Serial-to-Ethernet Manual

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1   What is the Serial-to-Ethernet Function?

The Serial-to-Ethernet function for the JNIOR is a software application that runs on the JNIOR and allows the JNIOR to act as a converter between a serial device connected to the JNIOR and a remote application communicating to the JNIOR via the Ethernet network using TCP/IP. The serial to Ethernet conversion is bi-directional meaning that the serial device can communicate to the PC and the PC can communicate to the serial device. The JNIOR acts as a converter in between the serial device and the PC sending and receiving packets of information between the two devices.

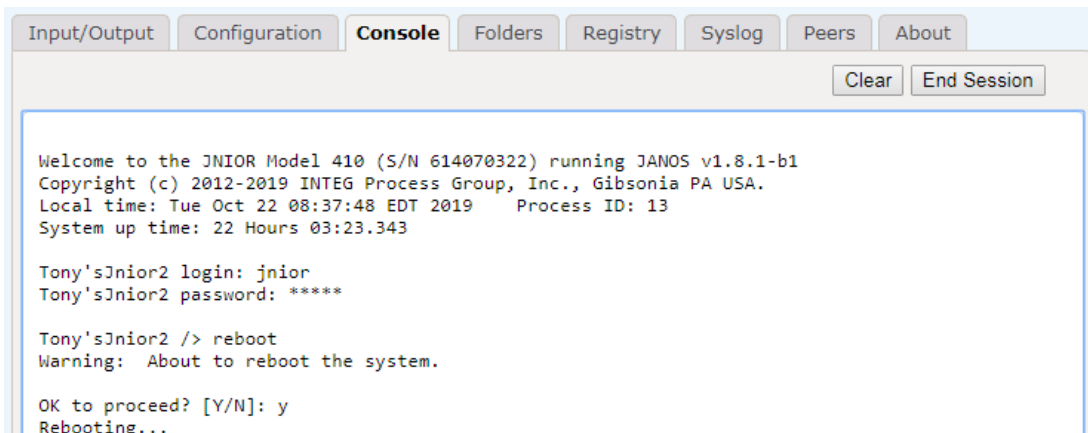# 2   The Purpose of the Serial-to-Ethernet Function

The Serial-to-Ethernet function can be used for a variety of applications and adds value to these applications when compared to standalone serial converters because of the digital and analog I/O available with the JNIOR. The user can integrate new and legacy serial devices into their application as well as utilize the JNIOR I/O.

3 Activating the Serial-to-Ethernet Software

The Serial-to-Ethernet software is pre-installed on all JNIORs. To activate the software so that it runs on boot up, please launch the main JNIOR web page in the JNIOR Support Tool, go to the Configuration tab and under the Applications section should the pre - downloaded applications should be. Check the Serial-to-Ethernet Converter box. If you don't have, or are unfamiliar with the JNIOR Support Tool, please look at its manual located on INTEG's website.

Input/Output	**Configuration**	Console	Folders	Registry	Syslog	Peers	About

Enable/Configure Registered Applications

Display
Labels
Inputs
Counters
Outputs
Metering
Serial I/O
Applications
Mail-Account
Mail-Profiles
Events
Network
Security
Telnet
WebServer
FTP
Protocol
Modules

☐ **Serial Control Plus 5.0**
☑ **Serial-to-Ethernet Server 6.0**
☐ **Task Manager 7.0**
☐ **Modbus Server 1.7 (Slave)**
☐ **SNMP 2.4.1**
☐ **Slave Service 1.5**
☐ **Cinema 3.3.0**
☐ **MQTT 2.0**

Mouseover and use F1 for context sensitive help. Current topic: Run/ModbusServer
Tue, 22 Oct 2019 08:43:32 EDT   Dynamic Configuration Pages (DCP) v2.3

Once you've selected the Serial-to-Ethernet application, you'll select the Console tab, start a session, and login with the username and password 'jnior'. After the login enter reboot and it'll prompt you if you wish to reboot, which then 'y' should be entered. The jnior will reboot, and once its done the Serial-to-Ethernet application should be running.

Input/Output	Configuration	**Console**	Folders	Registry	Syslog	Peers	About

Clear | End Session

```
Welcome to the JNIOR Model 410 (S/N 614070322) running JANOS v1.8.1-b1
Copyright (c) 2012-2019 INTEG Process Group, Inc., Gibsonia PA USA.
Local time: Tue Oct 22 08:37:48 EDT 2019     Process ID: 13
System up time: 22 Hours 03:23.343

Tony'sJnior2 login: jnior
Tony'sJnior2 password: *****

Tony'sJnior2 /> reboot
Warning:  About to reboot the system.

OK to proceed? [Y/N]: y
Rebooting...
```

4 Configuring the Serial-to-Ethernet Software

Once the Serial-to-Ethernet program is running, it will be ready to accept clients on the default Ethernet TCP/IP port of 9201. What this means is that the serial device connected to the JNIOR serial port must work with set serial settings otherwise you will have to change the settings on either the JNIOR or your device. Any application running on a PC or other remote device that wants to interact with the serial device connected to the JNIOR via the Ethernet using TCP/IP will need to make a connection to the JNIOR using port 9201. This port can also be changed.
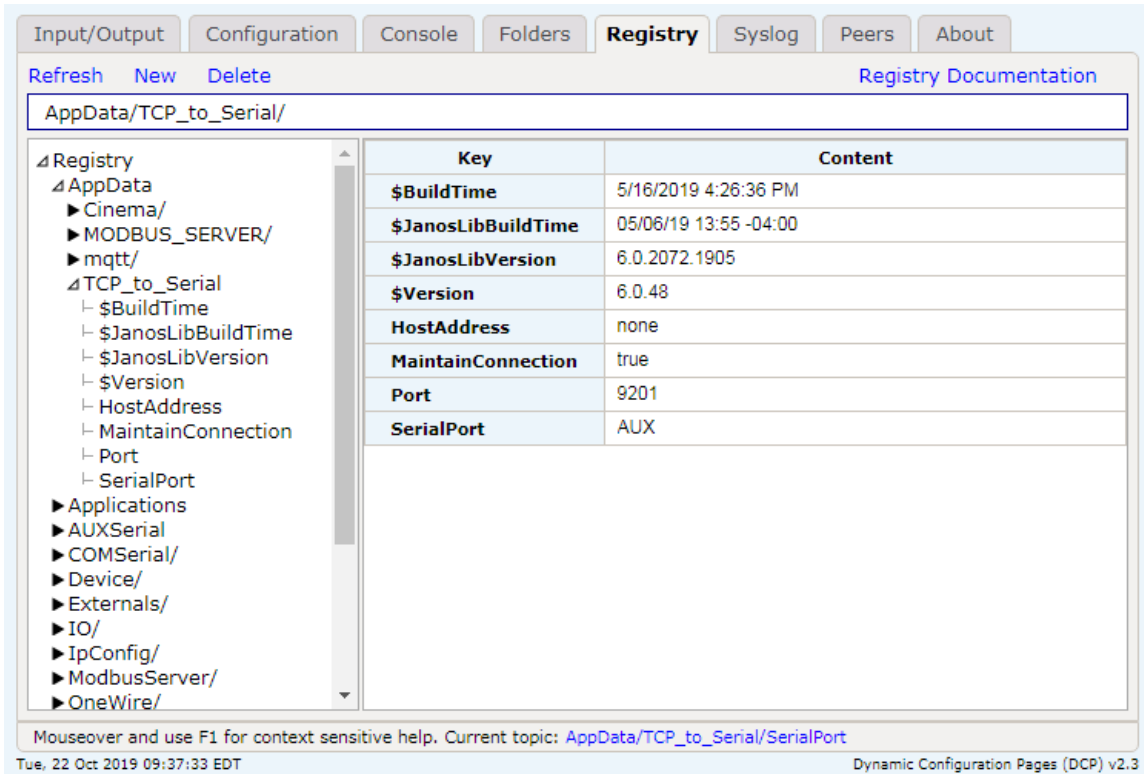
The Registry tab on the JNIOR Main Web page can be used to change any settings for the Serial-to-Ethernet software program. After you enable the Serial-to-Ethernet program and it is running after a reboot, you can edit some keys in the serial connection located in the AUXSerial/ Registry as shown below:

| Input/Output | Configuration | Console | Folders | **Registry** | Syslog | Peers | About |

Refresh   New   Delete   Registry Documentation

AUXSerial/

⊿ Registry		Key	Content
▶ AppData		**Baudrate**	19200
▶ Applications		**Databits**	8
⊿ AUXSerial		**Parity**	0
├ Baudrate		**Stopbits**	1
├ Databits			
├ Parity			
├ Stopbits			
▶ COMSerial/			
▶ Device/			
▶ Externals/			
▶ IO/			
▶ IpConfig/			
▶ ModbusServer/			
▶ OneWire/			
▶ Peers/			
▶ run/			
▶ WebServer/			
├ $BootTime			
├ $LastNtpSuccess			
├ $Model			
├ $SerialNumber			
├ $Version			

Mouseover and use F1 for context sensitive help. Current topic: AppData/TCP_to_Serial/SerialPort

Tue, 22 Oct 2019 09:27:54 EDT   Dynamic Configuration Pages (DCP) v2.3

The rest of the keys are located in the TCP_to_Serial/Registry to change the remaining settings for the serial connection as shown below (please ignore any other registry keys as they are for system operation):

To modify any of the above keys, click on the appropriate key in the Registry Editor window and then the Edit Key button. Make any changes and click the Save button.

The valid settings are as follows:

Key Name	Valid Settings	Comments
Baud	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	No reboot required
DataBits	7 or 8	No reboot required
Parity	0, 1, or 2 where: 0 = no parity 1 = odd parity 2 = even parity	No reboot required Supports: 8 databits, 1 stop bit 7 databits, 2 stop, no parity 7 databits, 1 stop, with parity
Port	Any valid TCP port not already used	The JNIOR must be rebooted for this change to take effect.
Serial Port	AUX or RS232	Reboot required – defines the serial port on the JNIOR that the serial device is connected to. (Please see Section 7 of this manual for important information.)
StopBits	1 or 2	No reboot required

5 Serial-to-Ethernet Software

After the Serial-to-Ethernet software is running and properly configured, you may be able to test the connection to your serial device using the command line in the JNIOR Support Tool.

To connect to the Serial-to-Ethernet application via the Ethernet (TCP/IP), open the command line by going to the tools bar in the support tool and selecting the command line option with the correct setting as set in the Registry tab in the JNIOR Support Tool.

Once connected, you will see the command line session will be empty and waiting for commands. You can now interact with your serial device as if it were connected via the serial cable directly to your PC.

Third Party Packages

Third party packages, such as Serial/IP Redirector from Tactical Software can be used between your program running on a PC and the JNIOR serial server running on the JNIOR. The set-up screen for Serial/IP Redirector would look as shown below where the server IP address is your JNIOR IP Address and the port is the port you are using with 9201 being the default.

6 Options

The default setting for the Serial-to-Ethernet software is to utilize the Auxiliary Serial port located along the top edge of the JNIOR. However, it is possible to change this setting to utilize the RS-232 serial port located along the bottom edge of the JNIOR. It is important to understand that the primary purpose of the RS-232 port is to act as the command console for the JNIOR. The command console through the RS - 232 is supposed to allow the user to connect to the JNIOR like it does in the console tab on the Support Tool.

If you desire to use this port for your serial device, then you must start the Serial-to-Ethernet software as described above so that the Registry Keys are displayed. Using the main JNIOR web page, edit the SerialPort key and change the value to RS232. You must reboot the JNIOR (a soft reboot via the About tab or a Telnet window is preferred) and when it finishes, the Serial-to-Ethernet software will now use the RS-232 port.

IMPORTANT: Every time the JNIOR reboots, it waits 1 minute before taking over the RS-232 port for the Serial-to-Ethernet application. This would allow you some time to connect to the JNIOR via command line for an emergency where you no longer knew the JNIOR IP address and had no other way to connect to the JNIOR. You would have 1 minute to log in and type 'ps' at the prompt to list all the running processes and then type 'kill X' where X is the process number for the serialethernet.jnior program.

The program will stop immediately and you will have time to change your ipconfig or go to the Command Line registry editor and delete the Run key for the Serial-to-Ethernet software program. When the Run key is deleted, the program will no longer automatically run after boot.

NOTE: You can have both Serial-to-Ethernet and Serial Control (see the Serial Control Manual) running on the same JNIOR at the same time as long as they are using different serial ports. You must start the application first that will be using the RS232 port and change its default setting from AUX to RS232. Then you can start the other application because it will now be able to run and use the Auxiliary Serial port. Having both programs running at the same time with both of them configured for the Auxiliary Serial port could cause unexpected operation of your JNIOR.

Summary

Thank you for purchasing the **JNIOR**. Hopefully this manual made the getting-to-know process of your new **JNIOR** very quick and easy. The **JNIOR** has many more wonderful tools and features available, and are explained in detail in the supplied documents.

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