EtherNet-IP to RediGate Master

Introduction

In this tutorial, we will be demonstrating connectivity from a RediGate 120C to an Allen-Bradley 1769-L16ER-B1B CompactLogix processor over EtherNet/IP. This tutorial can be used to for connecting and RediGate with a device-level Ethernet port to any EthnerNet/IP enabled Allen-Bradley PLC (CompactLogix or ControlLogix). For MicroLogix, SLC, or PLC-5, see the DF1 Over Ethernet to RediGate Master guide.

See Protocol_EtherNetIP-Master for a discussion of the supported (and currently unsupported) features and data types of the Ethernet/IP driver. Contact Elecsys for assistance.

Pre-Requisites

1. A RediGate 120X or 400 series device with an open Ethernet port
2. Completion of the Getting Started Guide for your respective RediGate device (RediGate 100 or RediGate 400)
3. An Ethernet connection to an EtherNet/IP enabled PLC. You will need to configure your RediGate's local Ethernet port to be on the same network as the PLC, and you should confirm that you are able to ping the PLC through that port.

Instructions

1. Using ACE, open the default config you used in the "Getting Started Guide"
2. Download and open the Elecsys-EtherNetIP-Demo.xml from the http://partner.elecsyscorp.com site within the same ACE window as the configuration you used in your "Getting Started Guide".
   a. You will need to extract the .xml file from the .zip file you downloaded from the website. By default, ACE stores configuration files in the Documents\Elecsys\ACE\CFG folder, but you can store the configuration in any file location accessible by the ACE program.
   b. You cannot copy/paste nodes unless both configurations are **open within the same instance of ACE**. You can use the "Tile" buttons to have the windows automatically size themselves within the ACE program:
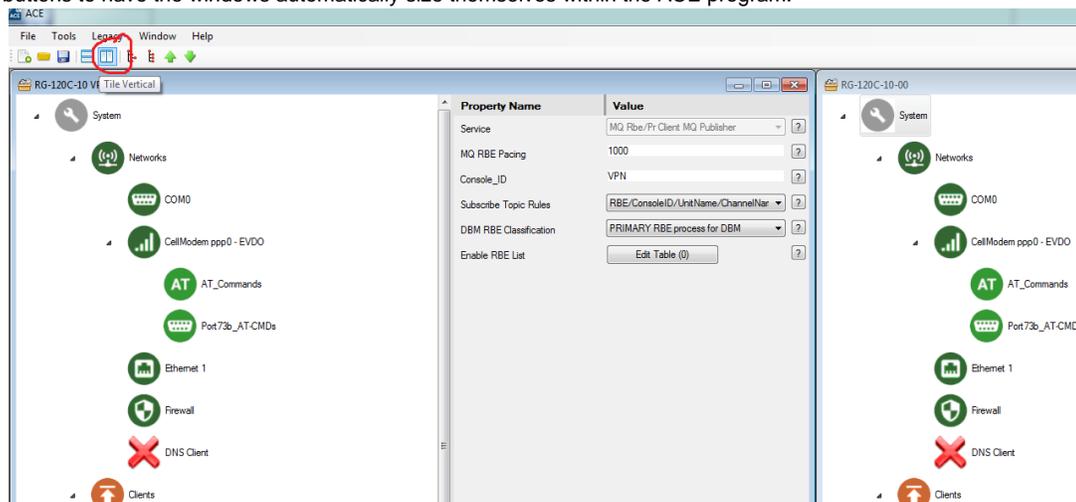

3. Copy the "Master Channel0" channel from the Elecsys-EtherNetIP-Demo.xml and paste the node into your configuration:
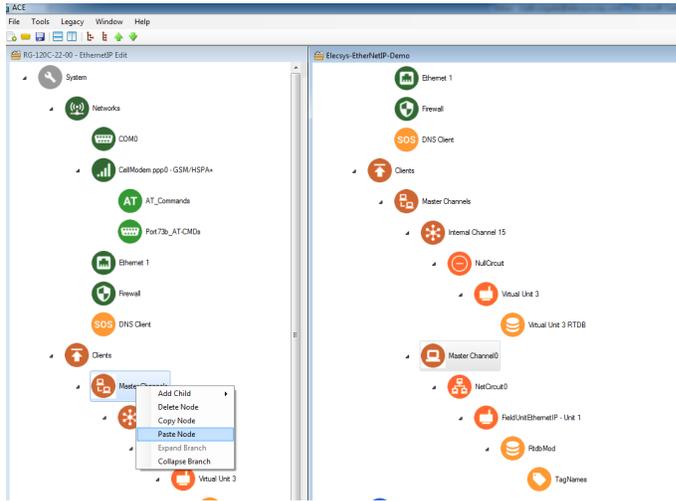
4. Edit the "NetCircuit0" Connect Table to have the IP address of the PLC you will be connecting to. Do not worry about the "Interface" column; it is only used for legacy protocols, not Ethernet/IP:
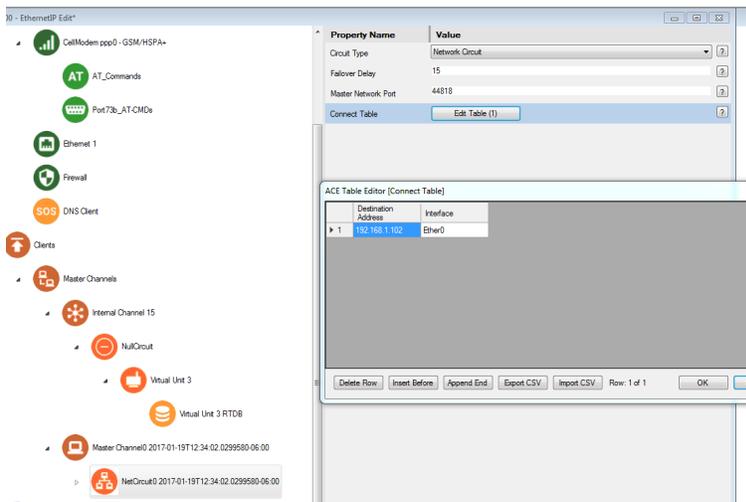

5. Under the "FieldUnitEthernetIP - Unit 1" object, edit the controller type and controller path to match that of your PLC:
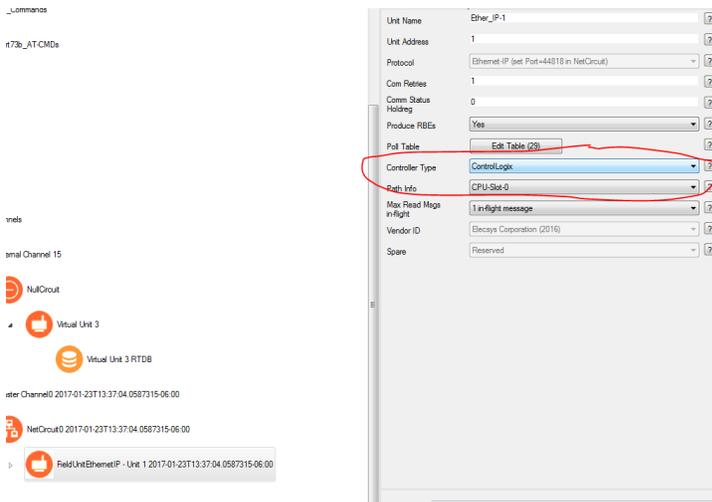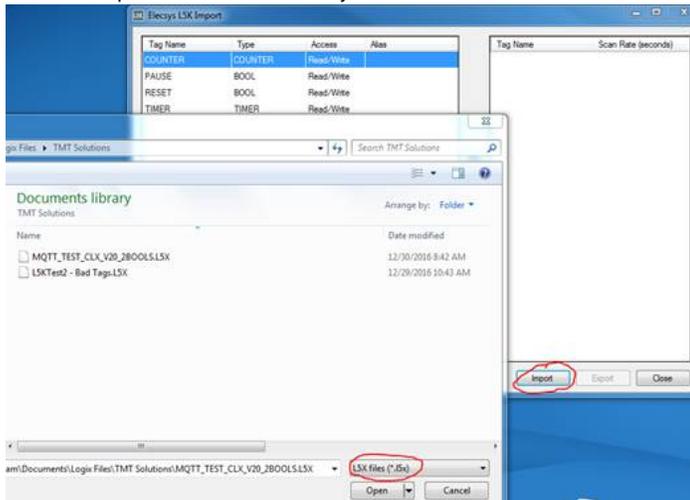

6. Generate the SCANS, POLLS, RTDB, and TAGS .csv files by using the L5K Import Tool
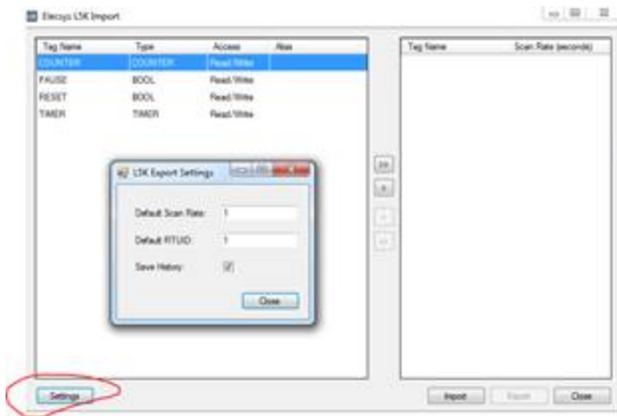
a. Download, extract, and install the "L5K Import Tool" software from the http://redigate.elecsyscorp.com/software
b. Save the .ACD or .L5K file of the controller you are working on as a .L5X file:
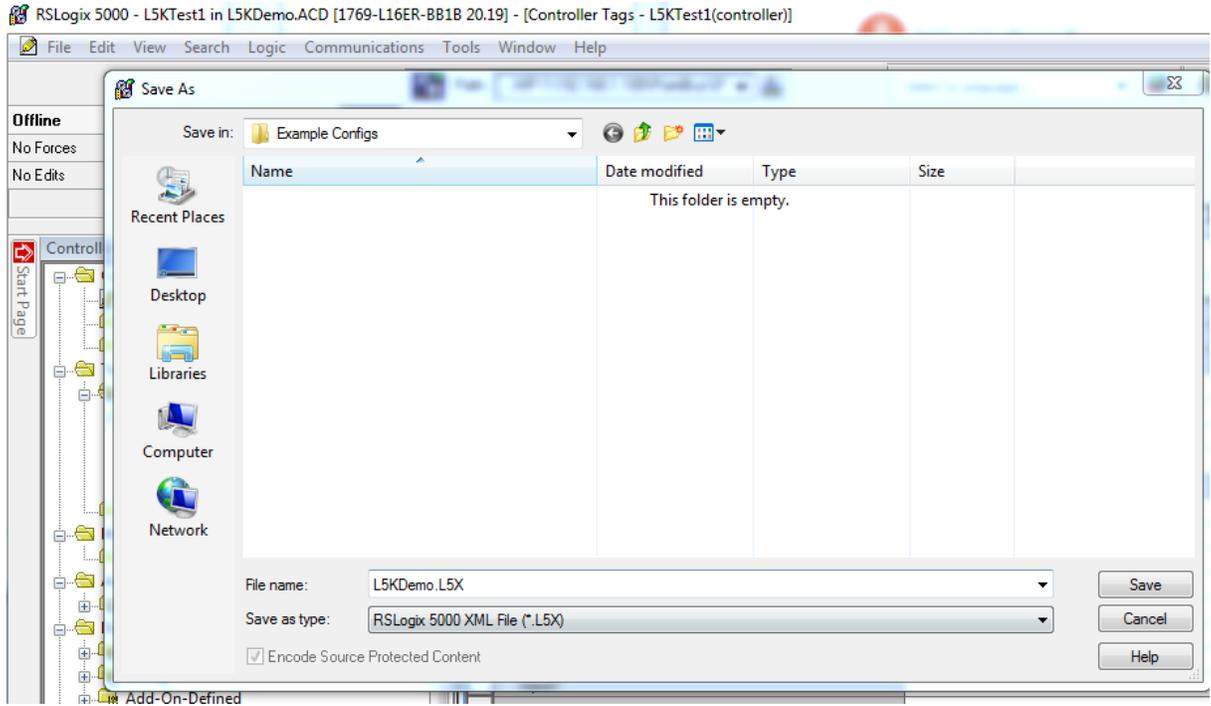
c. Click the "Import" button and select your .L5X file:
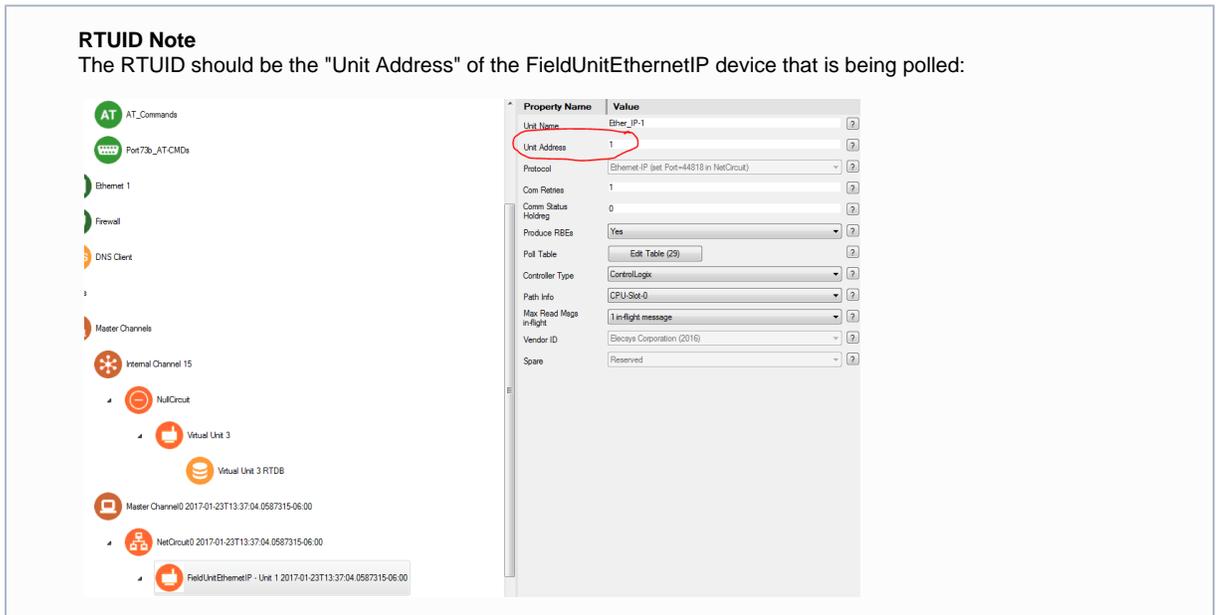

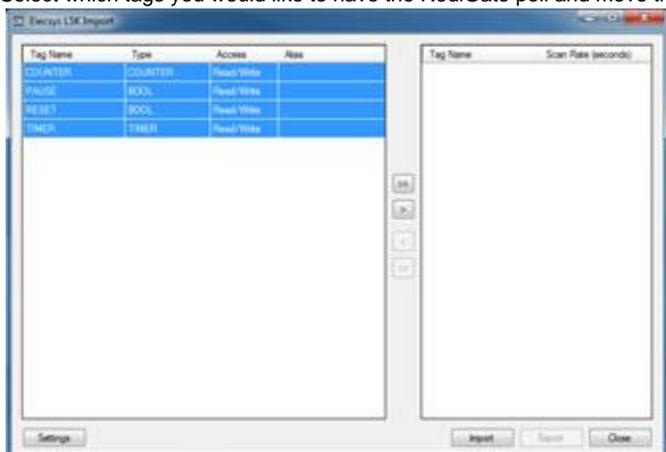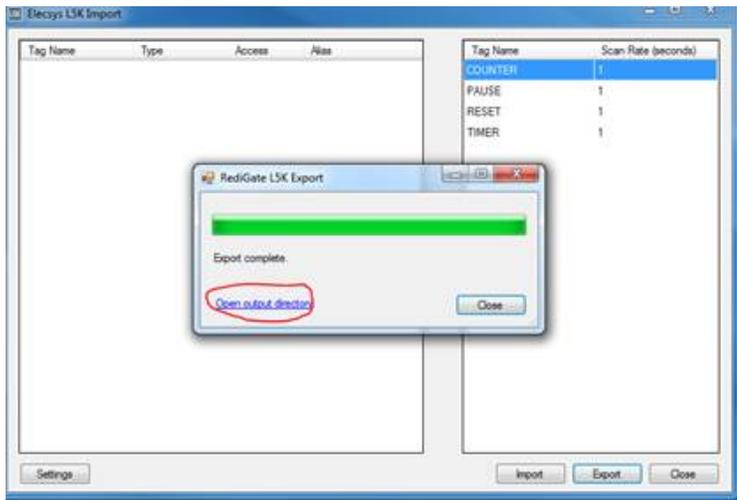d. Click the "Settings" button to set the scan rate and RTUID:

RTUID Note
The RTUID should be the "Unit Address" of the FieldUnitEthernetIP device that is being polled:
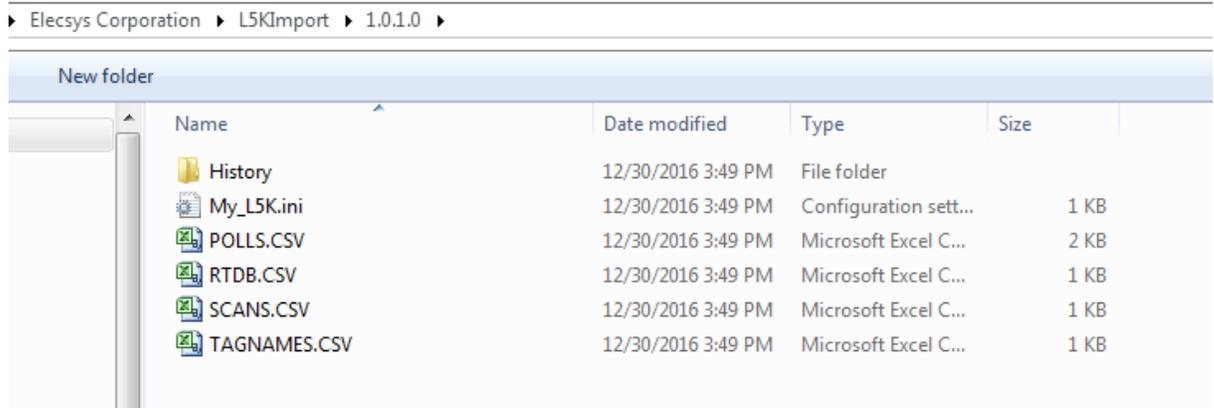

e. Select which tags you would like to have the RediGate poll and move them over to the right hand section of the window:
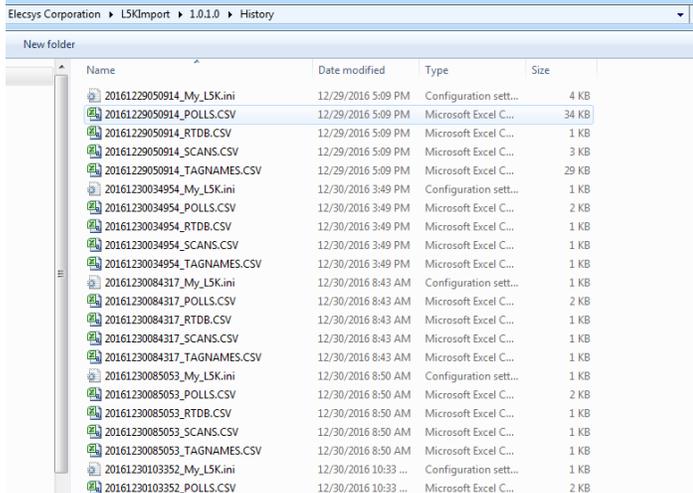

f. Click "Export" and navigate to the folder where the .csv files are saved:
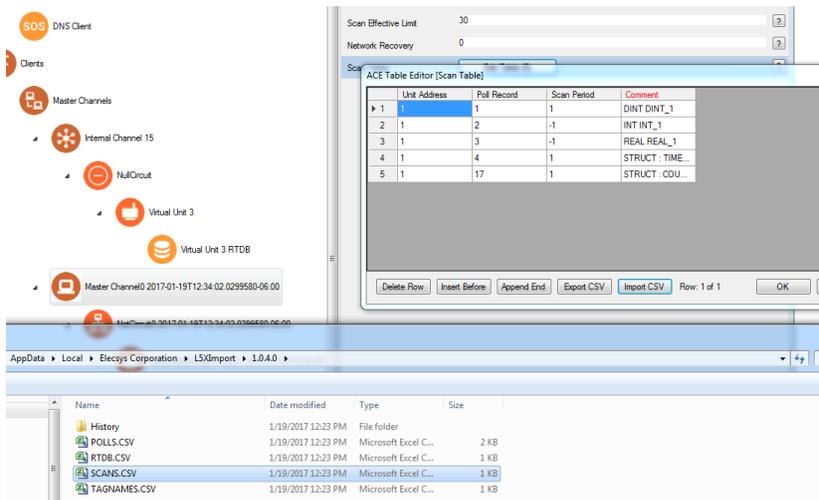
g. In this folder you will find the 4 CSV files that will need to be imported into your ACE configuration:


h. You will also find a "History" folder that contains copies of the .csv files that the tool has generated over time:


7. In ACE, select your MasterChannel0 Scan Table, and import the SCAN.csv file that was generated by the L5K Import tool:

8. Repeat this importing step for the following tables
    a. FieldUnitEthernetIP - Unit 1 Poll Table (POLLS.CSV)
    b. RtdbMod Database Definition (RTDB.CSV)
    c. TagNames Tag Names (TAGS.CSV)
9. Once all of the CSV's are imported, upload the configuration to the device (File Upload XML to Device)
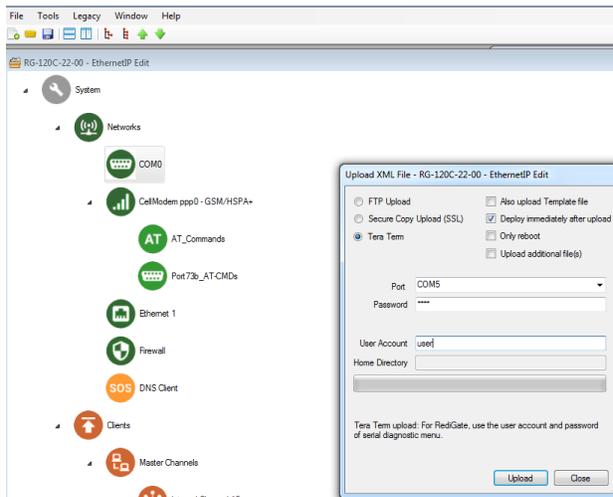
10. Create a Putty session into the RediGate to confirm that the RediGate is successfully polling the tags. You may get some errors on start-up, but if you see the Poll Count field incrementing, your RediGate is configured correctly.
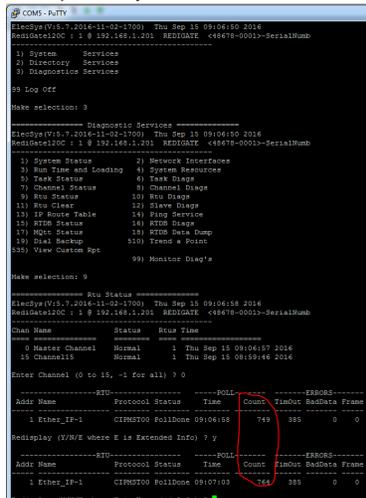
Congratulations, you have successfully configured your RediGate to talk to an EtherNet/IP device. If you are interested in publishing your data to a cloud IoT platform, download one of our "IIoT Platform Quick Starts" from http://partner.elecsyscorp.com/examples/.