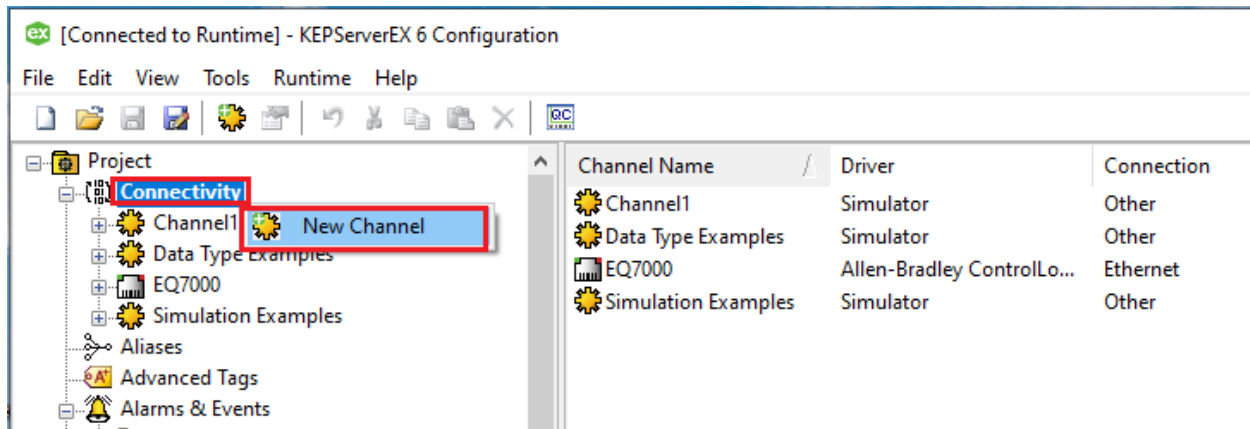
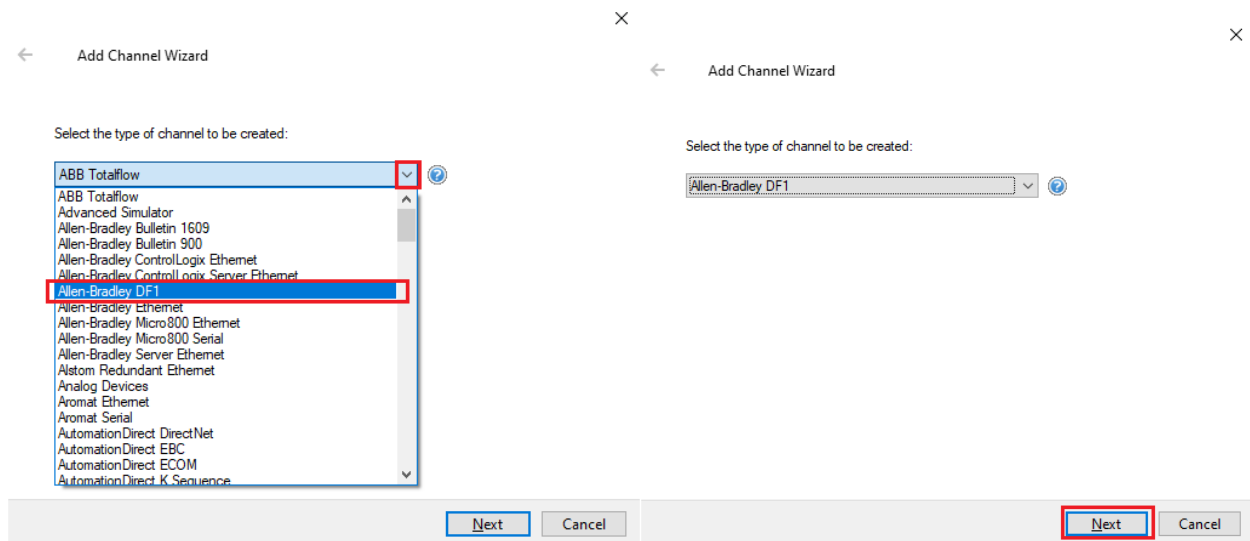


Allen Bradley FactoryTalk accessing PLC5 & SLC504 with KEPServer OPC using DLPCle DH+ card

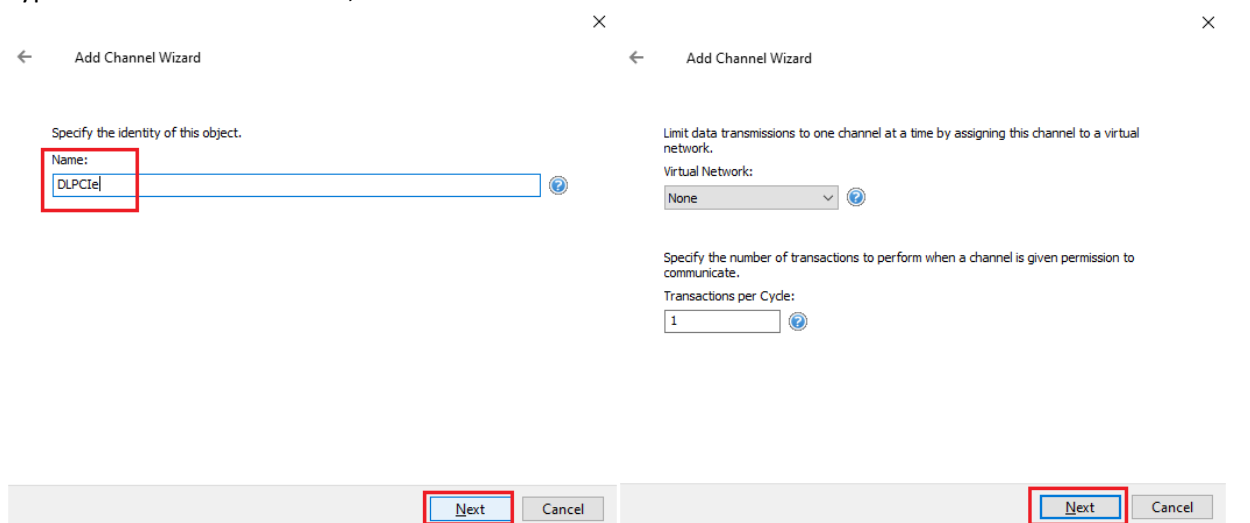
Start Kepware KEPServerEX, right click on Connectivity or click on New Channel icon to add a new Channel



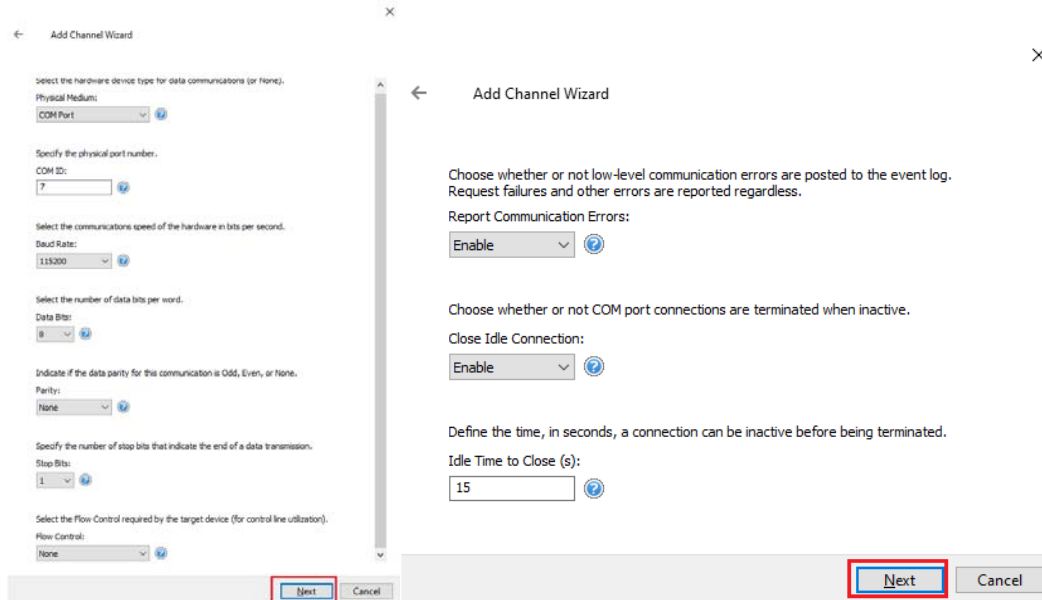
From the Drop Menu select Allen Bradley DF1, Click Next.



Type a name for the Channel, Click on Next



From the Drop menus enter the serial port of the DLPCIe card found under Device manager, also enter the card serial settings done in EQ32 configuration software & click Next



The 'Add Channel Wizard' window shows physical settings for a serial port. The 'Physical Medium' is set to 'COM Port'. The 'COM ID' is '7'. The 'Baud Rate' is '115200'. The 'Data Bits' are '8'. The 'Parity' is 'None'. The 'Stop Bits' are '1'. The 'Flow Control' is 'None'. The 'Report Communication Errors' is set to 'Enable'. The 'Close Idle Connection' is set to 'Enable'. The 'Idle Time to Close (s)' is '15'. The 'Next' button is highlighted with a red box.

Select the hardware device type for data communications (or None).
Physical Medium:
COM Port

Specify the physical port number.
COM ID:
7

Select the communications speed of the hardware in bits per second.
Baud Rate:
115200

Select the number of data bits per word.
Data Bits:
8

Indicate if the data parity for this communication is Odd, Even, or None.
Parity:
None

Specify the number of stop bits that indicate the end of a data transmission.
Stop Bits:
1

Select the Flow Control required by the target device (for control line utilization).
Flow Control:
None

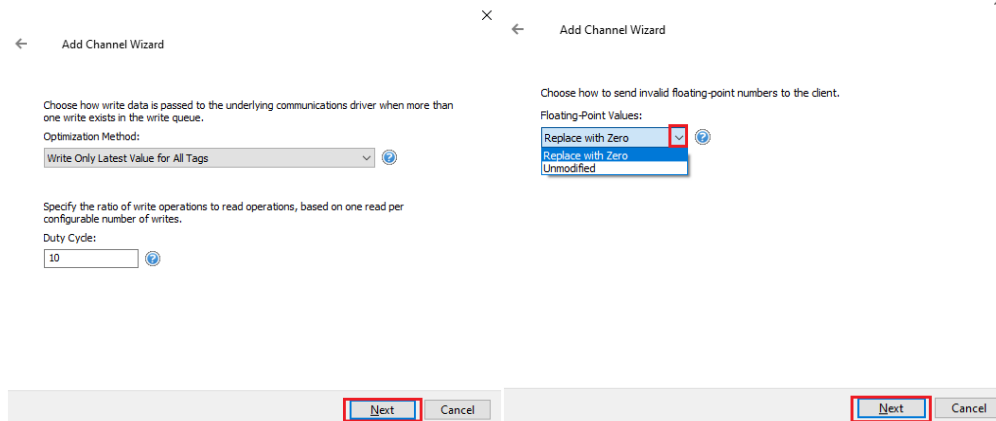
Choose whether or not low-level communication errors are posted to the event log. Request failures and other errors are reported regardless.
Report Communication Errors:
Enable

Choose whether or not COM port connections are terminated when inactive.
Close Idle Connection:
Enable

Define the time, in seconds, a connection can be inactive before being terminated.
Idle Time to Close (s):
15

Next Cancel

Continue with selecting Channel settings.



The 'Add Channel Wizard' window shows channel settings. The 'Optimization Method' is 'Write Only Latest Value for All Tags'. The 'Duty Cycle' is '10'. The 'Floating-Point Values' dropdown is set to 'Replace with Zero'. The 'Next' button is highlighted with a red box.

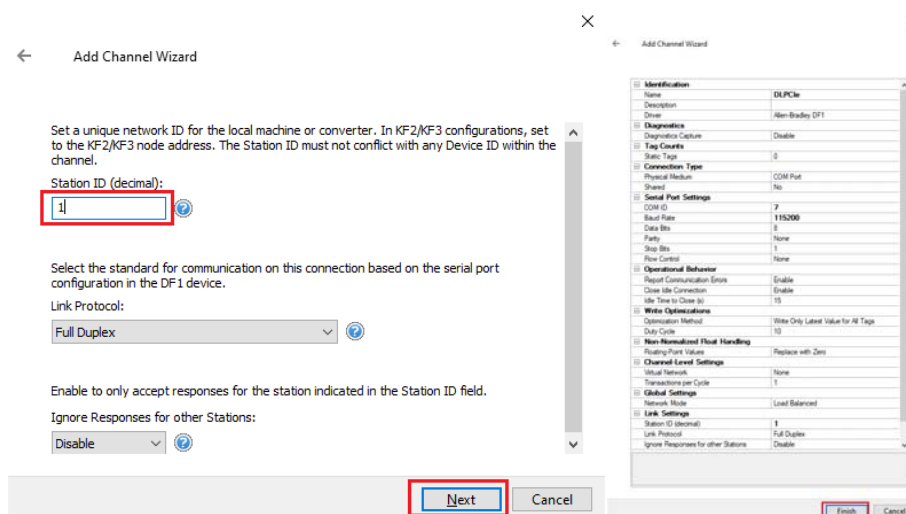
Choose how write data is passed to the underlying communications driver when more than one write exists in the write queue.
Optimization Method:
Write Only Latest Value for All Tags

Specify the ratio of write operations to read operations, based on one read per configurable number of writes.
Duty Cycle:
10

Choose how to send invalid floating-point numbers to the client.
Floating-Point Values:
Replace with Zero

Next Cancel

Enter the node address of the DLPCIe as a station ID then click Finish when the serial settings are done.



The 'Add Channel Wizard' window shows the 'Station ID (decimal)' field set to '1'. The 'Link Protocol' is 'Full Duplex'. The 'Ignore Responses for other Stations' is 'Disable'. The 'Next' button is highlighted with a red box. A summary window is also visible, showing all the settings configured.

Set a unique network ID for the local machine or converter. In KF2/KF3 configurations, set to the KF2/KF3 node address. The Station ID must not conflict with any Device ID within the channel.
Station ID (decimal):
1

Select the standard for communication on this connection based on the serial port configuration in the DF1 device.
Link Protocol:
Full Duplex

Enable to only accept responses for the station indicated in the Station ID field.
Ignore Responses for other Stations:
Disable

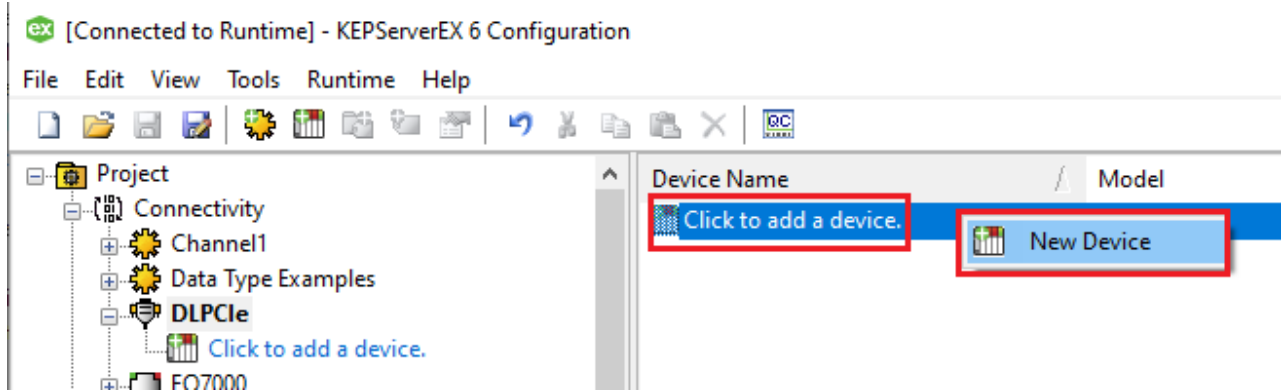
Next Cancel

Summary Window:

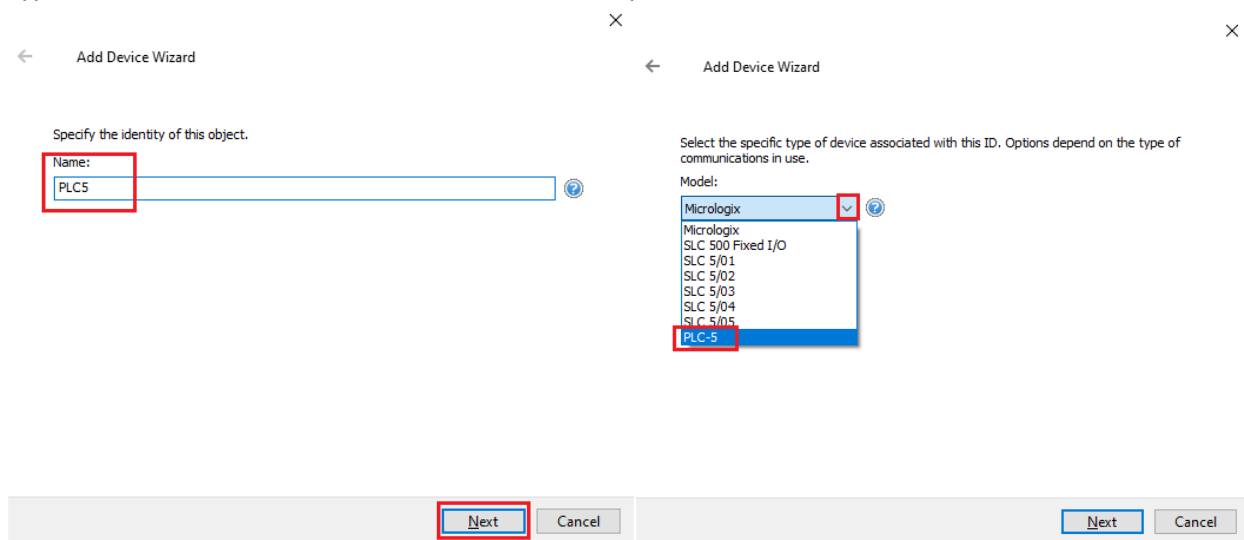
Category	Value
Identification	DLPCIe
Description	Allen-Bradley DF1
Device	Allen-Bradley DF1
Diagnostic	Diagnostic Capture: Disable
Tag Counts	Static Tags: 0
Connection Type	Physical Medium: COM Port, Channel: No
Serial Port Settings	COM ID: 7, Baud Rate: 115200, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None
Operational Behavior	Report Communication Errors: Enable, Close Idle Connection: Enable, Idle Time to Close (s): 15
Write Optimizations	Optimization Method: Write Only Latest Value for All Tags, Duty Cycle: 10
Non-Normalized Float Handling	Floating-Point Values: Replace with Zero
Channel-Level Settings	Virtual Network: None, Transactions per Cycle: 1
Global Settings	Network Mode: Load Balanced
Link Settings	Station ID (decimal): 1, Link Protocol: Full Duplex, Ignore Responses for other Stations: Disable

Finish Cancel

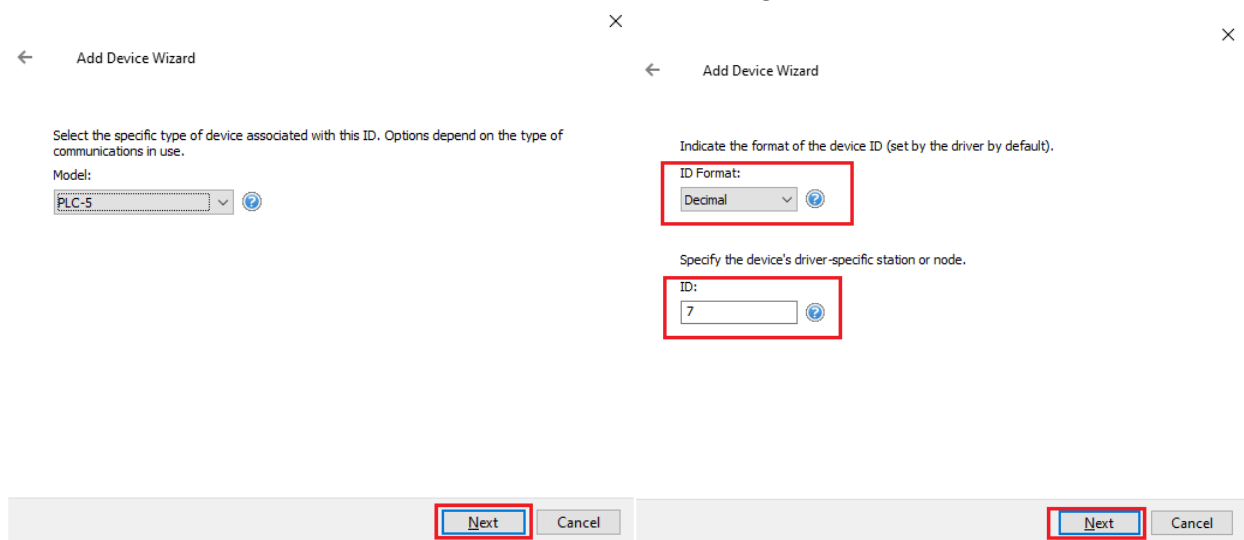
Click to add a new Device.



Type a name for the Device, click Next. From the drop Menu select PLC5.



Click Next. Enter the node address number of the PLC5 following ID format Decimal or Octal & click Next.



Continue with Device settings

← Add Device Wizard

Specify the method for determining how often tags in the device are scanned.

Scan Mode:

Respect Client-Specified Scan Rate

Provide the first updates for new tag references from stored (cached) data rather than polling devices immediately.

Initial Updates from Cache:

Disable

Next

Cancel

×

← Add Device Wizard

Specify an interval, in milliseconds, to determine how long the driver waits for a response from the target device to indicate completion.

Request Timeout (ms):

1000

Indicate how many times the driver sends a communications request before considering the request to have failed and the device to be in error.

Attempts Before Timeout:

3

Next

Cancel

Select the Error checking method, make sure it is similar to what the DLPCle was set for.

← Add Device Wizard

Automatically remove the device from the scan due to communication failures.

Demote on Failure:

Disable

Next

Cancel

← Add Device Wizard

Select the checksum validation supported by the target device.

Error Checking Method:

CRC

Indicate whether data requests should be small or large to optimize performance and PLC memory use.

Request Size:

Large

Next

Cancel

Click on Finish.

← Add Device Wizard

Enable to rearrange message order with lower words first, then upper. Select No to maintain order as received (typically upper words first, then lower).

Swap Float Words:

Enable

Next

Cancel

×

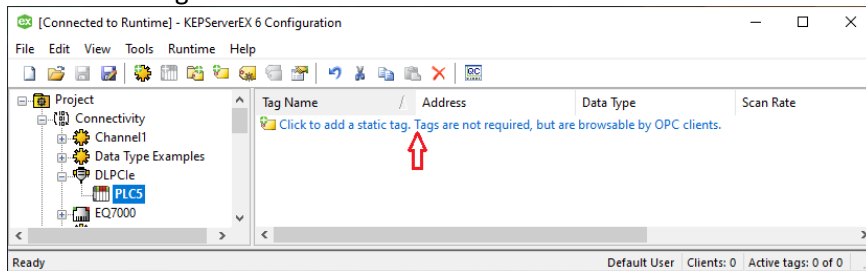
← Add Device Wizard

Identification	
Name	PLC5
Description	
Driver	Allen-Bradley DF1
Model	PLC-5
Channel Assignment	DLPCle
ID Format	Decimal
ID	7
Operating Mode	
Data Collection	Enable
Simulated	No
Tag Counts	
Static Tags	0
Scan Mode	
Scan Mode	Respect Client-Specified Scan Rate
Initial Updates from Cache	Disable
Communication Timeouts	
Request Timeout (ms)	1000
Attempts Before Timeout	3
Auto-Demotion	
Demote on Failure	Disable
Protocol Settings	
Error Checking Method	BCC
Swap Float Words	Enable
Request Size	Large

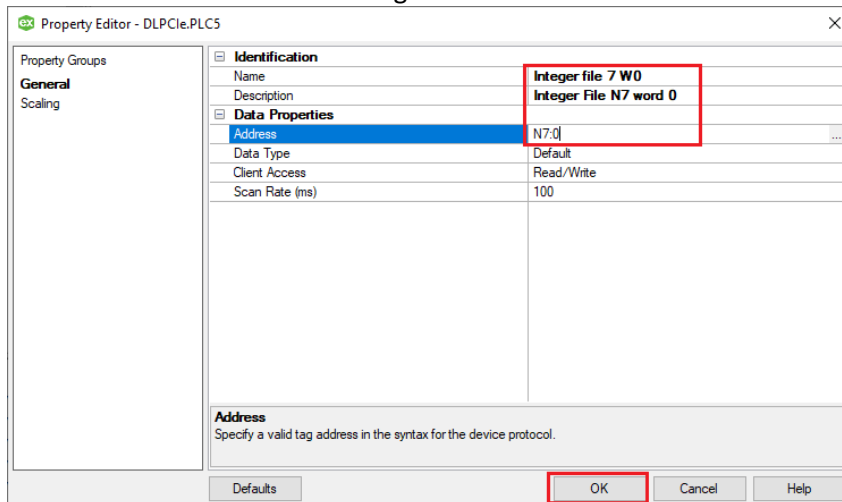
Finish

Cancel

Click to add tags or words that needed to be read from the PLC.



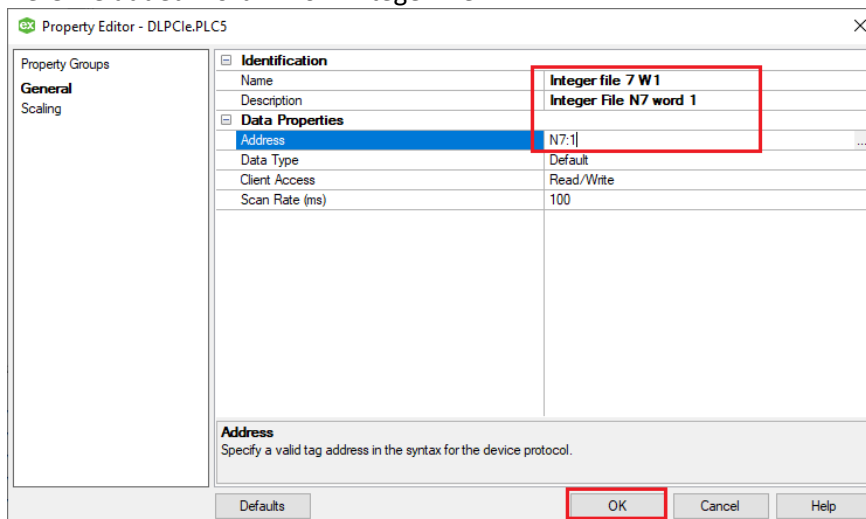
Here we added word 0 from integer file N7



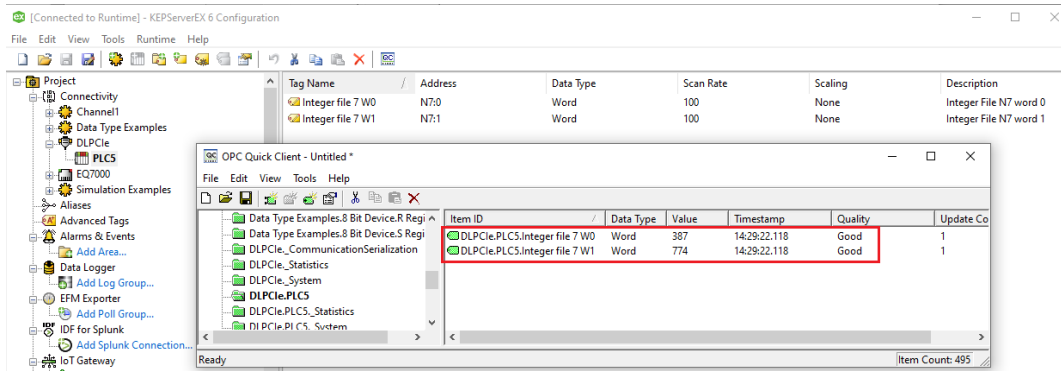
Right click on the created tag to add another New Tag.



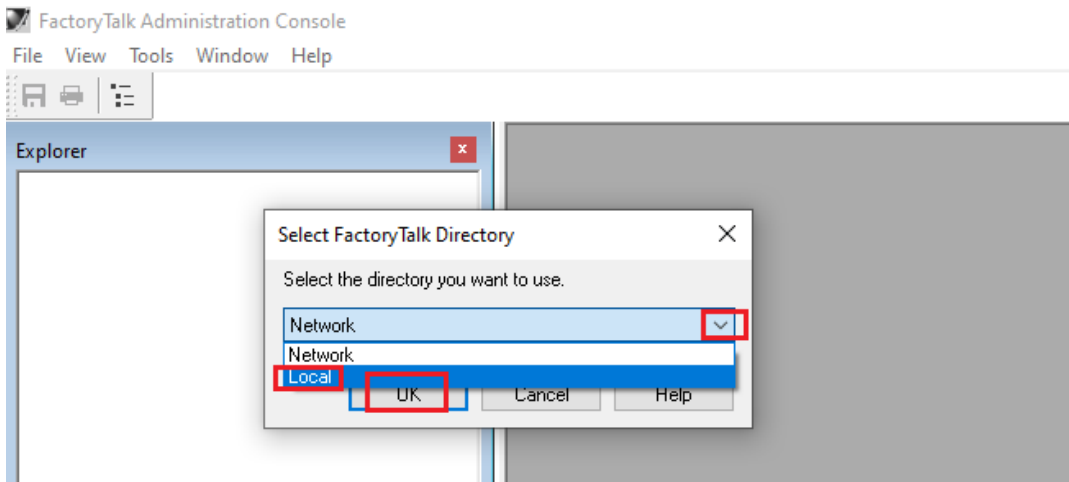
Here we added word 1 from integer file 7.



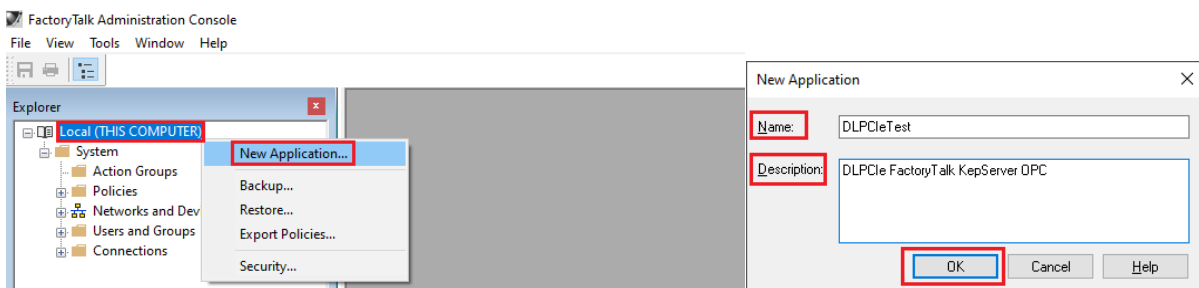
To read those two words click on OPC Quick Client under Tools.



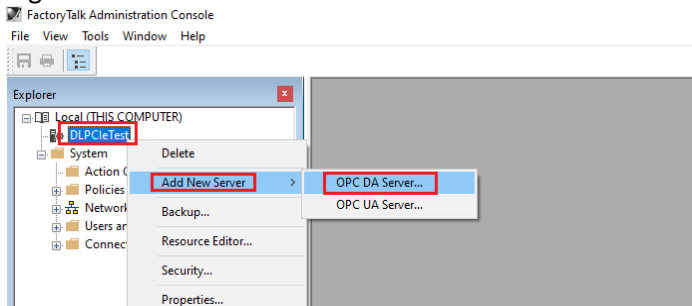
Now to use that KEServerEX OPC in FactoryTalk, open Allen Bradley FactoryTalk Administration Console, select Local and click OK.



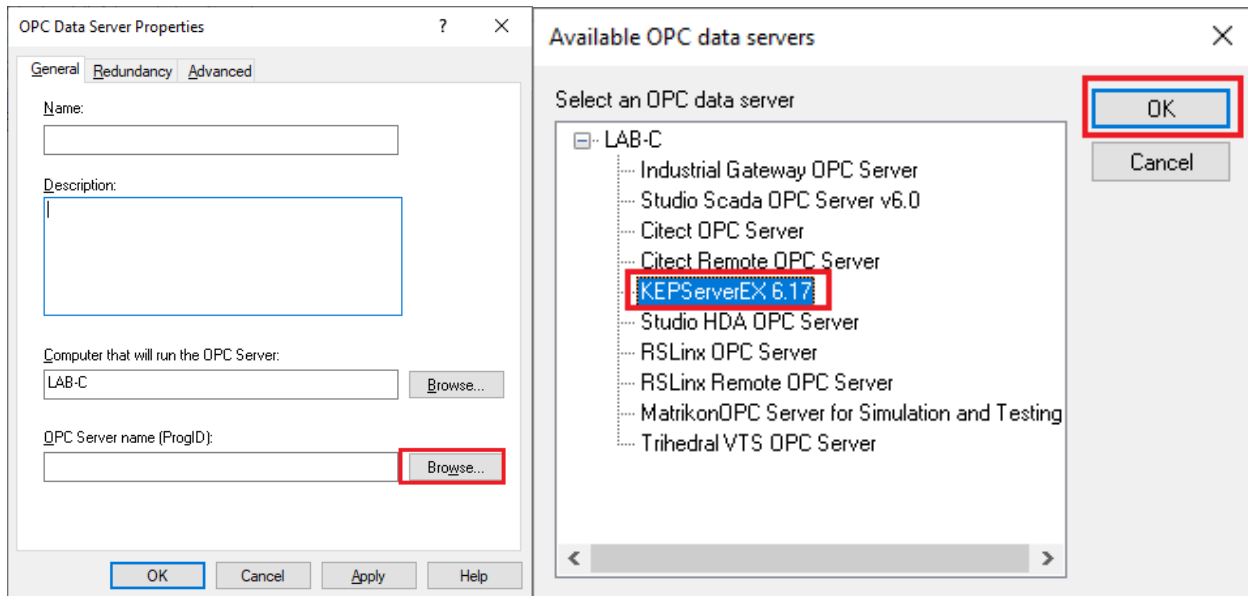
Create a new application, type a name and description for it then click on OK.



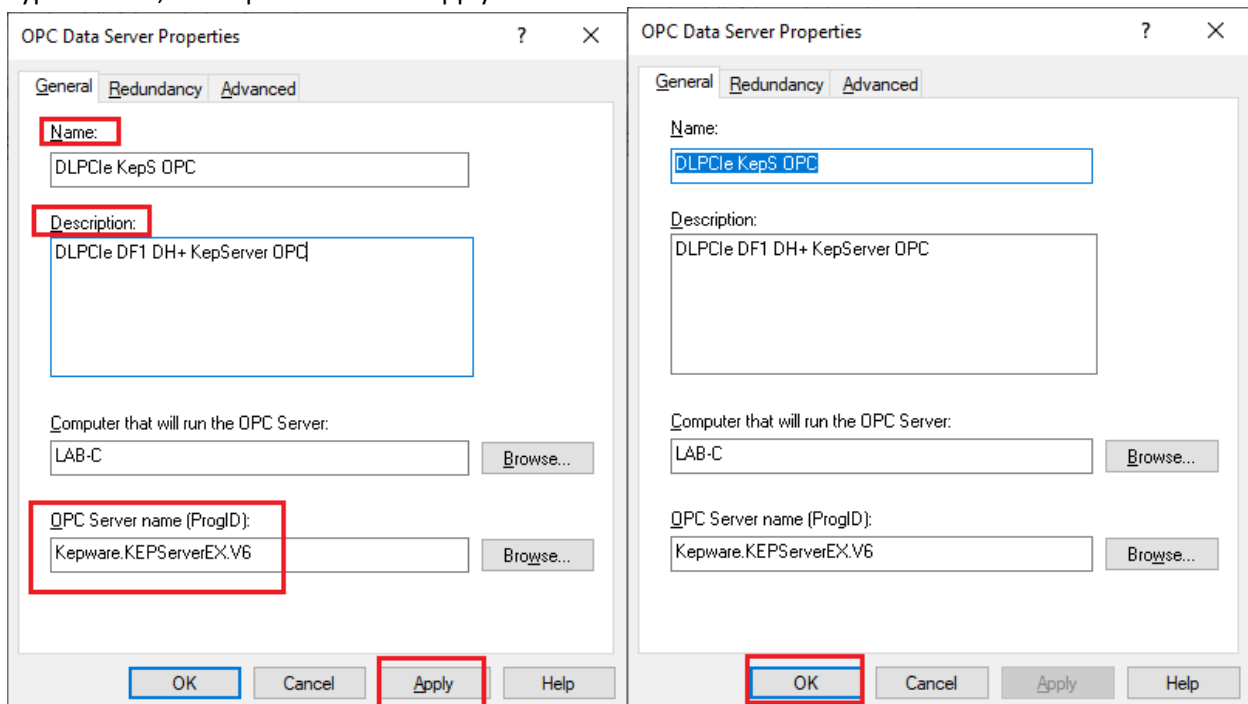
Right click on add the New OPC DA Server.



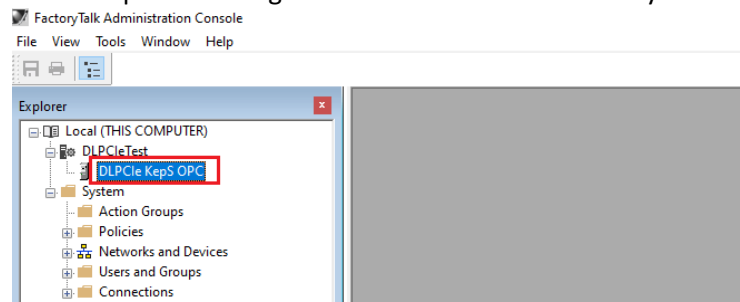
Click on Browse then Select the KEPServerEX and click OK.



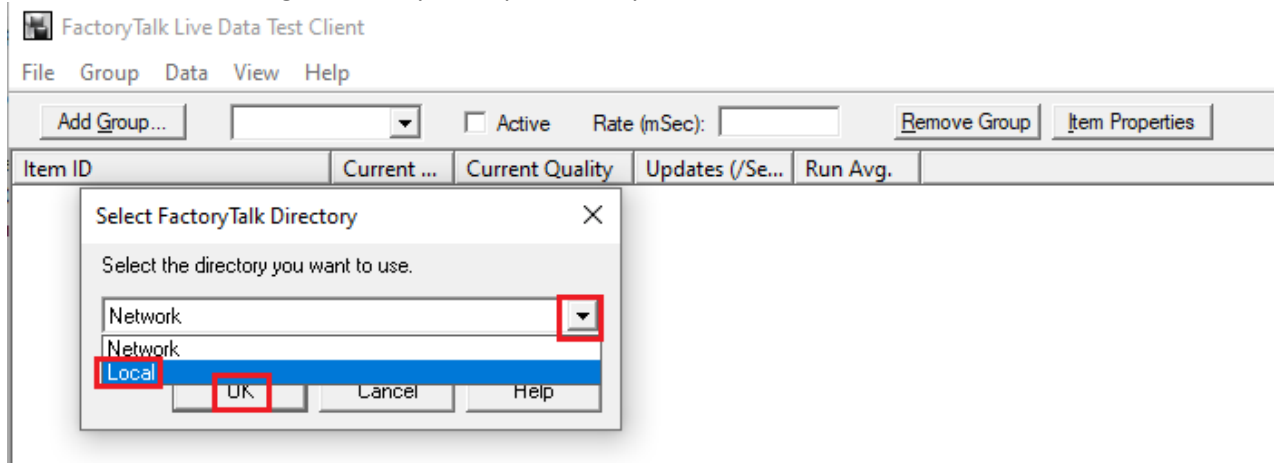
Type a name, Description and click Apply then click OK.



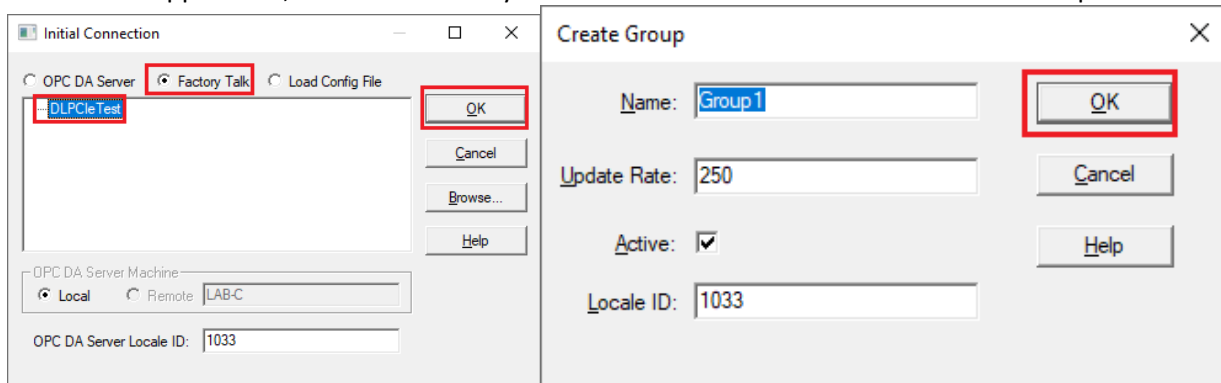
That completes adding the KEPServerEX to the FactoryTalk.



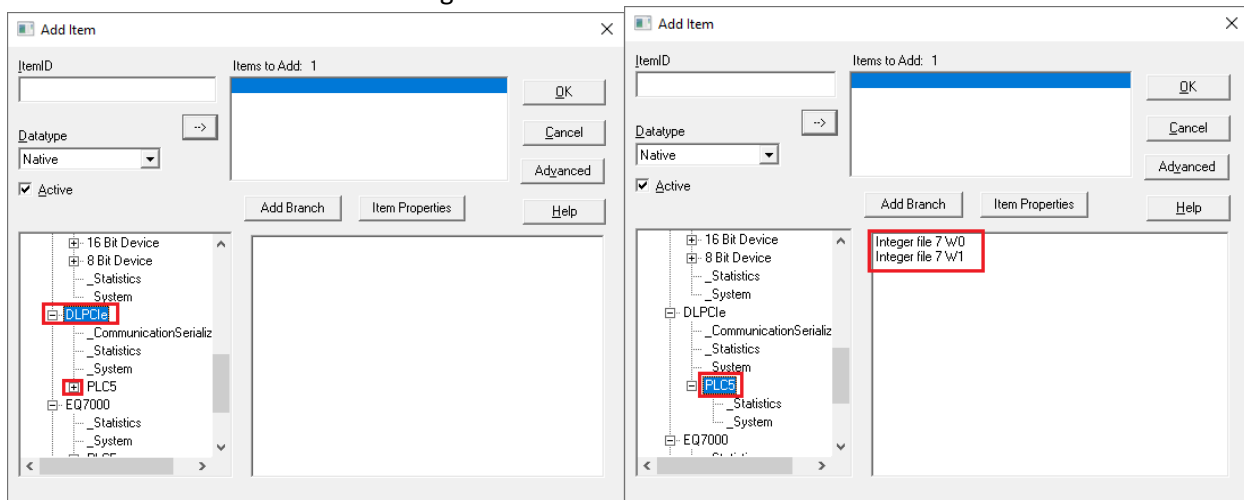
Now to access those tags in FactoryTalk open FactoryTalk Live Data Test Client, select Local & click Ok.



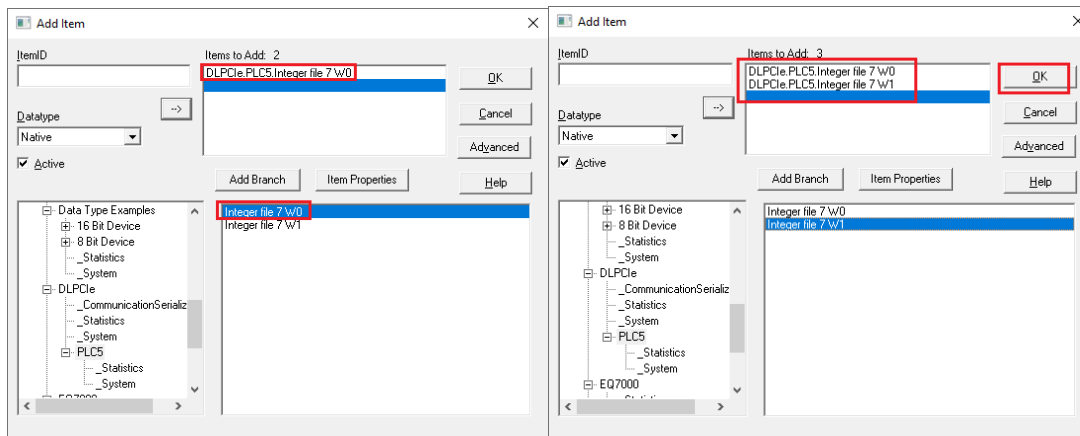
Click on the application, make sure FactoryTalk is selected and click on Ok to create a Group.



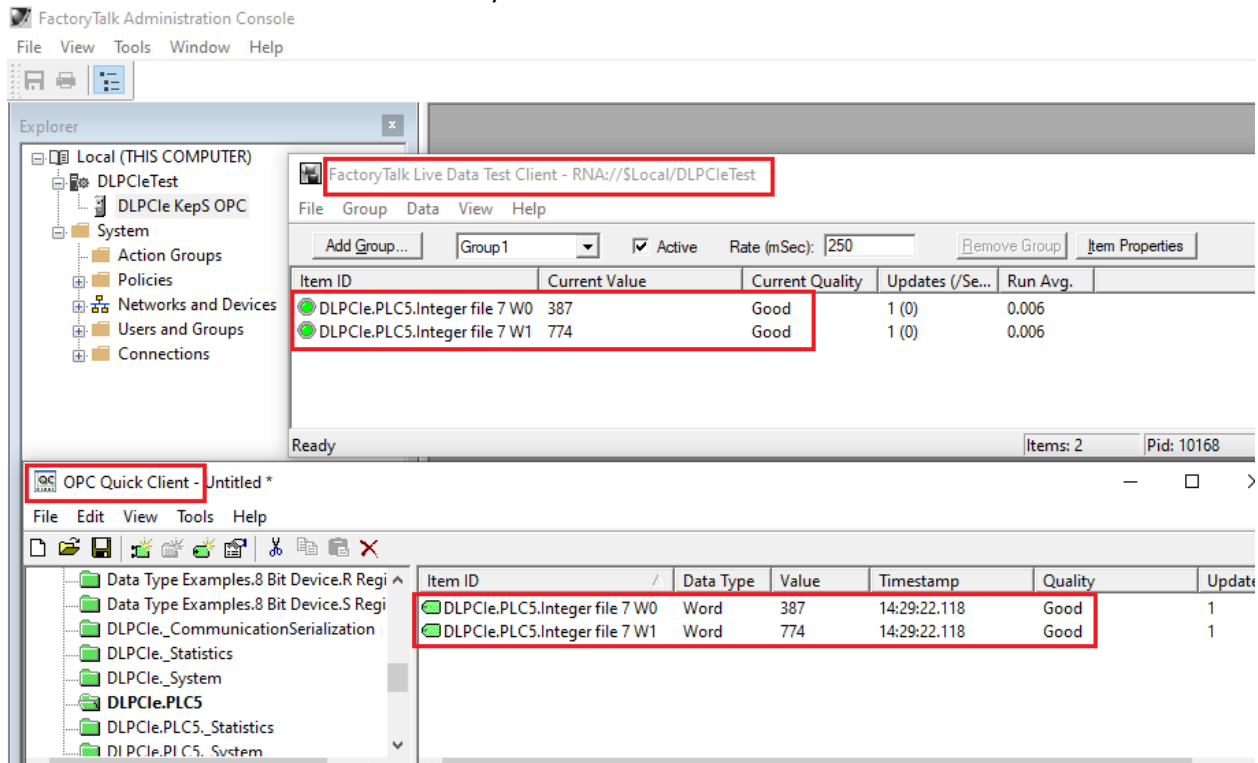
Click on PLC5 under DLPCle to see tags added in KEServerEX.



Double click on each word to add them both then click OK.



Here we can see the value read in FactoryTalk similar to those read in KEPServerEX OPC Quick Client.



Same procedure can be done for the SLC504 or any other PLC on the DH+ network.