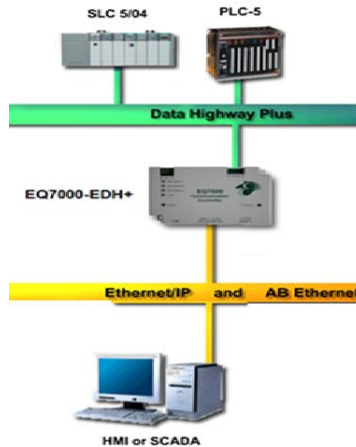
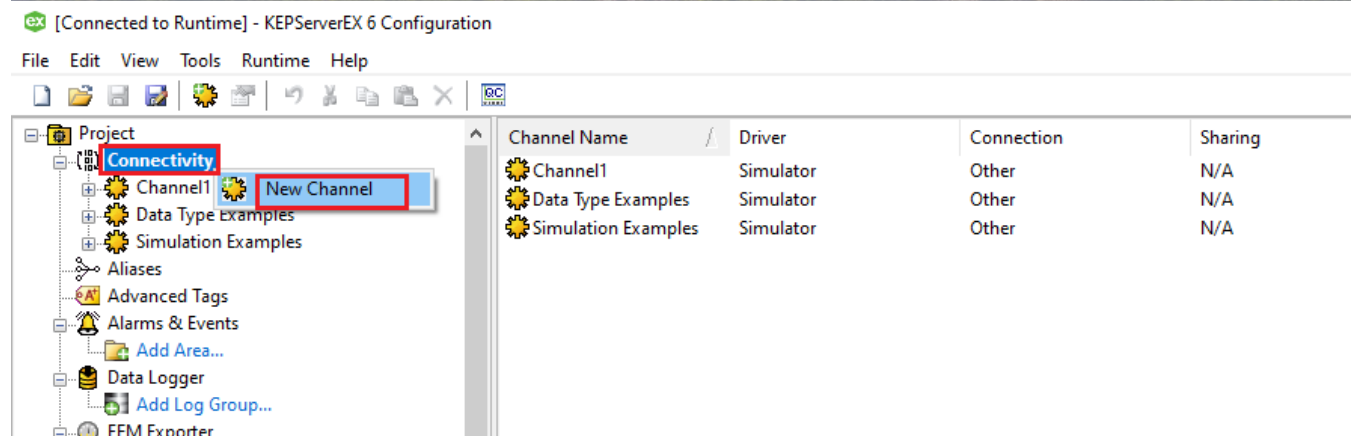


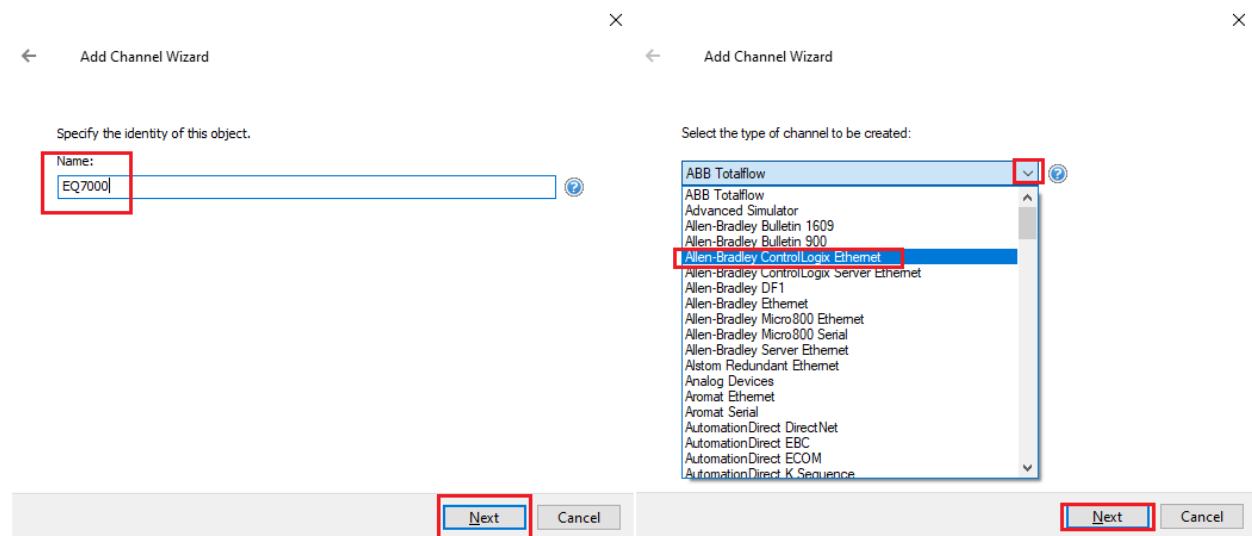
FactoryTalk accessing Data in PLC5, SLC504 on DH+ using KEServerEX OPC Ethernet IP with EQ7000



Start Kepware KEServerEX, right click on Connectivity to add New Channel.



Type a name for the Channel & click on Next, then select Allen-Bradley ControlLogix Ethernet from the drop menu & click Next.



Select your network adapter, click Next, then select your optimization method, & click Next

← Add Channel Wizard

Specify the name of a network adapter to bind or allow the OS to select the default.

Network Adapter:

Next Cancel

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
- Write All Values for All Tags
- Write Only Latest Value for Non-Boolean Tags
- Write Only Latest Value for All Tags

Duty Cycle:

Next Cancel

Choose how to handle invalid floating point, click Next then once done with the driver click on Finish.

← Add Channel Wizard

Choose how to send invalid floating-point numbers to the client.

Floating-Point Values:

- Replace with Zero
- Replace with Zero
- Unmodified

Next Cancel

Identification

| | |
|-------------------------------|--------------------------------------|
| Name | EQ7000 |
| Description | |
| Driver | Allen-Bradley ControlLogix Ethernet |
| Diagnostics | |
| Diagnostics Capture | Disable |
| Tag Counts | |
| Static Tags | 0 |
| Ethernet Settings | |
| Network Adapter | Default |
| Write Optimizations | |
| Optimization Method | Write Only Latest Value for All Tags |
| Duty Cycle | 10 |
| Non-Normalized Float Handling | |
| Floating-Point Values | Replace with Zero |

Finish Cancel

Once the channel is created click to add New Device.

[Connected to Runtime] - KEPServerEX 6 Configuration

File Edit View Tools Runtime Help

Project

- Connectivity
- Channel1
- Data Type Examples
- EQ7000
- Click to add a device.
- Simulation Examples
- Aliases
- Advanced Tags
- Alarms & Events
- Add Area...

| Device Name | Model | ID |
|------------------------|-------|----|
| Click to add a device. | | |
| New Device | | |

Type in a Device Name & click Next, then from the drop menu select DH+ Gateway: PLC5 & click on Next.

← Add Device Wizard

Select the specific type of device associated with this ID. Options depend on the type of communications in use.

Model:

ControlLogix 5500
ControlLogix 5500
CompactLogix 5300
FlexLogix 5400
SoftLogix 5800
DH+ Gateway: PLC-5
DH+ Gateway: SLC 5/04
ControlNet Gateway: PLC-5C
EIP Gateway: MicroLogix
EIP Gateway: SLC Fixed
EIP Gateway: SLC Modular
EIP Gateway: PLC-5
Serial Gateway: ControlLogix
Serial Gateway: CompactLogix
Serial Gateway: FlexLogix
Serial Gateway: SoftLogix
ENI: ControlLogix 5500
ENI: CompactLogix 5300
ENI: FlexLogix 5400
ENI: MicroLogix
ENI: SLC 500 Fixed I/O
ENI: SLC 500 Modular I/O

Specify the identity of this object.

Name: PLC5

Next Cancel

<IP or hostname>,1,<optional routing path>,<DHIO Slot>.<DHIO Channel>.<DH+ Node ID (dec)>

← Add Device Wizard

Specify the device's driver-specific station or node.

ID: <192.168.2.75>,0,0.A.7

Next Cancel

As for path
To Enter the Device ID
IP or Hostname, would be IP address of the EQ7000
1, Always Replace with 0
Optional Routing Path, don't enter anything.
DHIO slot, would be always 0
DHIO Channel, Always A
DH+ Node ID, is PLC5 or SLC 504 DH+ node address
in Decimal
<192.168.2.175>,0,0.A.7
Then Click on Next.

Select the Scan Mode click Next, then the timeout settings below & click on Next.

← 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

Define the maximum amount of time, in seconds, allowed to establish a connection to a remote device. Connection time is often longer than communication request time for a

Connect Timeout (s): 5

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

Define how long, in milliseconds, the driver waits before sending the next request to the target device.

Inter-Request Delay (ms): 0

Next Cancel

Enable demotion on failure, if not just click Next, select tags options from drop menus & click Next.

← Add Device Wizard

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

Demote on Failure:
Disable

Select the automatic tag generation action to be taken on device startup.

On Device Startup:
Do Not Generate on Startup

Indicate the preferred method of avoiding creation of duplicate tags.

On Duplicate Tag:
Delete on Create

Indicate a tag group name for new generated tags. If empty, generated tags are added at the device level.

Parent Group:

Instruct the server to automatically create sub groups for automatically generated tags.

Allow Automatically Generated Subgroups:
Enable

Next Cancel

Make sure Ethernet port is 44818 for Ethernet IP, click Next, later click on Finish

← Add Device Wizard

Specify the port number the remote device is configured to use.

TCP/IP Port:
44818

Select the maximum number of bytes that may be requested from a device at one time.

Request Size (bytes):
232

Specify whether to perform group writes for function files that support block writes.

Allow Function File Block Writes:
Disable

Next Cancel

| Identification | |
|----------------------------|-------------------------------------|
| Name | PLC5 |
| Description | |
| Driver | Allen-Bradley ControlLogix Ethernet |
| Model | DH+ Gateway: PLC-5 |
| Channel Assignment | EQ7000 |
| ID | <192.168.2.75>.0.0.A.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 | |
| Connect Timeout (s) | 3 |
| Request Timeout (ms) | 1000 |
| Attempts Before Timeout | 3 |

Click to add a new tag.

ex [Connected to Runtime] - KEPServerEX 6 Configuration

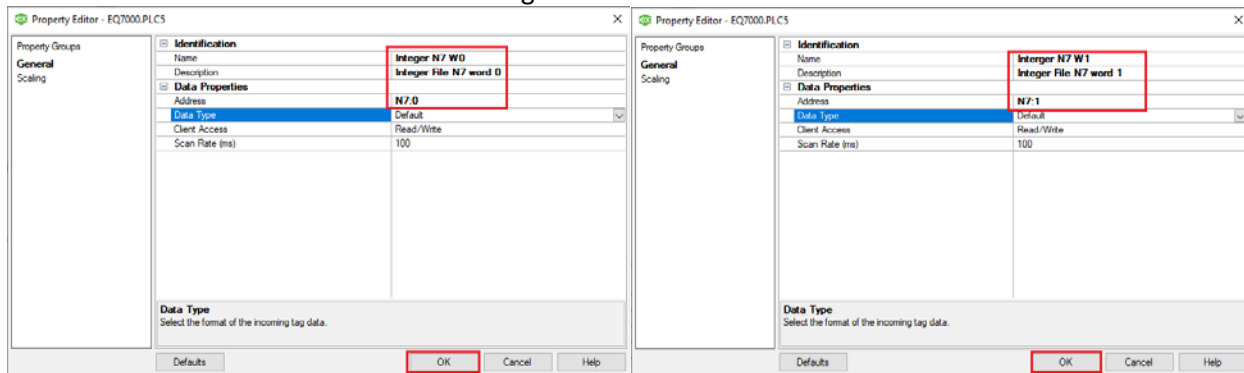
File Edit View Tools Runtime Help

Project

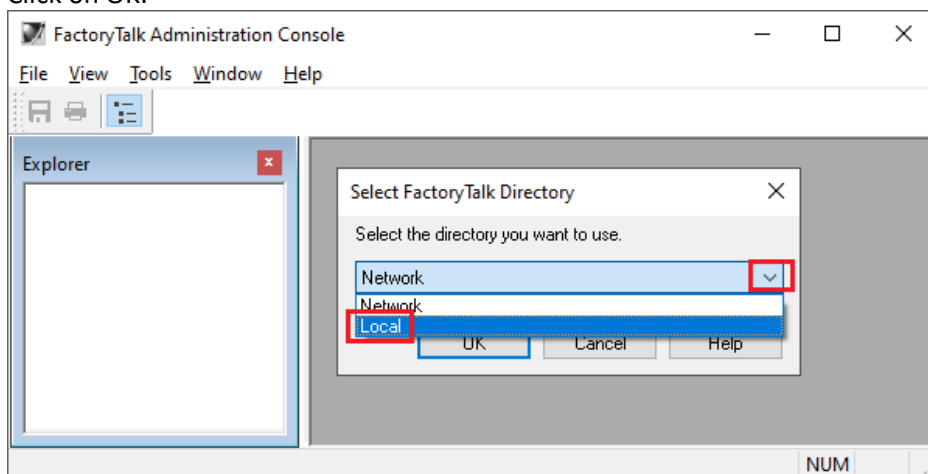
- Connectivity
- Channel1
- Data Type Examples
- EQ7000
- PLC5
- Simulation Examples
- Aliases

| Tag Name | Address | Data Type | Scan Rate |
|---|---------|-----------|-----------|
| Click to add a static tag. Tags are not required, but are browsable by OPC clients. | | | |
| New Tag | | | |

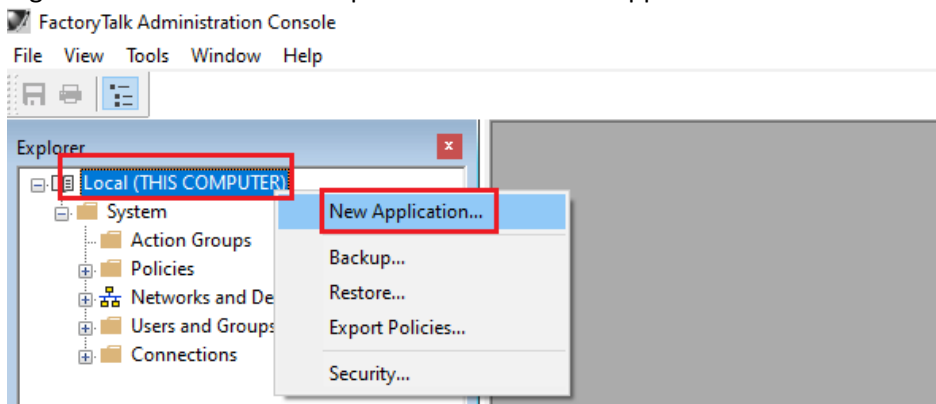
Here we added words 0 & word 1 from integer file N7.



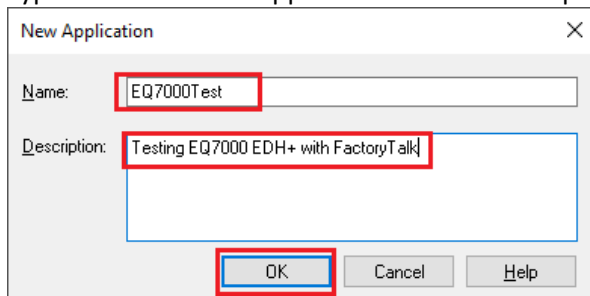
Now that tags are we can start FactoryTalk Administration Console & Select the Directory to use, then Click on OK.



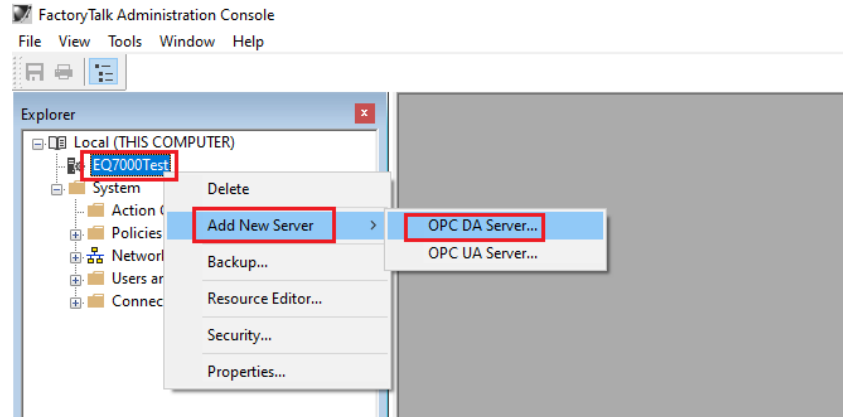
Right Click on Local This Computer and select New Application.



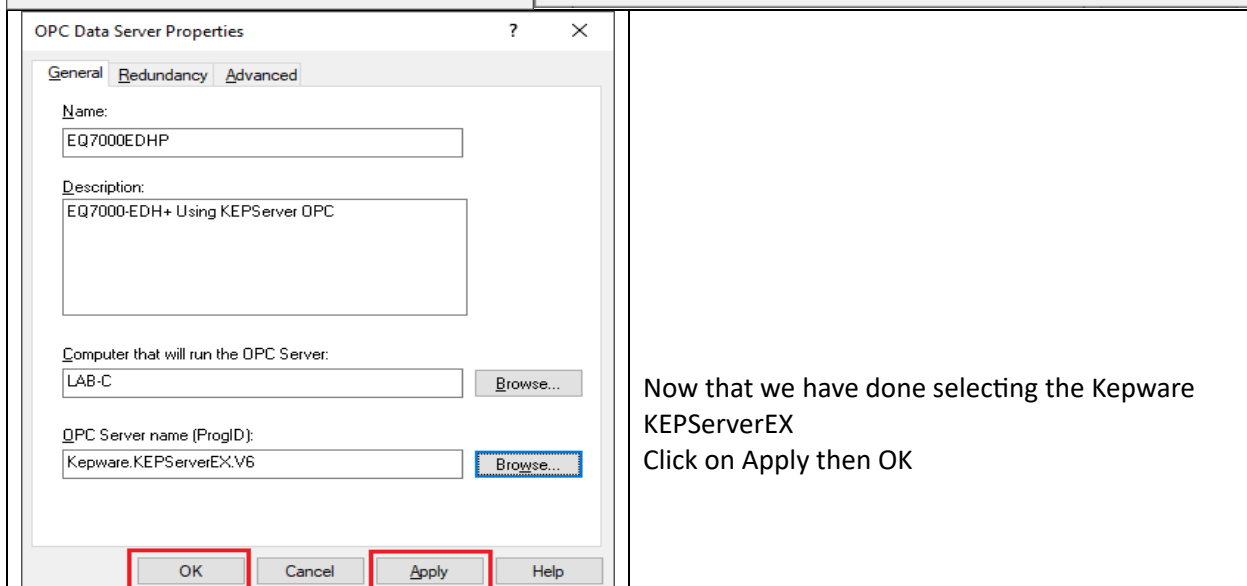
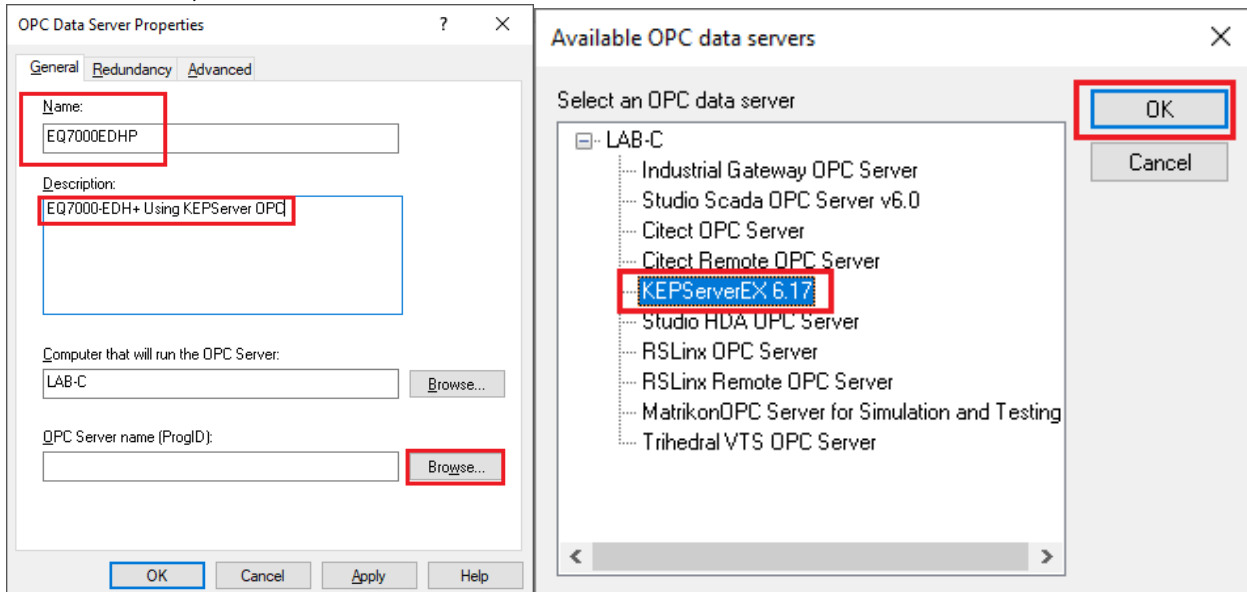
Type a Name for the Application and it's Description then click on OK.



Right Click on the App created the click Add New Server to add OPC DA Server.

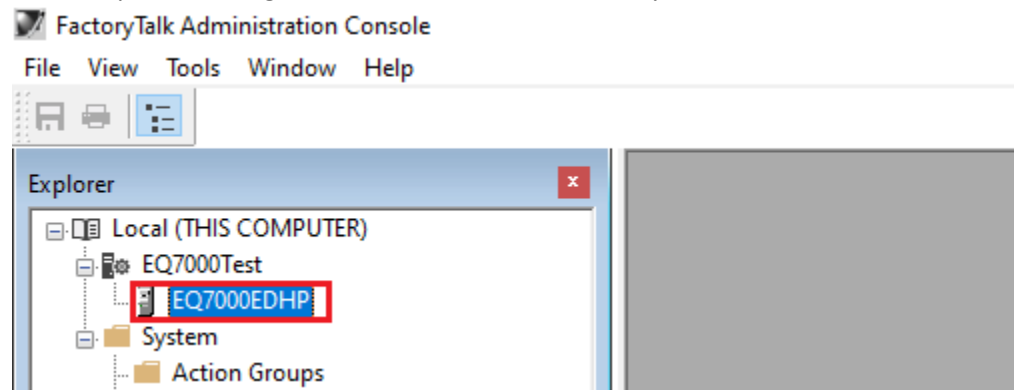


Click on Browse, then in Available OPC data servers Select KEPServerEX OPC Server & click on OK.

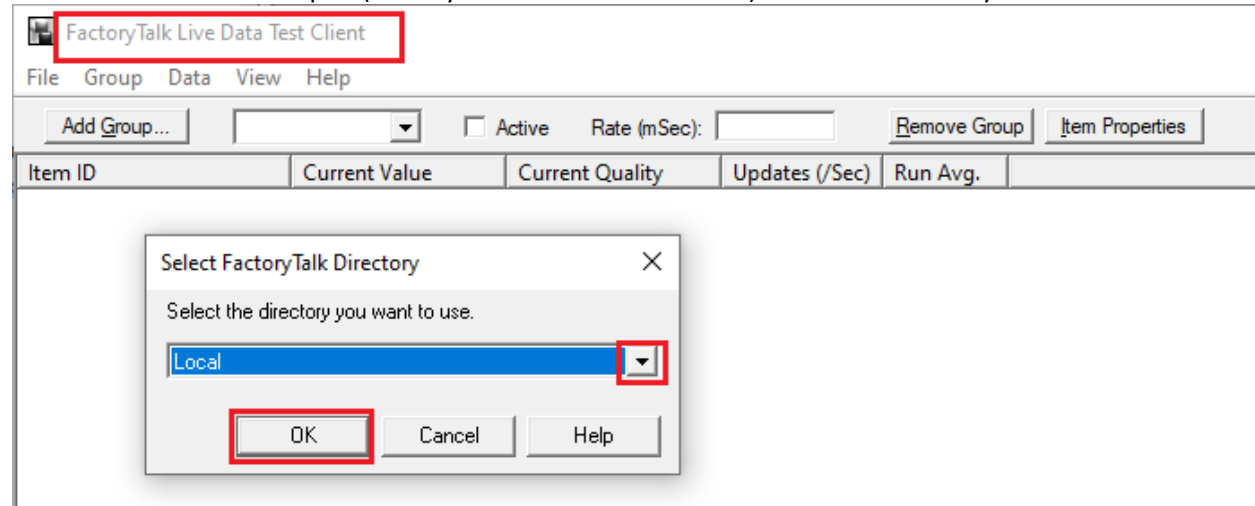


Now that we have done selecting the Kepware KEPServerEX
Click on Apply then OK

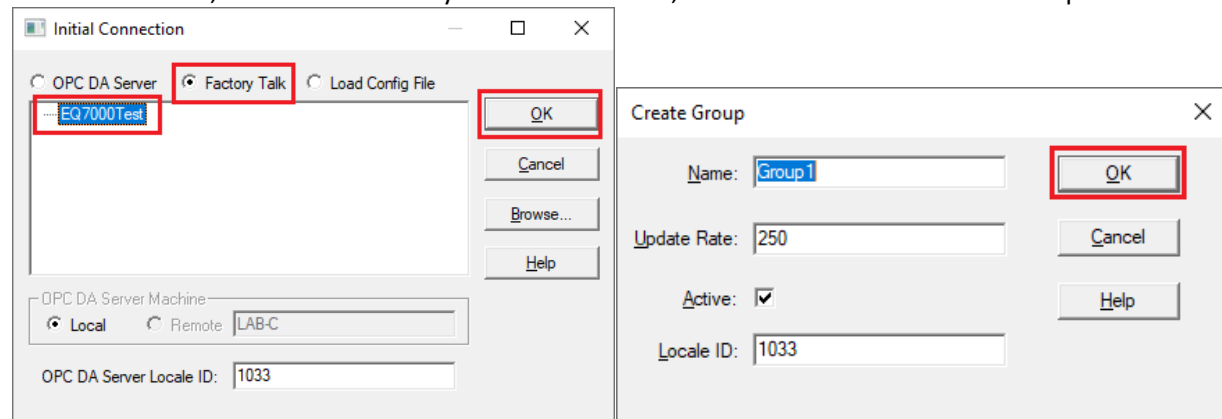
This completes adding the KEPServerEX OPC to FactoryTalk.



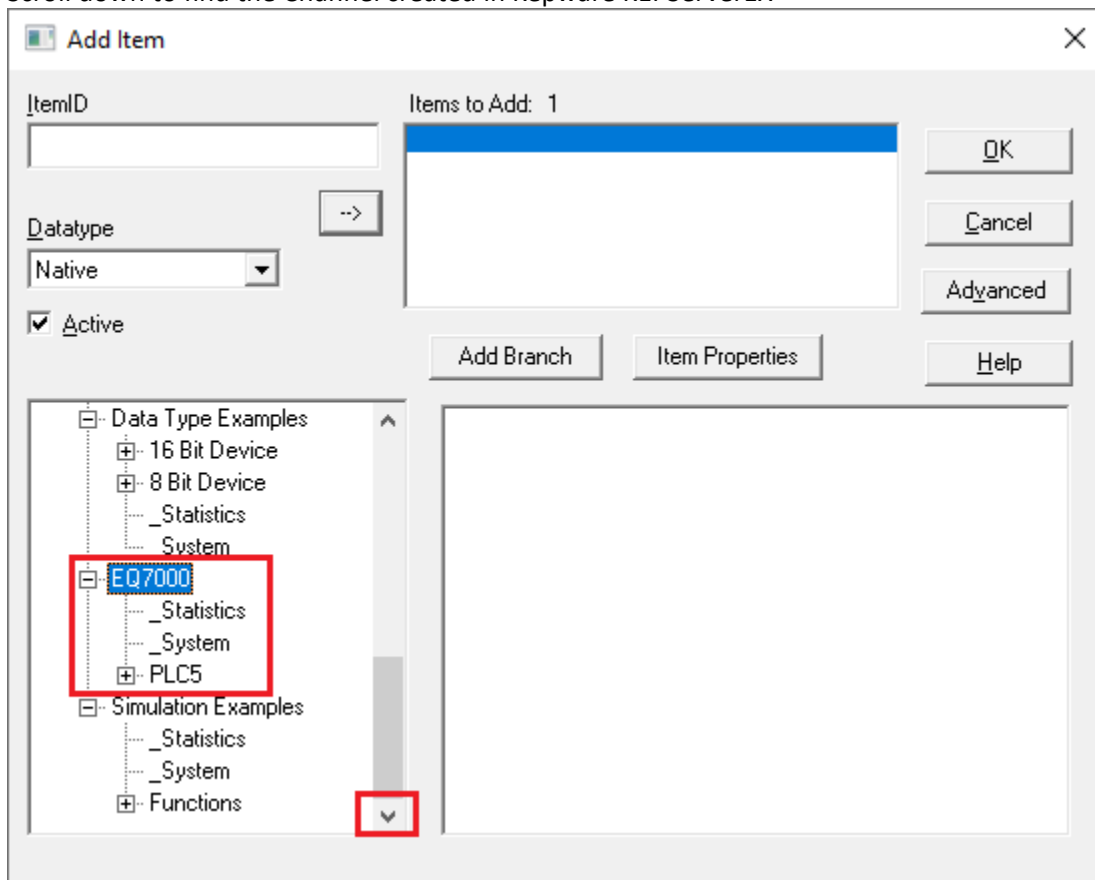
To read data from PLC5 open (FactoryTalk Live Data Test Client) select the directory then click on OK.



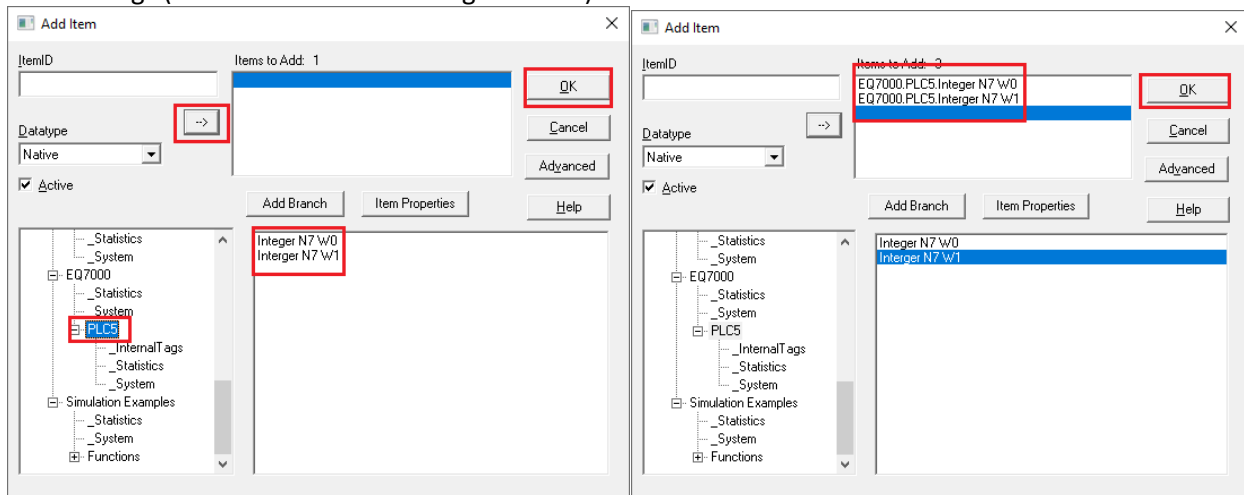
Select the Server, check mark Factory Talk & click on OK, then click OK to create the Group.



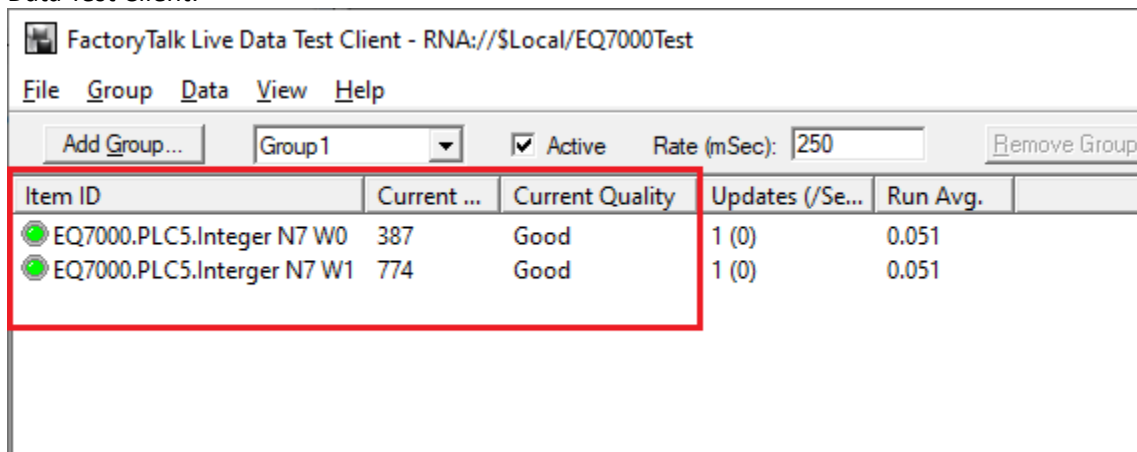
Scroll down to find the Channel created in Kepware KEServerEX



Add the tags (word 0 & word 1 of Integer file N7) and click on OK



Here we can see the values of the two words (word0 & word1) from integer file N7 here in FactoryTalk Data Test Client.



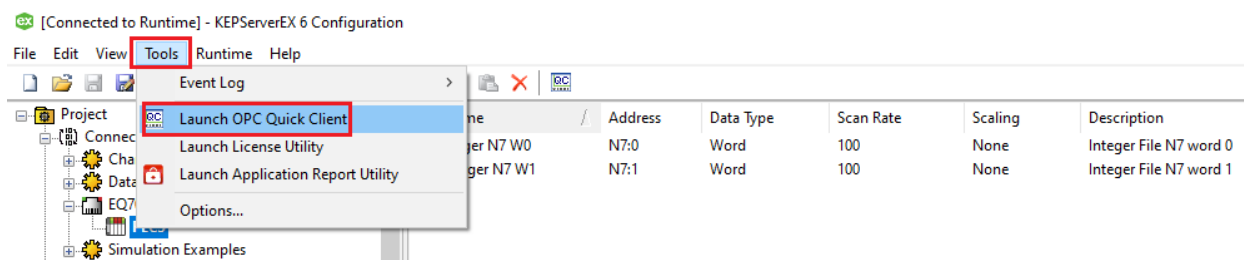
FactoryTalk Live Data Test Client - RNA://\$Local/EQ7000Test

File Group Data View Help

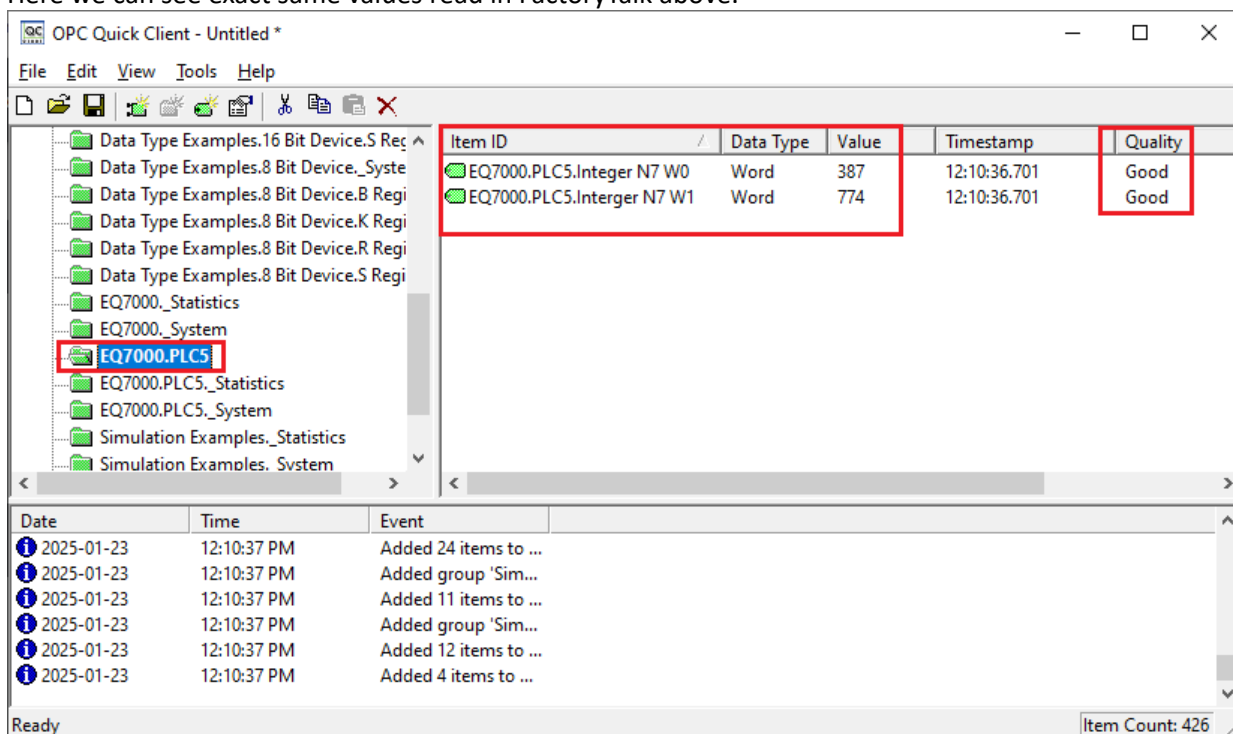
Add Group... Group1 ☒ Active Rate (mSec): 250 Remove Group

| Item ID | Current ... | Current Quality | Updates (/Se... | Run Avg. |
|---------------------------|-------------|-----------------|-----------------|----------|
| EQ7000.PLC5.Integer N7 W0 | 387 | Good | 1 (0) | 0.051 |
| EQ7000.PLC5.Integer N7 W1 | 774 | Good | 1 (0) | 0.051 |

To check that we have the correct values of the two words, start the OPC Quick Client, then under Tools click on Lunch OPC Quick Client



Here we can see exact same values read in FactoryTalk above.



OPC Quick Client - Untitled*

File Edit View Tools Help

Item ID / Data Type Value Timestamp Quality

| | | | | |
|---------------------------|------|-----|--------------|------|
| EQ7000.PLC5.Integer N7 W0 | Word | 387 | 12:10:36.701 | Good |
| EQ7000.PLC5.Integer N7 W1 | Word | 774 | 12:10:36.701 | Good |

Ready Item Count: 426

In a similar way we can add the SLC5/04 or any DH+ PLC on the same data highway Plus network that the EQ7000 is connected to.