



DATRAN OPC Server Interface

User Manual
1.6137.005

Revision 1.07
January 2013

CONFIDENTIAL

Prepared by
QTech Data Systems Limited

Table of Contents

1. DOCUMENT REVISION HISTORY	2
1.1 CHANGE CONTROL	2
1.2 CONFIDENTIALITY AND COPYRIGHT	2
2. OVERVIEW.....	3
2.1 AUDIENCE	3
2.2 CIRCULATION LIST	3
2.3 ACRONYMS.....	3
3. INSTALLATION.....	4
3.1 INSTALLING XDI – XML SERVICE	4
3.2 INSTALLING THE SERVER.....	6
3.3 REGISTERING THE SERVER WITH iFIX	8
3.4 UN-REGISTERING THE SERVER WITH iFIX	9
3.5 UNINSTALLING THE SERVER.....	9
4. MIGRATING FROM DDE SERVER TO OPC SERVER	15
5. TROUBLESHOOTING	17
5.1 THERE IS NO RESPONSE FROM THE XDI – XML SERVICE	17
5.2 CHECKING THE XDI – XML SERVICE DIAGNOSTICS	17
5.3 OPENING THE DVI POWER TOOL APPLICATION TO TROUBLESHOOT	17
5.4 OPC I/O DRIVER SERVER NOT COMMUNICATING WITH XDI – XML SERVICE	18
5.5 CANNOT VIEW VALUE IN iFIX DATABASE MANAGER.....	18
6. THINGS TO TAKE NOTE.....	20

1. DOCUMENT REVISION HISTORY

Rev	Description	Date	Author
1.00	Original	08/09/2003	Soo Yoong Ng
1.01	Note regarding OPC Power Tool	19/09/03	Régis Savry
1.02	Added section on migrating from DDE Server to OPC Server and also installing XDI – XML Service.	25/09/2003	Soo Yoong Ng
1.03	Improved wording on the installation of XDI – XML Service.	26/09/2003	Soo Yoong Ng
1.04	Added tip on C:\Dynamics folder. Added new troubleshooting topic – Cannot View Value in iFIX Database Manager	5/11/2003	Soo Yoong Ng
1.05	Updated last screen shot in the “Installing XDI – XML Service” section.	30/11/2006	Soo Yoong Ng
1.06	Added section: Registering the Server with InTouch	18/08/2010	Soo Yoong Ng
1.07	Updated contact details	14/1/2013	Antony Morris

1.1 Change Control

This document is maintained under change control. Any requests for change should go to:

QTech Data Systems Limited

12 Midas Place

Middleton

Christchurch 8024

New Zealand

Ph +64 3 366 3713

Fax +64 3 365 2815

Email techsupport@qtech.co.nz

1.2 Confidentiality and Copyright

© Copyright QTech Data Systems Limited 2013. All rights reserved.

This document is the property of QTech Data Systems Limited. It may not be copied, distributed or recorded on any electronic or other medium without the express written permission of QTech Data Systems Limited.

All material contained in this document which is not readily available in the public domain is regarded as confidential to QTech Data Systems Limited and may not be divulged to any third party without the express written permission of QTech Data Systems Limited.

2. OVERVIEW

This document will describe the installation and use of the DATRAN VI I/O Driver Server.

2.1 Audience

This includes users of the server.

2.2 Circulation List

A list of all the people/parties for whom the document is to be distributed to

DISTRIBUTION SHEET		
Document Status	Released	
Document Distribution Date	14 January 2013	
Name	Organisation	Country
Steve Champ	QTech Data Systems Limited	New Zealand
Ivan Mackintosh	QTech Data Systems Limited	New Zealand

2.3 Acronyms

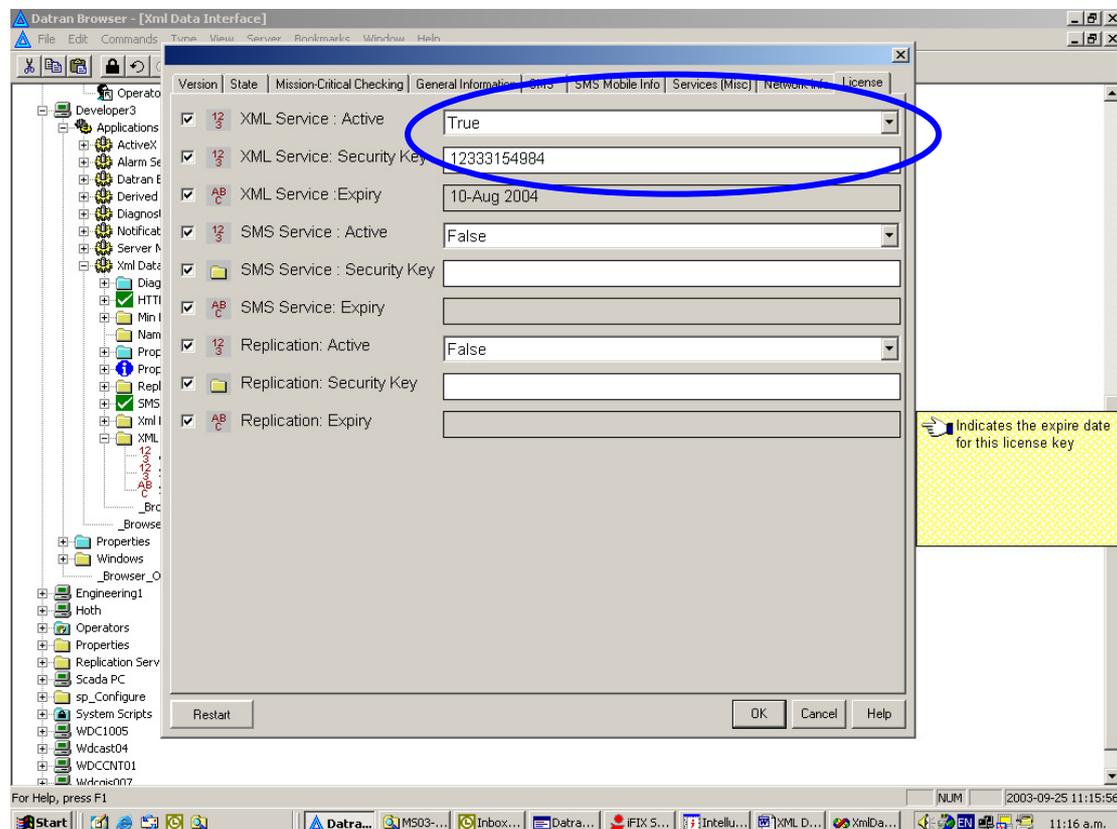
- DLL – Dynamic Link Library
- DVI – DATRAN VI
- OPC – OLE for Process Control
- XDI – XML Data Interface

3. INSTALLATION

3.1 Installing XDI – XML Service

This section describes the installation steps of the XML Service from the standard installation package for DATRAN 6.48.

1. Get security key for the XML Service. The hard disk drive (HDD) serial number must be provided to QTech Data Systems Limited to obtain this.
2. Run the DATRAN VI installation program via Start menu → Settings → Control Panel → Add/Remove Programs → DATRAN VI.
3. Select the XML Data Interface option in the DATRAN VI installation program.
4. Double click on the XML Data Interface application node to open the XDI dialog box and go to the License tab.
5. Enter the security key of the XML Service into the XML Service: Security Key text box.
6. Change the value in the XML Service: Active combo box to True.



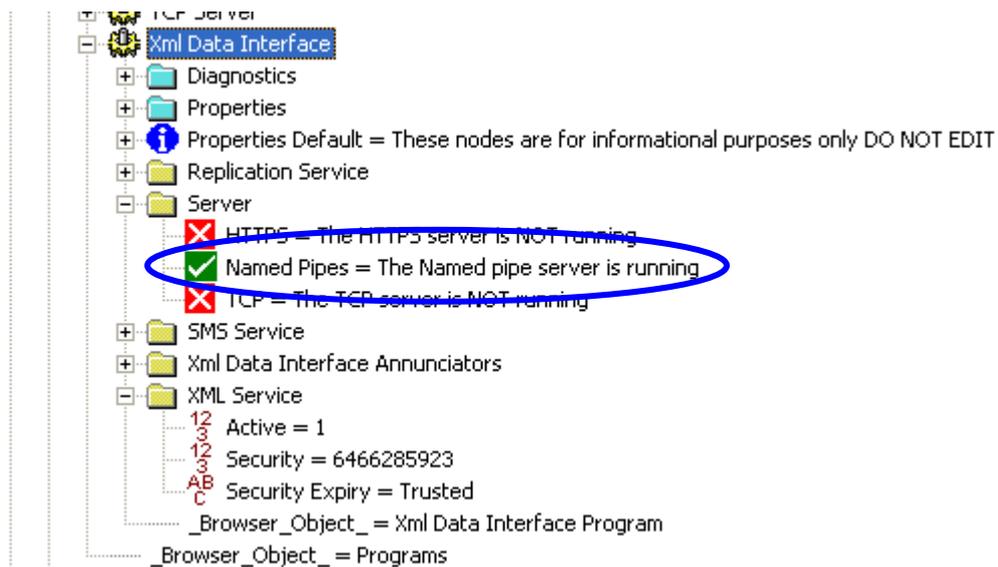
7. Go to the Network info tab.
8. Change the value in the Named Pipe combo box to True. Leave the other parameters unchanged.

The screenshot shows a configuration window with the following settings:

Parameter	Value
SSL Certificate Path	c:\cert\
HTTPS Port Number	12121
HTTPS Pool Size	
Retry	2
Client Authentication	False
Authorised DNS Client	
Authorised IP Number	
Wininet Time out	15 sec
Named Pipe Name	DatranPipe
Named Pipe	True

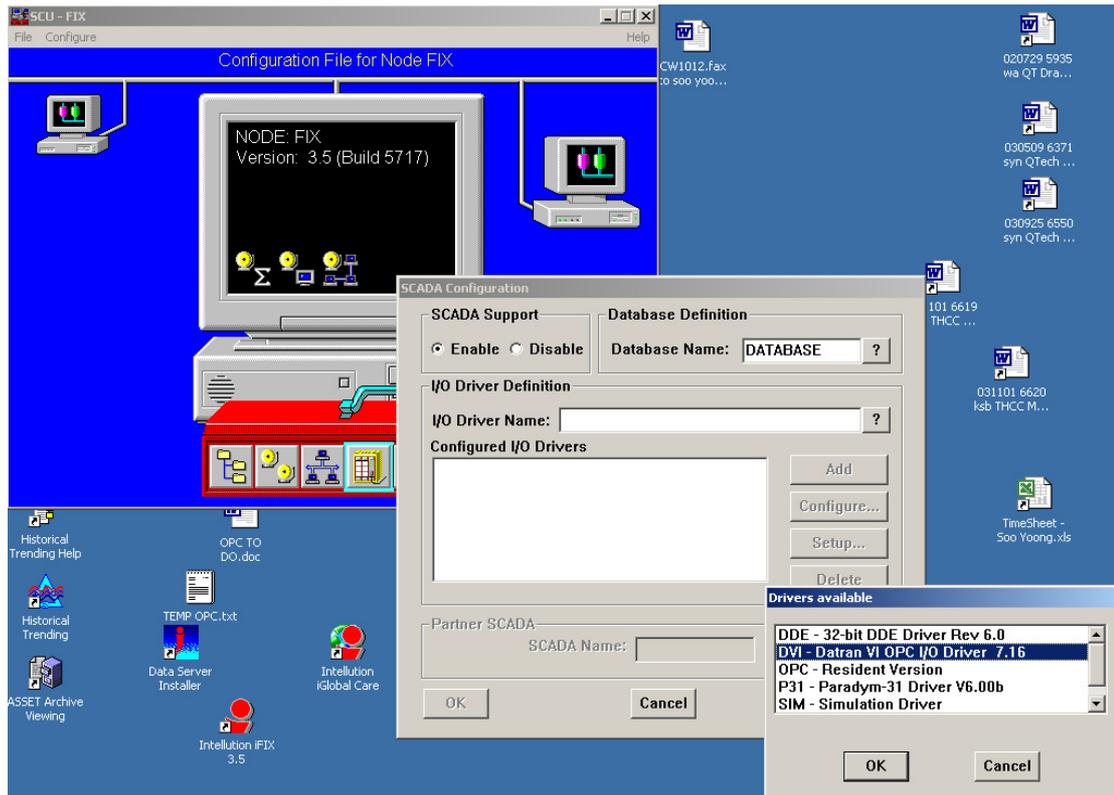
Buttons at the bottom: Restart, OK, Cancel, Help.

9. Restart the XML Data Interface application.
10. Check that the XML Service is not displaying any errors. This can be verified via DATRAN Diagnostics. See the “Checking the XDI – XML Service diagnostics” section.
11. Refresh (press F2) the node “Named Pipe Server” under the application node (XML Data Interface\Server\Named Pipes). It should display the success string “The Named pipe server is running”.
12. Under the XML Service node (XML Data Interface\XML Service), check that the Active node has a value of 1 and that the Security Expiry time value is after now.



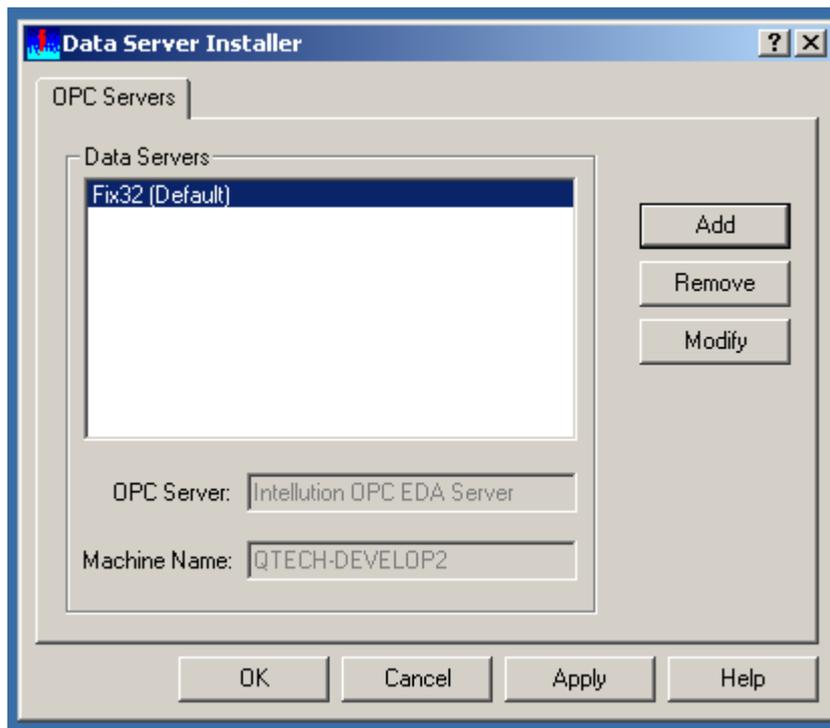
3.2 Installing the Server

1. Double click on the Setup.exe file.
2. Click the Next button at the initial welcome screen.
3. Click the Next button at the License Agreement screen if you agree with the license. If not, click Cancel.
4. Click the Next button at the installation directory screen if you are satisfied with the default directory. If not, click the Browse button to choose another directory. It is recommended that the server be installed in C:\Dynamics so that the FIX can see the server as one of its drivers in the SCADA Configuration Dialog Box.



5. Leave the selection as Server in the Node Type screen and click the Next button.
6. Click the Next button at the FIX node name screen if you are satisfied with the default node name. If not, change the node name.
7. Click the Next Button at the program folder screen if you are satisfied with the default program folder. If not, specify which other program folder you want your short cuts to be.
8. When you are done, click the Finish button.
9. A progress bar will be displayed showing the progress of the installation.
10. Once the installation is complete, the Installation Successful screen will display.
11. Click on the Done button.

3.3 Registering the Server with iFIX

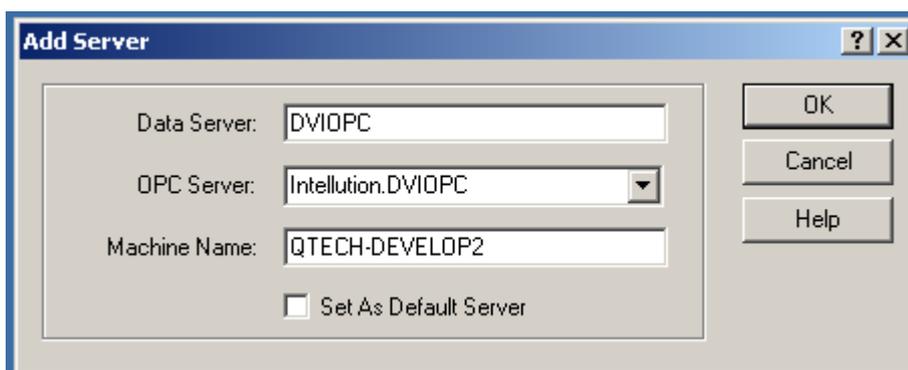


1. Use the Intellution iFIX Data Server Installer to register the server with iFIX.
2. This application (DataServerInstaller.exe) can be found in the directory where iFIX is usually installed by default e.g. C:\Dynamics.



DataServerIns
taller.exe

3. Click the Add button.



4. Provide a name for the data server in the Data Server text box e.g. DVIOPC. This is equivalent to giving a name an ODBC connection.
5. In the OPC Server combo box, choose Intellution.DVIOPC.
6. Ensure that the name of the computer in Machine Name text box is where the server is installed.
7. Click OK.
8. The server is now ready to be used.

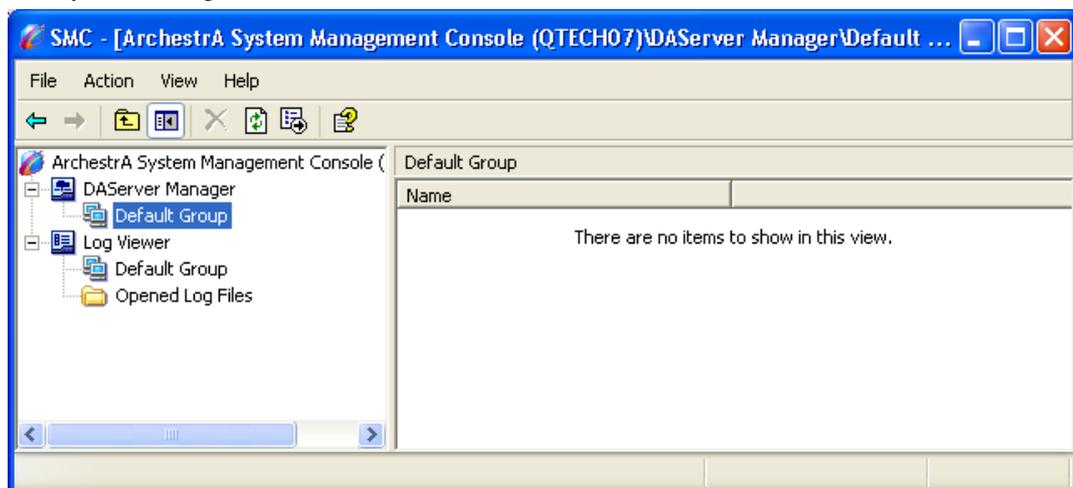
9. Start the OPC client and it should start up the server, as it is set for auto run by default.

3.4 Un-registering the Server with iFIX

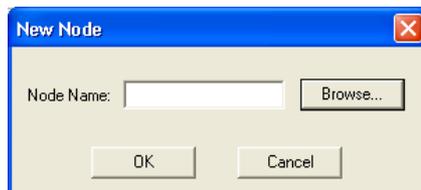
1. Using the Data Server Installer, choose the server from the Data Servers list and click the Remove button.
2. Click the OK button.
3. The server is now unregistered from iFIX.

3.5 Registering the Server with InTouch

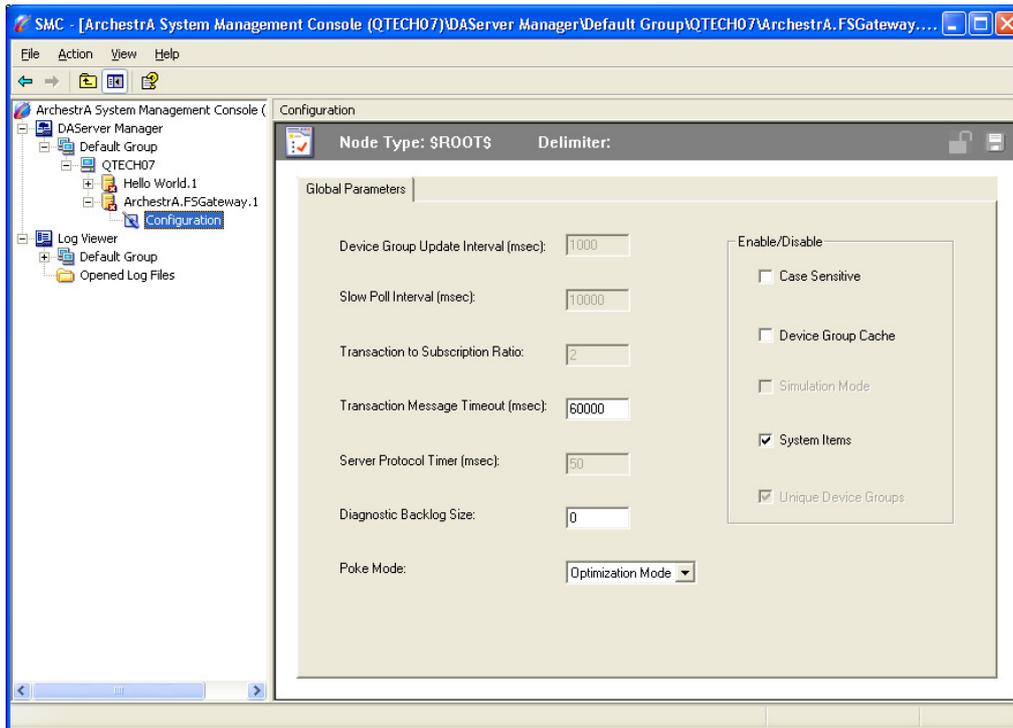
1. Start the DATRAN OPC I/O Driver Server and connect it to a DATRAN system that has been started.
2. Use the Wonderware System Management Console to register the server with InTouch.
3. This application can be usually started by selecting Start -> Programs -> Wonderware -> System Management Console



4. Right click on the ... \DAServer Manager\Default Group node and select New -> Node...

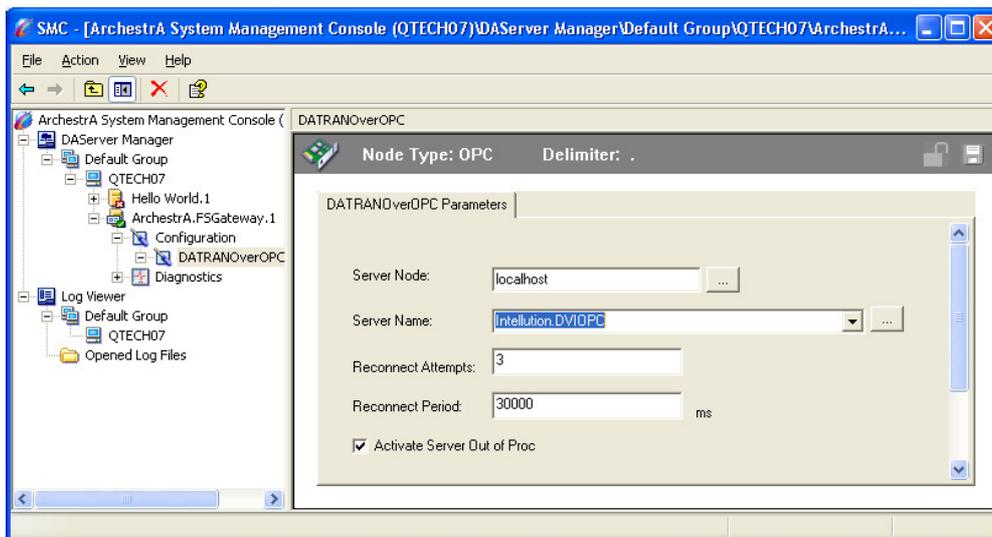


5. Click on the Browse... button and select the computer where the DATRAN OPC I/O Driver Server is installed.
6. Expand the computer's node.
7. Right click on the ArchestrA.FSGateway.1 node and select Activate Server.
8. Expand the ArchestrA.FSGateway.1 node.
9. Right click on the Configuration node.



10. Select Add OPC Object.

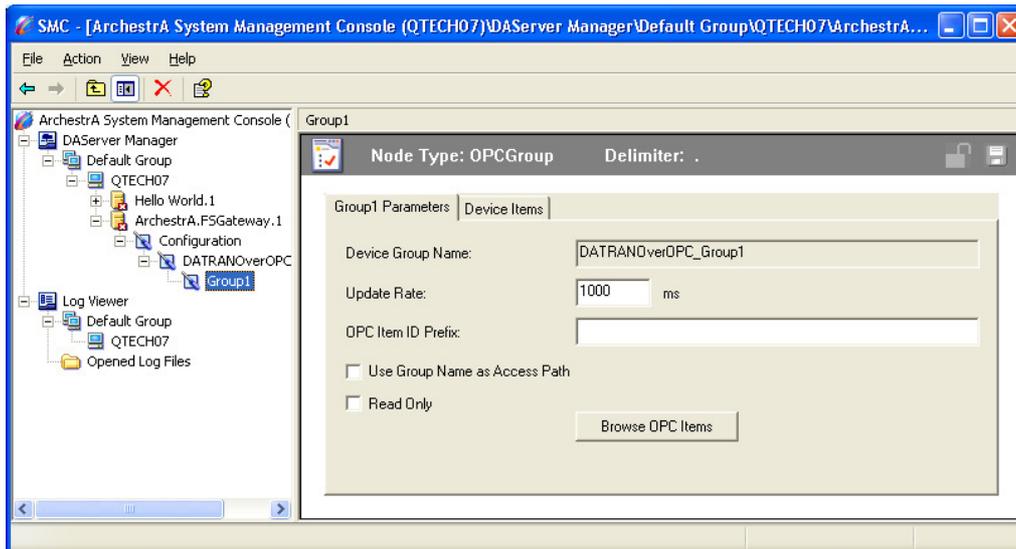
11. Rename the OPC object to “DATRANOverOPC”.



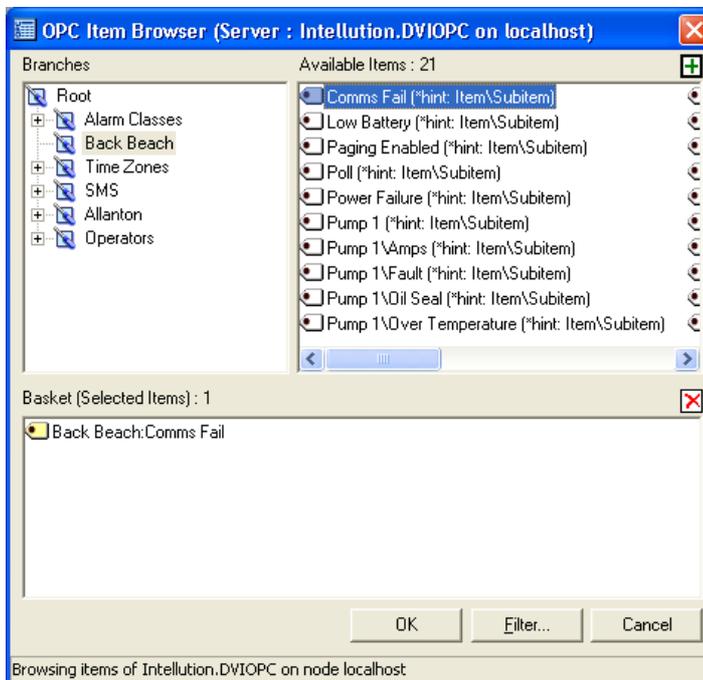
12. In the Server Name combo box. Click on the “...” button. Select “Intellution.DVIOPC”.

13. Right click on the “DATRANOverOPC” node and select Add OPCGroup Object.

14. Rename the OPCGroup object to “Group1”.



15. Click on the Browse OPC Items button.



16. Click and drag the Comms Fail item into the Basket. Click the OK button.

17. Save your configuration by clicking on the save button. 

18. Start InTouch WindowMaker

19. In the main menu select Special -> Access Names...

20. Click the Add... button

21. Fill in the controls as shown in the following screen shot

Modify Access Name

Access:

Node Name:

Application Name:

Topic Name:

Which protocol to use

DDE SuiteLink Message Exchange

When to advise server

Advise all items Advise only active items

Enable Secondary Source

22. Click OK and click the Access Names dialog box Close button.
23. In the main menu select Special -> Tagname Dictionary...
24. Click New
25. Fill in the controls as shown in the following screen shot

Tagname Dictionary

Main Details Alarms Details & Alarms Members

Tagname: I/O Real

\$System Read only Read Write

Comment:

Log Data Log Events Retentive Value Retentive Parameters

Initial Value: Min EU: Max EU:

Deadband: Min Raw: Max Raw:

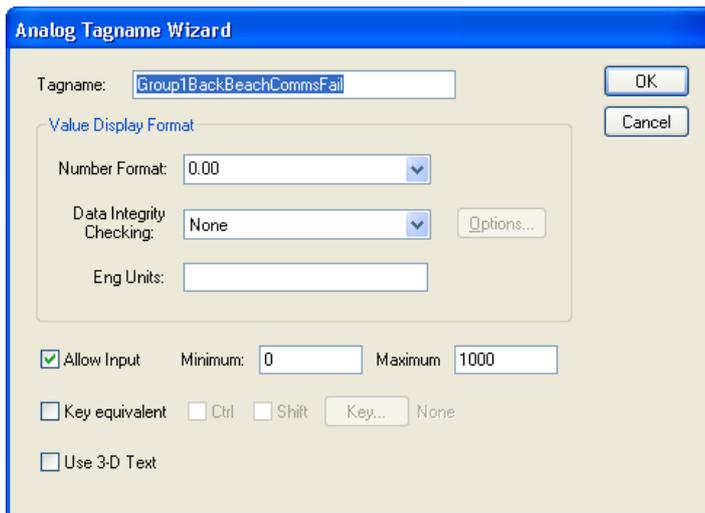
Eng Units: Log Deadband:

Linear Square Root

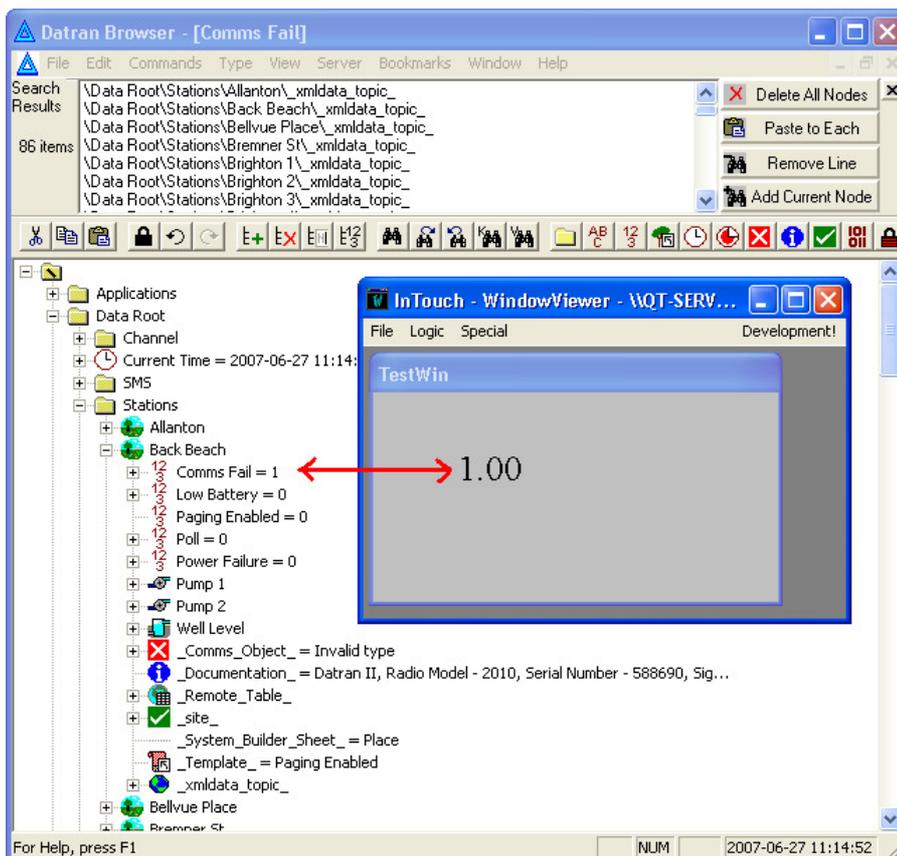
Group1

Item: Use Tagname as Item Name

26. Click Save and then click Close
27. Click Wizards... button 
28. Select Value Displays and select Analog Tagname Display. Click OK.
29. Click on the window.
30. Double click on the Analog Tagname Display and specify Tagname as "Group1BackBeachCommsFail". Tick the Allow Input checkbox. Click OK.



31. Click on the Runtime! button.
32. Change the value of the ...\Back Beach\Comms Fail node inside the TBD file. Ensure that the value changes accordingly inside InTouch.
33. Try to change the value in the TBD file via InTouch. If this does not work, check that you have entered the Write Username and Write Password inside the DATRAN OPC I/O Driver Server.



3.6 Uninstalling the Server

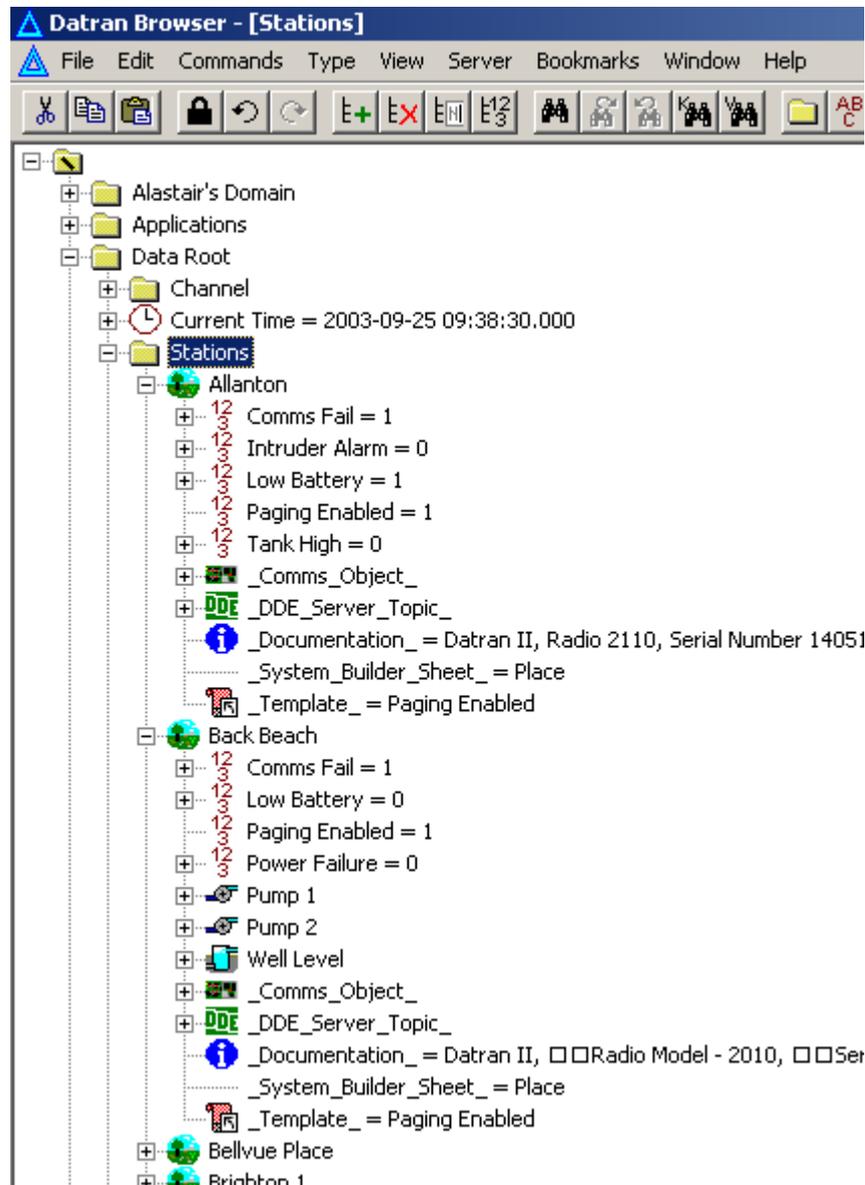
1. Open the Windows Add/Remove Programs window from the Control Panel.
2. Click on the Change/Remove button.
3. Click the Yes button at the prompt.
4. The DVI I/O Server Uninstall screen will display showing the progress.
5. Once it is complete, the screen will display “Uninstall was successful”.

6. Click the OK button.
7. The server is now uninstalled from the computer.

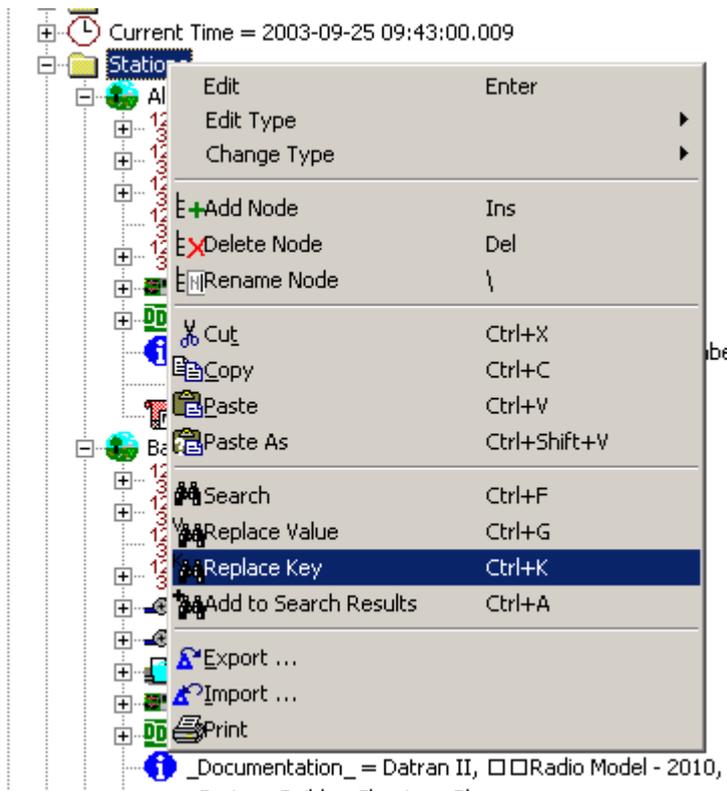
4. MIGRATING FROM DDE SERVER TO OPC SERVER

The XDI application should be installed before proceeding.

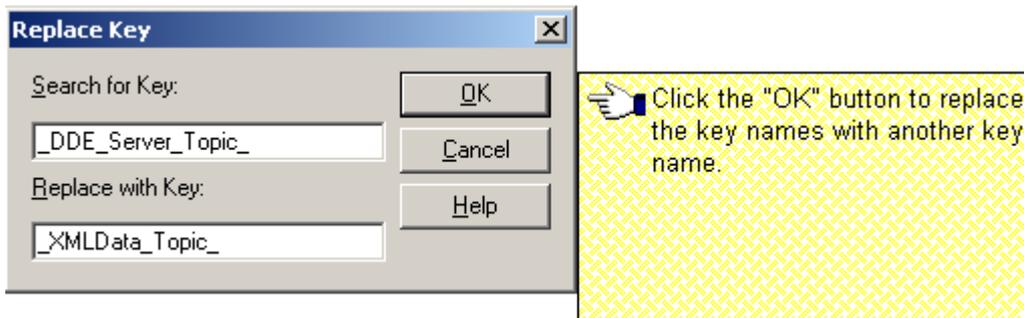
1. Select the node in the TBD file, which is the parent node for most of the `_DDE_Server_Topic_` nodes.



- Right click on the node selected and select Replace Key or press Ctrl + K.



- In the Search for Key text box, type in this string “_DDE_Server_Topic_”.
- In the Replace with Key text box, type in this string “_XMLData_Topic_”.
- Click on the OK button.



- A message box should appear stating how many nodes have been renamed.

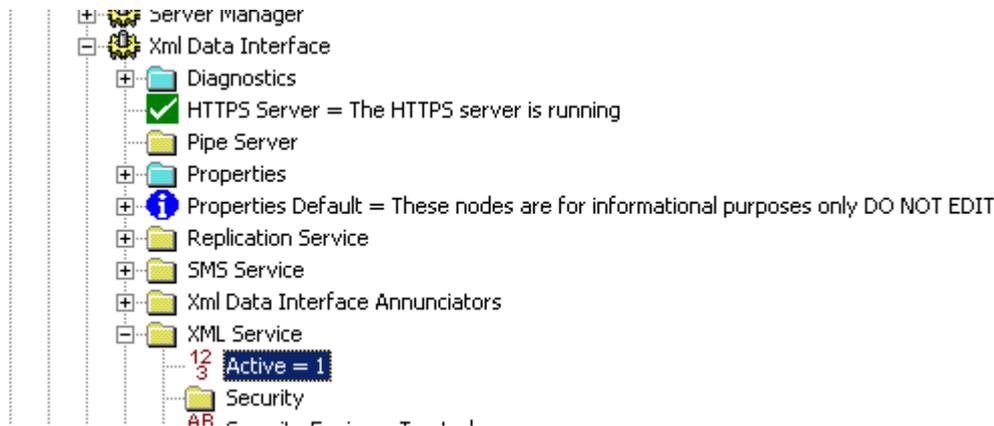


- Repeat steps 1 to 6 to rename other _DDE_Server_Topic_ nodes located elsewhere.

5. TROUBLESHOOTING

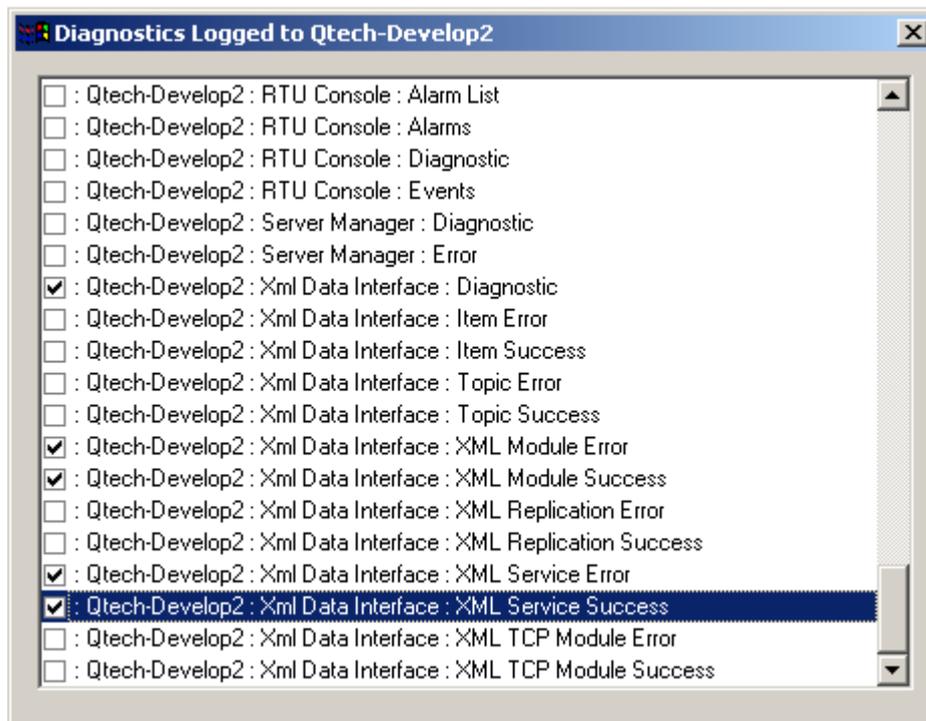
5.1 There is no response from the XDI – XML Service

Check that the Active node is set to 1 for the XDI – XML Service. Also ensure that the computer has the license to enable the XML Service.



5.2 Checking the XDI – XML Service diagnostics

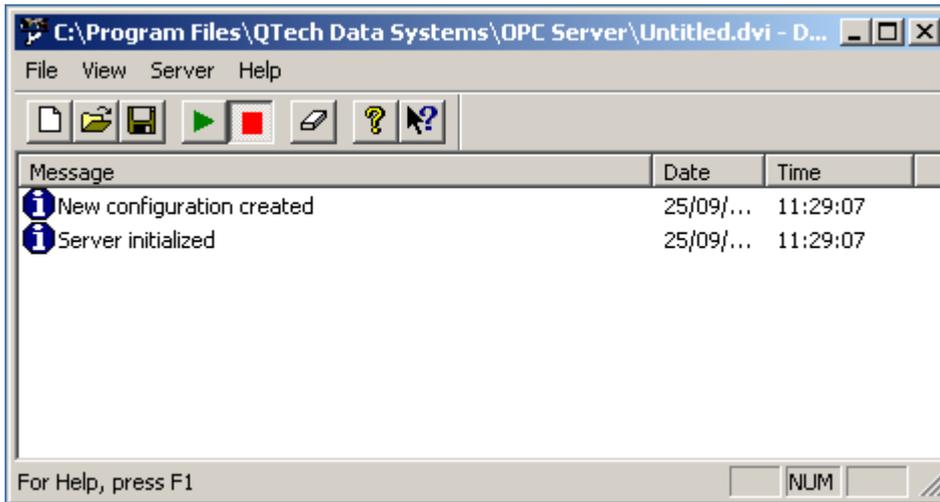
In DATRAN Diagnostics press F2 and select the XML Module & XML Service diagnostics. In the example shown below, the name of the computer is Qtech-Develop2.



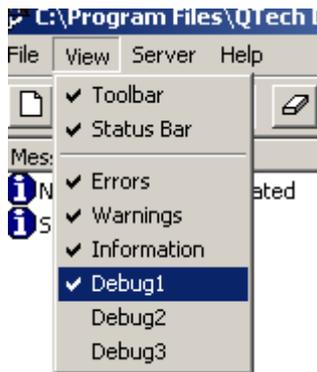
5.3 Opening the DVI Power Tool application to troubleshoot

1. Open the application via Start menu → Program → iFIX → DVI Power Tool. Note that the DVI Power Tool short cut could have been installed in another program folder e.g. DATRAN VI.

- The DVI Power Tool application makes the OPC I/O Driver Server visible.



- In the OPC I/O Driver Server window, go to View on the main menu and check all the diagnostics message types i.e. Information, Debug1, Debug2 and Debug3.



5.4 OPC I/O Driver Server not communicating with XDI – XML Service

- Open the DVI Power Tool application
- Double click the DVI node to expand the tree
- Then select the DATRAN XML Data Interface channel. Ensure that these parameters are correct

Server: (local)
 Username: QTech (must be identical to XDI General Information setup)
 Password: Cannon (must be identical to XDI General Information setup)
 Max Items: 20 (lower this value if exception messages appear in the OPC I/O Driver Server window)

- Enable the Channel (check the Enable box on the top right hand side)
- Start the server if not already started.

5.5 Cannot View Value in iFIX Database Manager

This can happen when the wrong block type has been used. For example, using a digital input block type for a data block of data type double. Using the correct block type will resolve this problem e.g. using an analogue input block type for a data block of data type double.

This can also happen if the data block has been deleted via Power Tool. If this happened, restart the server.

6. THINGS TO TAKE NOTE

- ❑ Any item with a string value of more than 256 characters will be truncated after the 256th character.
- ❑ Because each item is automatically allocated a 256-byte data block regardless of its data type, the maximum number of items per topic is limited to 524287. When new items are added in the TBD file after this limit has been exceeded, these items will not be added into the server.