

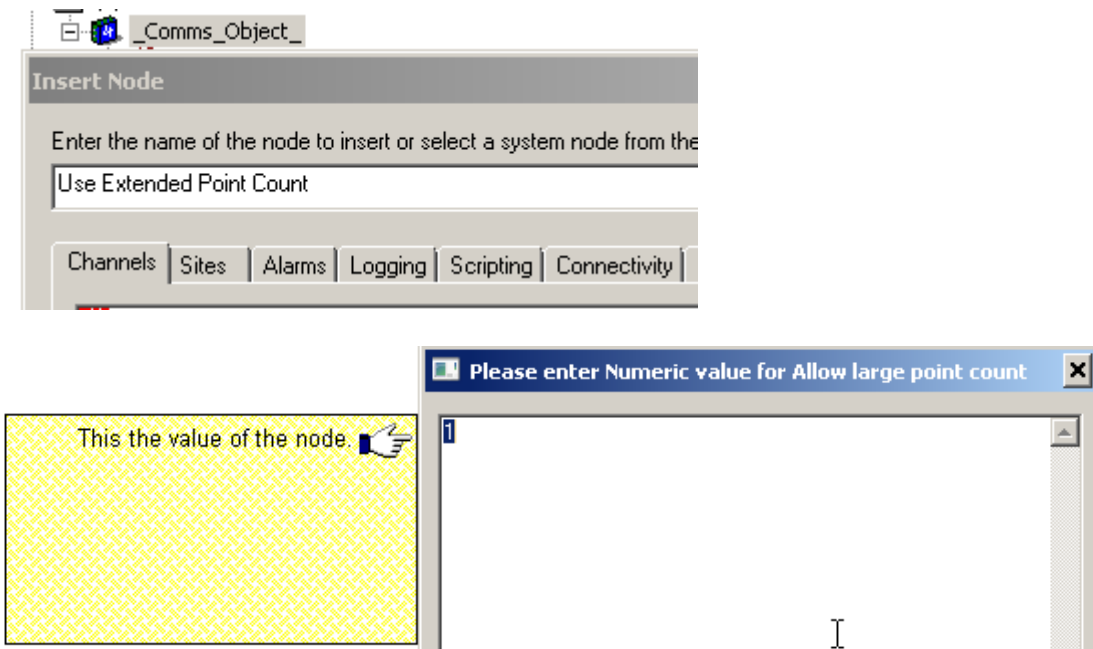
Guide to porting XL4 to XL4Plus

Last update 3/9/2018

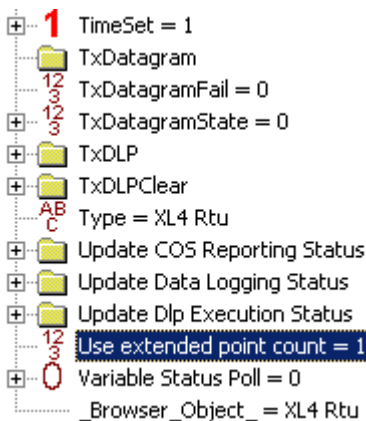
In most cases an XL4Plus can be directly substituted for an XL4. However there are some exceptions and changes needed to take advantage of the new features.

DATRAN

To use the extended point count this must be manually enabled in the comms object for the site. Click on the `_comms_object_` for the site. Press the insert key. Type in `Use Extended Point Count`

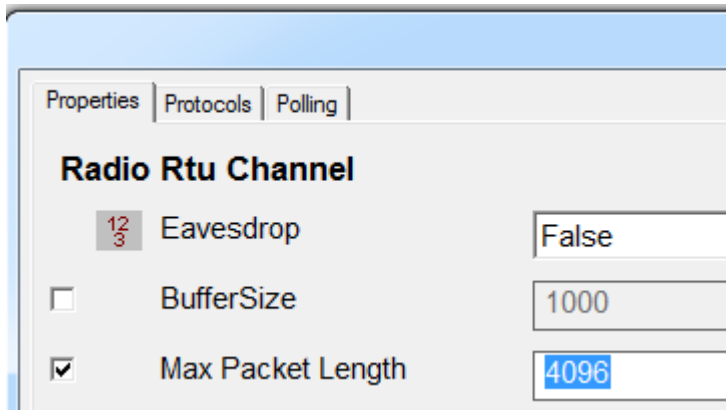


This should give an entry as shown below. You can now access more than 255 values per data type.



Packet Length

In the Channel objects the Max Packet Length property may need to be increased when using large point counts. A reasonable value would be 4096.

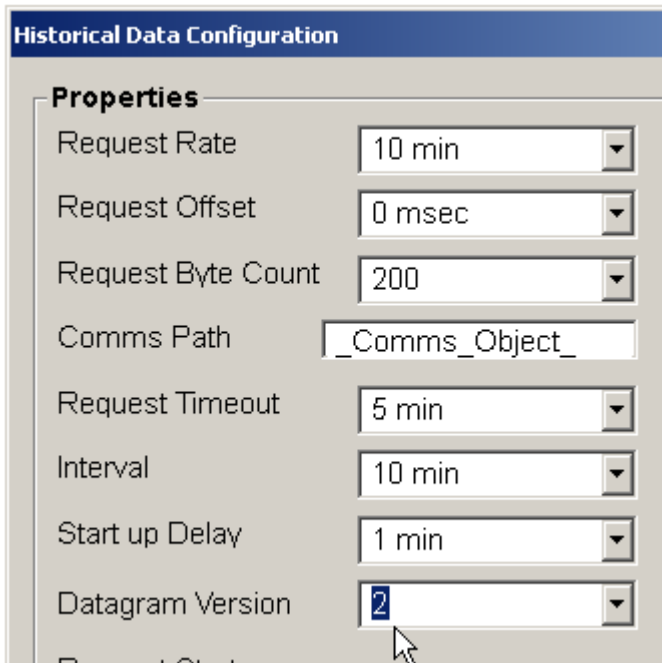


RTU Retry timeouts

Due to the increased packet length, in the RTU comms object the RTU retry timeouts may need to be increased. Especially if 1200 baud or slower is being used.

RTU Logged Data

Where data is logged using the `_comms_hist_data_` object in DATRAN, then a datagram version 2 must be specified (old XL4 use version 1). When installing a new XL4plus to site ensure that you apply the `_comms_hist_data_` object in DATRAN. This ensures that the RTU has the correct settings for logging.



Maximum Number of RTU Logged Points

The maximum number of points that can be configured for RTU logging is 35. Note that this number is independent of the number of points that can be retrieved by a standard poll (up to 65535 points).

Modbus

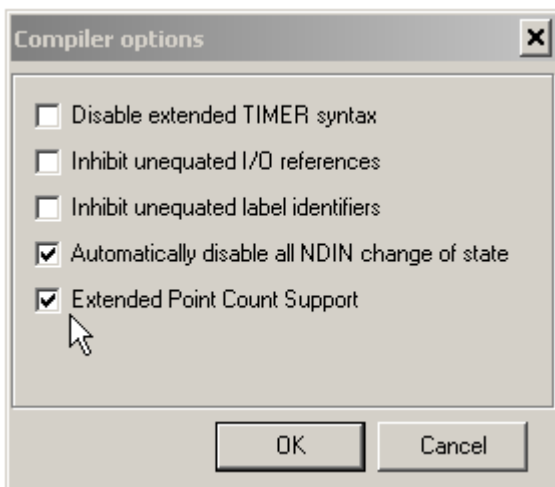
Depending on whether the RTU is a master or slave, then the sense of what is an input and what is an output may have changed. If the RTU is a Modbus master it always reads the slaves inputs. If the RTU is a Modbus slave its inputs are read by the Modbus master. Previously the RTU always read inputs irrespective of whether it was the master or slave.

RTU Time Sync

When an RTU is first installed or upgraded from XL4 to XL4plus a time synch needs to be manually done. This can be done either from Workbench or by resetting the comms object in Datran.

DLP-IDE

To write a program (DLP) that uses the extended point count, an option needs to be set in the DLP-IDE. This is found on the menu bar at Tools → Compiler Options and check the box Extended Point Count support.



DLP Time

For firmware version 7.07 and earlier the time is in UTC. This is 12 hours behind NZST. It does not change with daylight saving. This means if you use CKDOW or similar to flag a midnight reset you will need to apply a 12-hour offset in your DLP.

Due to requests, firmware version 7.08 and later all use local time as determined by Datran. This is the same behaviour as previous RTUs (XL4, Excel/Q03). New keywords are introduced into the DLP-IDE to allow access to the UTC time parameters. These are UTCHOUR, UTCROW, UTCDATE, UTCMTH, UTCYEAR

DLP Keywords

Temperature RTU CP board temperature in degrees Celsius
Voltage RTU supply voltage in decivolts. This keyword replaces spa48

COSMASK There is an optional new syntax; refer to the DLP-IDE help

Pulse Counting Using PDIG

It is now an option in Workbench to configure digital input 8 for fast pulse counting (up to 40kHz). In the XL4 it defaulted to fast counting.

For the other digital inputs and for DI8 when fast counting is not selected, the pulse sampling interval is now configurable from 10ms to 100ms

Viewing Notionals in Workbench

The default viewing configuration is 16 values for all types. This can be modified by going to Comms Options → Datran → Datran → Slave RTUs then in the right hand window you can modify the Notional Point Count settings.

Note that it is not mandatory to specify the Notional Point Count unless you are using slave RTUs.

Q50

This is not supported by the XL4Plus.

Licensing

When a new XL4Plus is installed, save a copy of the license file for future reference. It can be read by Workbench at any time to tell you the enabled options on your XL4Plus.

Licensing		
Serial Number		
Serial Number		2202
Licence Code		
Licence Code		D3F4594F85887D5E
Features		
QComms Master	<input checked="" type="checkbox"/>	True
IPBMaster	<input checked="" type="checkbox"/>	True
QComms Slave	<input checked="" type="checkbox"/>	True
QComms Server	<input checked="" type="checkbox"/>	True
Modbus Slave	<input checked="" type="checkbox"/>	True
Modbus Client	<input checked="" type="checkbox"/>	True
Modbus Master	<input checked="" type="checkbox"/>	True
DNP3	<input type="checkbox"/>	False
DF1	<input checked="" type="checkbox"/>	True

Master/Slave Configurations

The XL4plus as a Master can have XL4plus, XL4 or Excel (Q03) RTUs as slaves. These slaves can use RTU logging as the datagrams are passed on transparently by the XL4plus Master RTU. Take care to correctly configure the `_comms_hist_data_` nodes in Datran with the correct datagram version (2 for XL4plus, 1 for all others).

An XL4 Master can have XL4plus RTUs as slaves. The XL4plus slave can use RTU logging.

LED Error codes

These have been updated. Refer to the XL4plus Quick Start guide for the new codes.

Rebooting the RTU

When the RTU is rebooted or re-powered it now performs a file consistency check. In some case this can take in excess of 30 seconds after the green OK light starts flashing. Do not attempt to write new configurations using Workbench until 60 seconds after a reboot.