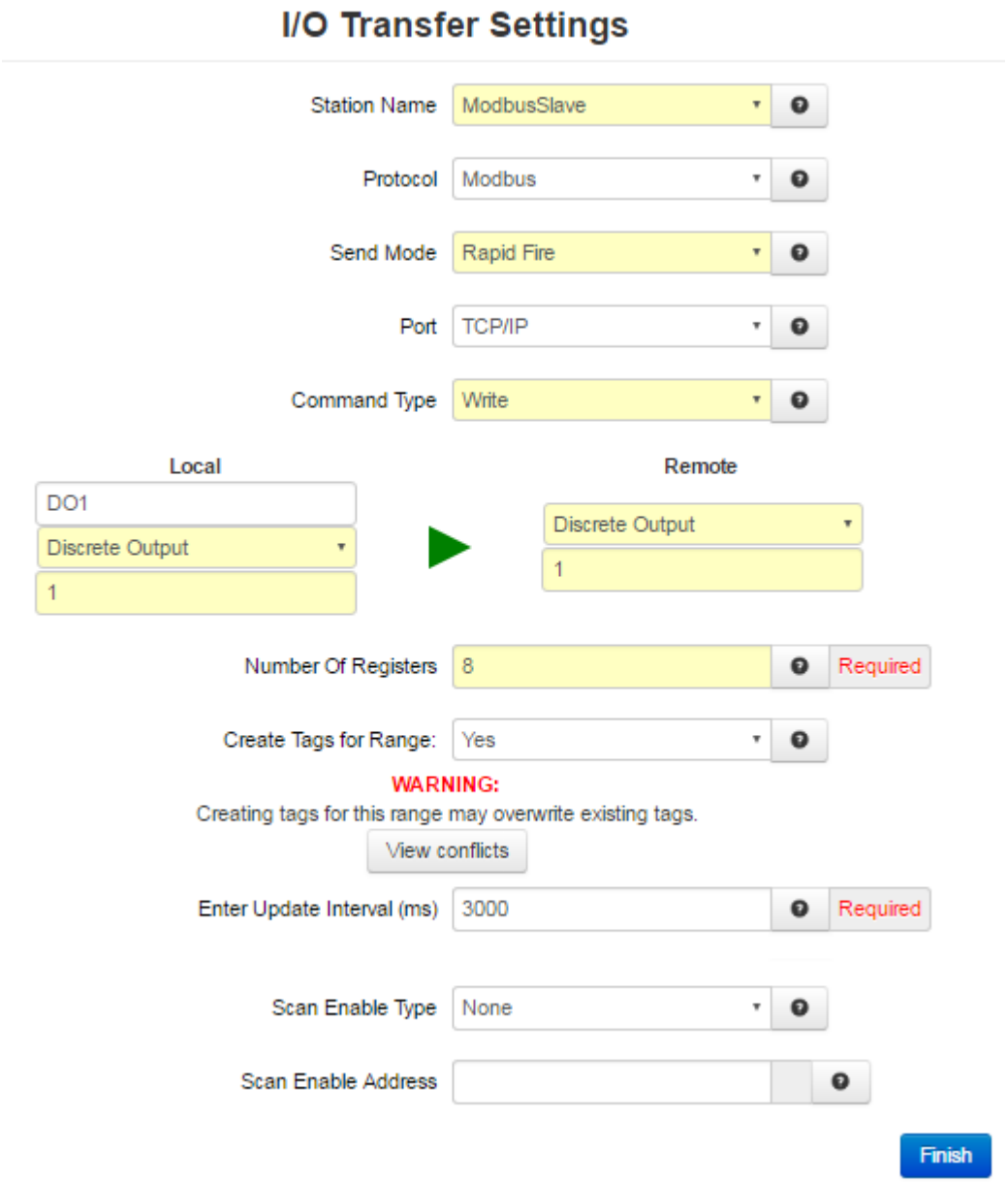
8. Select Finish. The Remote Station will appear in the table.



9. Click Save

Configure I/O Transfers

1. Navigate to *I/O Transfers* found at the bottom of the page or via *Automation - Modbus - I/O Transfers*
2. Click *Add*
3. Define the first I/O Transfer as needed, example below



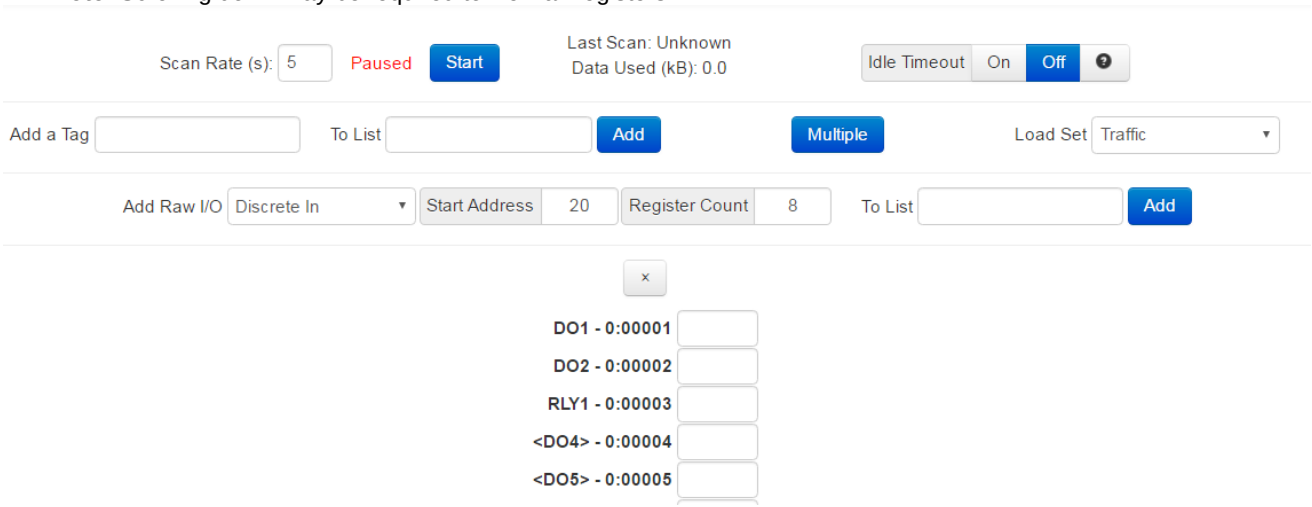
Note: the Scan Enable Address may be added to control when the IO Transfer is active or inactive. The Event Engine may be used to control this behavior.

4. Click *Finish*
5. Repeat steps 2 through 4 as needed

Testing: Use Test I/O to monitor values on RAM

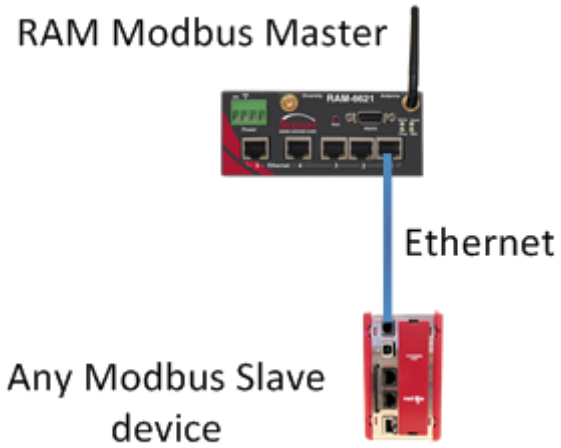
1. Navigate to Automation - I/O Setting - Test I/O
2. Add Raw I/O for both Local DO (1 > 8)
3. Select “Start”

Note: Scrolling down may be required to view all registers



Topology:

Note: This is a very simple topology used to define the setup for this document, however many network variations can be supported.



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