Registered Office

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Company Details:

Innon Energy Ltd.
VAT.Nr: **941 2897 05**
Company Number: **6740177**

AX Driver: ssiTrendTcpIpSerial v1.0.0.0

Summary:

This manual covers the installation process of the v1.0.0.0 Trend gateway driver for the Niagara based platforms to v3.8.
This current release supports both serial RS232 and Ethernet port integration.
The current devices supported by this driver are IQ1xx/IQ2xx/IQ3xx/IQ4xx (via the appropriate gateway)
Subsequent releases of this driver will have support for both LON and BACnet terminal controllers and also the auto device and point discovery feature including schedules, but for now this process requires manual setup which is detailed below:

Index:

Author: M Langley
Rev: 1.1
Date: 3rd September 2015

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1. Driver installation

- Please download the latest Jar file from the following link:
  http://www.innon.co.uk/wp-content/uploads/2015/07/ssiTrendTcpIpSerial.zip
- Once the file has been downloaded please unzip and place the jar file in the Modules folder contained in the Niagara platform that you are currently using:
  C:\Niagara\Niagara-3.8.38\modules
- If the platform you are using is already running then please shutdown and restart to refresh the Niagara registry.
- Once the platform has been restarted and you are connected to the Jace controller you wish to engineer then open the platform on your device and double click on the Software Manager tab to launch the driver management application.
- Now scroll down the driver list until the following driver is located:

ssiTrendTcpIpSerial	-	Smart Services Int. SARL. 1.0.0.0	Not Installed

- Click on the driver above so that it is highlighted and then press the install button followed by the commit button
- The driver will then be sent to the target Jace controller and the driver list will refresh to then confirm installation.

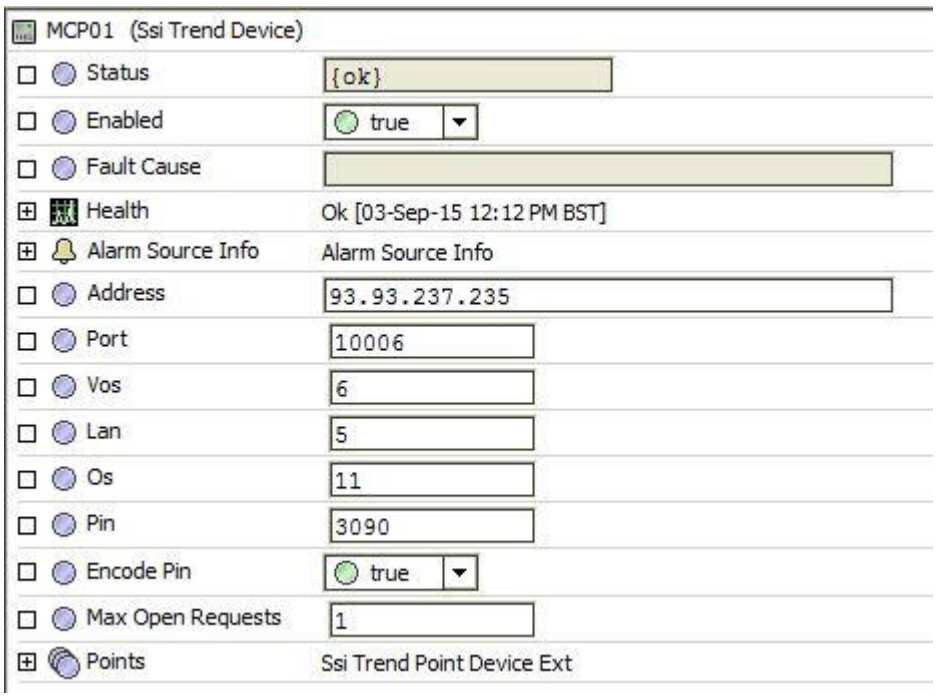
2. Adding the Trend Network to the Station Network

- Please open the station on the remote Jace controller and navigate to the network icon then double click to launch the Driver Manager
- Now press the New button and select the following driver and press OK:

3. Adding a controller to the Network

Please note. the auto discover feature for the Trend Nodes and points has not be enabled in this current release as there are hundreds of points that could be theoretically mapped-in, however this is something we are working on at the moment so we will have auto discovery for the common points such as Knobs, Switches Sensors etc. enabled on the next release but In the meantime please use the examples below to manually configure them.

Once you have added a controller to the network then the controller details need to be setup as follows:



The IP "**Address"** is the Gateway address as in EINC/3 Extend/IQ4NC etc.
The "**Port"** is the virtual serial port set up in the gateway i.e. 192.168.255.1:10001
The "**Vos"** is the virtual CNC port number in this case is 1
The "**Lan"** is set to 0 if the controller is on the same virtual Lan as the gateway otherwise this is the virtual Lan that the controller is assigned to.
The "**OS"** is the controller number you are trying to connect to.
The "**Pin"** is the outstation pin this needs to be set otherwise the coms requests will be rejected by the controller.

All of this information can be found using SET IPTool if not known

4. Adding points to a controller

When adding a new point 

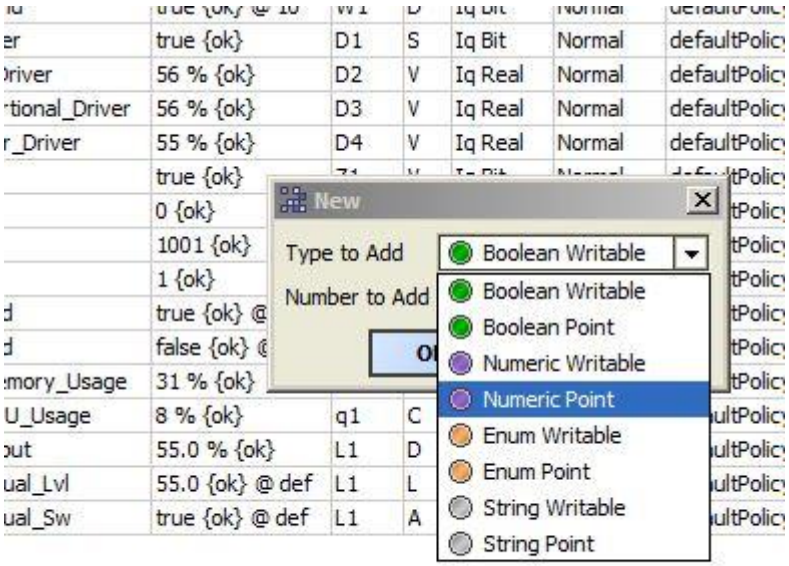
to the controllers please make sure that they are selected as follows:

Sensors and Analogue Drivers: = “Numeric Point”

Digital Inputs and Digital Drivers: = “Boolean Point”

Knobs and Analogue Nodes: = “Numeric Writable”

Switches and Digital Nodes: = “Boolean Writable”



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Below is a sample of the manual point setup for IQ1 1x/ 2x/ 3x/4x controllers:

Database

Name	Out	Item	Id	Iq Type	Poll Rate	Tuning Policy Name
Analogue_Sensor	55.80 °C {ok}	S1	V	Iq Real	Normal	defaultPolicy
Digital_Input	true {ok}	I1	S	Iq Bit	Normal	defaultPolicy
Digital_Sensor	1 {ok}	S2	V	Iq Real	Normal	defaultPolicy
Analogue_Node	50.0 {ok} @ 10	A1	V	Iq Real	Normal	defaultPolicy
Knob	55.8 {ok} @ 10	K1	V	Iq Real	Normal	defaultPolicy
Switch	true {ok} @ 10	W1	D	Iq Bit	Normal	defaultPolicy
Digital_Driver	true {ok}	D1	S	Iq Bit	Normal	defaultPolicy
Analogue_Driver	56 % {ok}	D2	V	Iq Real	Normal	defaultPolicy
Time-Proportional_Driver	56 % {ok}	D3	V	Iq Real	Normal	defaultPolicy
Raise-Lower_Driver	100 % {ok}	D4	V	Iq Real	Normal	defaultPolicy
Timezone	true {ok}	Z1	V	Iq Bit	Normal	defaultPolicy
Counter	0 {ok}	G1	R	Iq Real	Normal	defaultPolicy
HoursRun	996 {ok}	G2	O	Iq Real	Normal	defaultPolicy
Function	1 {ok}	G3	D	Iq Real	Normal	defaultPolicy
Bit(a)	true {ok} @ 10	B1	S0	Iq Byte	Normal	defaultPolicy
Bit(b)	false {ok} @ 10	B1	S1	Iq Byte	Normal	defaultPolicy
Current_Memory_Usage	32 % {ok}	q1	M	Iq Real	Normal	defaultPolicy
Current_CPU_Usage	3 % {ok}	q1	C	Iq Real	Normal	defaultPolicy

There is basically no limit to what you can monitor or adjust within the Trend strategy so this can be for any points within the controller even Loop variables, all you need to do is insert the text coms Id such as “L1 D” which will give you the output status of Loop 1 or change the manual levels “L1 L” please see example below:

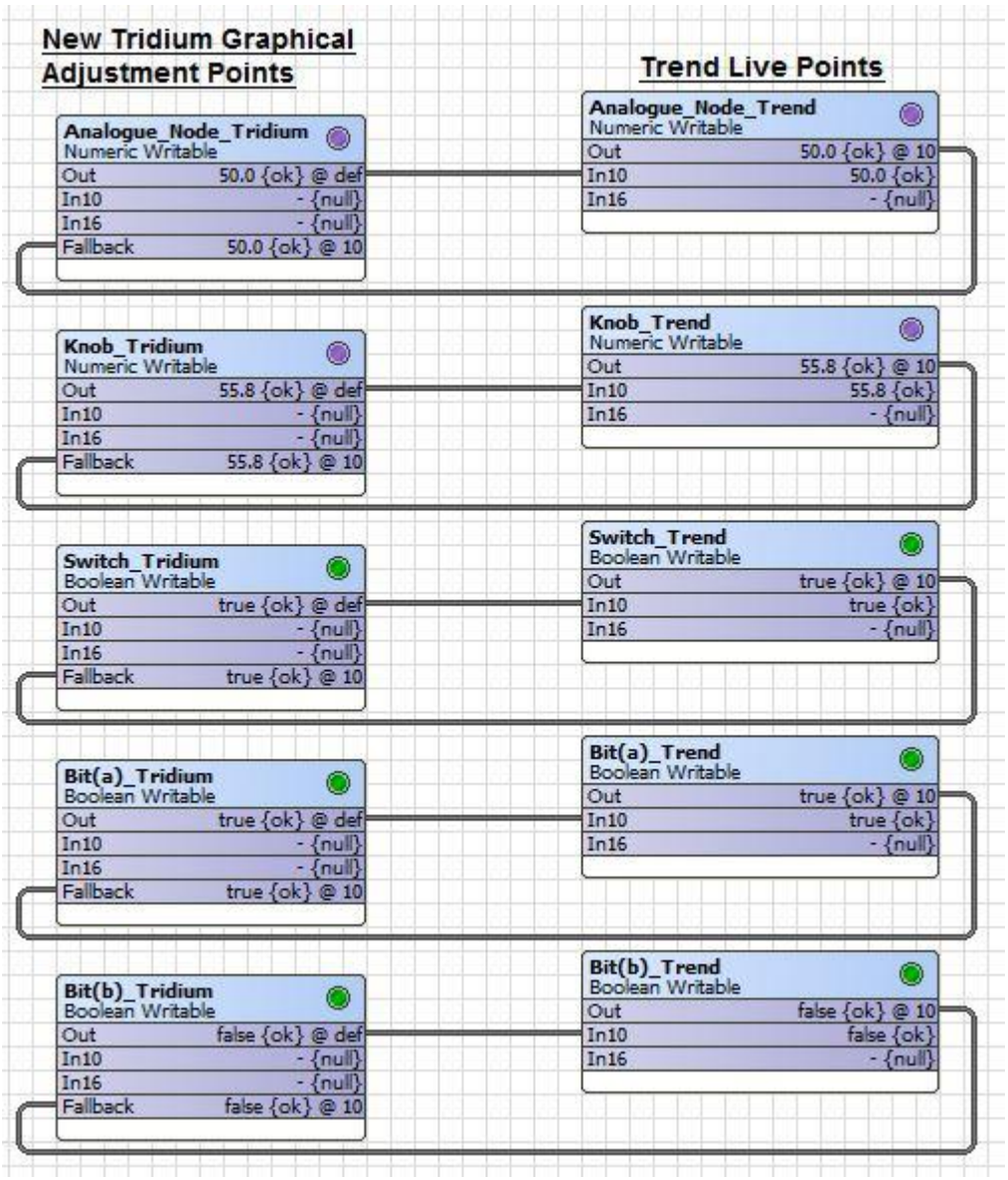
Loop1_Output	55.0 % {ok}	L1	D	Iq Real	Fast	defaultPolicy
Loop1_Manual_Lvl	55.0 {ok} @ def	L1	L	Iq Real	Normal	defaultPolicy
Loop1_Manual_Sw	true {ok} @ def	L1	A	Iq Bit	Normal	defaultPolicy

Please note that the text coms vary for the older IQ 1x/2x controller types so please refer to the Trend text coms manual if you require monitoring of the statuses of Function or Logic modules within these controller types:

5. Set-point Synchronisation

Any knobs/ switches and writable points that you configure y will need to have the following strategy to synchronise the values between the Trend controller and the Tridium controller.

This allows set-points to be adjusted at either device Trend/Tridium without them being overridden by each other, it is advised also that you do not enable these points in the Tridium controller until the synchronisation strategy (example below) has been complete otherwise the remote Knobs/switches/nodes in the Target Trend controller will be prematurely overridden which may have an adverse effect on the control of the plant:



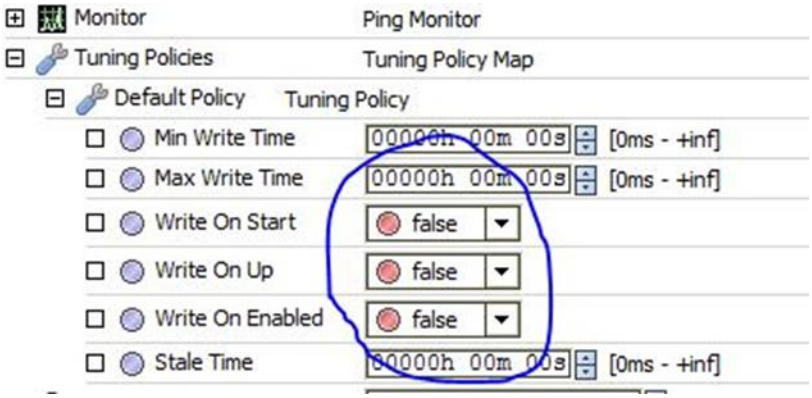
6. Driver Tuning tips and Tricks

On larger site where polling of multiple controllers is required it is then necessary to adjust the tuning policies of both the controllers and point to prevent coms saturation on the network, this is not usually a problem where the topology is pure IP and no gateways or Trend current loop Lans are involved if so please use the following guides:

a) In the Trend driver properties set the refresh times as below:

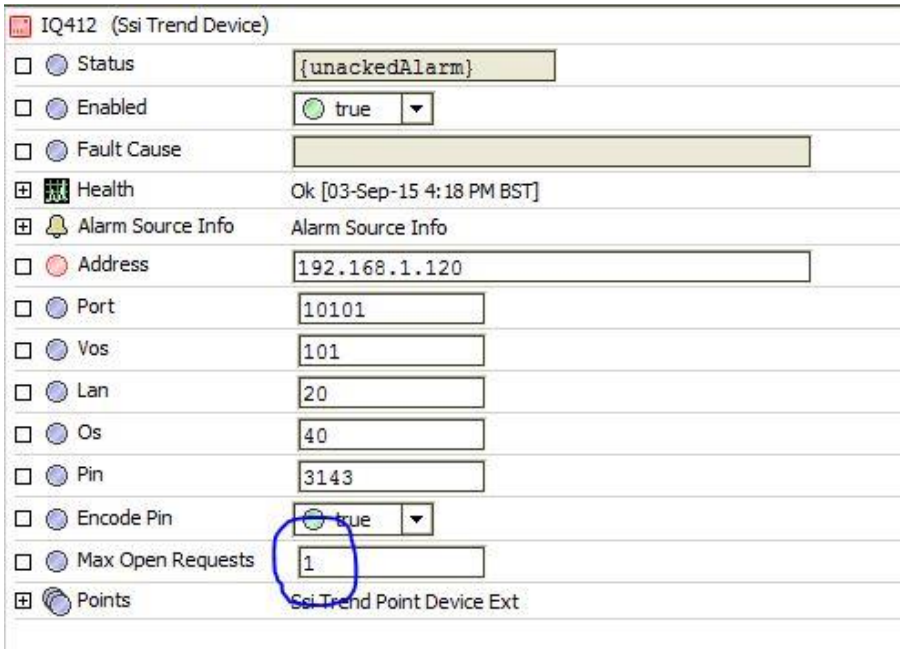
Please note. In the case of sites with multiple networks and gateways the "Change Delay" and "Message Timeout" may need to be set as high as 1 minute to prevent premature timeouts on the Trend diver.

b) Change all of the Trend driver Tuning policies to "False" as below:

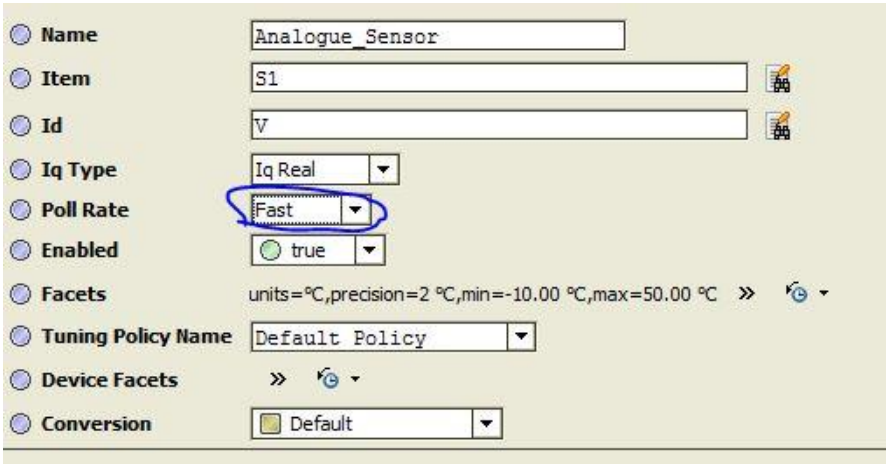


This will also prevent premature coms failure during commissioning and power cycles.

c) On each of the controller properties set the "max open requests" to 1 as below:



d) Set the "Poll Rates" to Fast only on the essential sensors and alarm points as below:



If all of the above policies have been applied and there are still problems with time-outs/refresh failures on the points then there are additional steps that can be taken highlighted in the next section.

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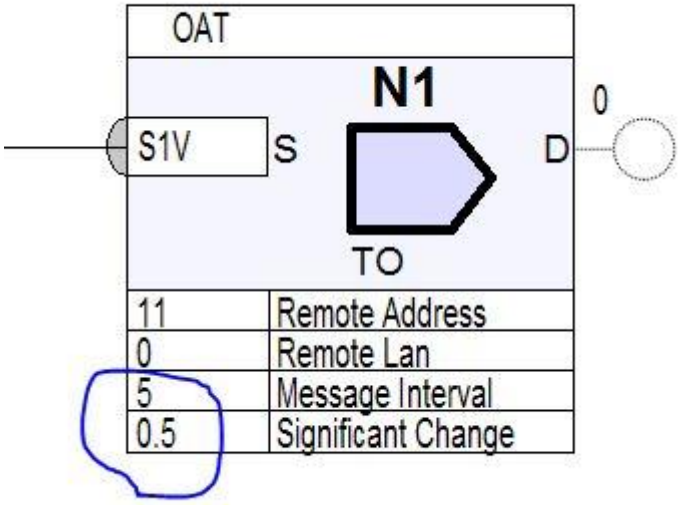
7. Trend Network tuning tips and tricks

a) If any IQ controllers are on a remote current loop network then it is advised to change the IC coms update time to a minimum of 5 minutes for essential points only and all non-essential points to a minimum of 15 minutes, also make sure that the change values are set to a minimum of 0.5% of the process value as below:



b) If there is a 963 supervisor present on the network then change the graphics point refresh times to 15 seconds this can be done using the batch edit for all of the variable on each graphics page especially pages with multiple points

If problems are still persist then please contact Innon support at the following address where we will arrange for a call back to further assist: support@innon.co.uk