

Tech Note 686

Using FSGateway and SuiteLink® to Replace NETDDE

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Introduction

This Tech Note outlines using FSGateway to communicate with off-node (remote) DDE data sources using SuiteLink instead of NETDDE.

Application Versions

- Industrial Application Server 2.1 and later
- Wonderware Application Server 3.1
- FSGateway 1.5 SP1
- KEPServer 4.5

Why Stop Using NETDDE

NETDDE is not supported in new Microsoft Operating Systems. Microsoft is beginning to remove NETDDE functionality from operating systems due to security vulnerability concerns. NetDDE was still included with Windows Server 2003 and Windows XP Service Pack 2, although it was disabled by default. It has been removed entirely beginning in Windows Vista and 2008 Server. Local DDE is still supported.

For more information, **see this Technet article**.

Communicating with Legacy DDE IO Servers and Remote Data Sources

You can use FSGateway as a DDE-to-SuiteLink-to-DDE protocol converter (Figure 1 below).

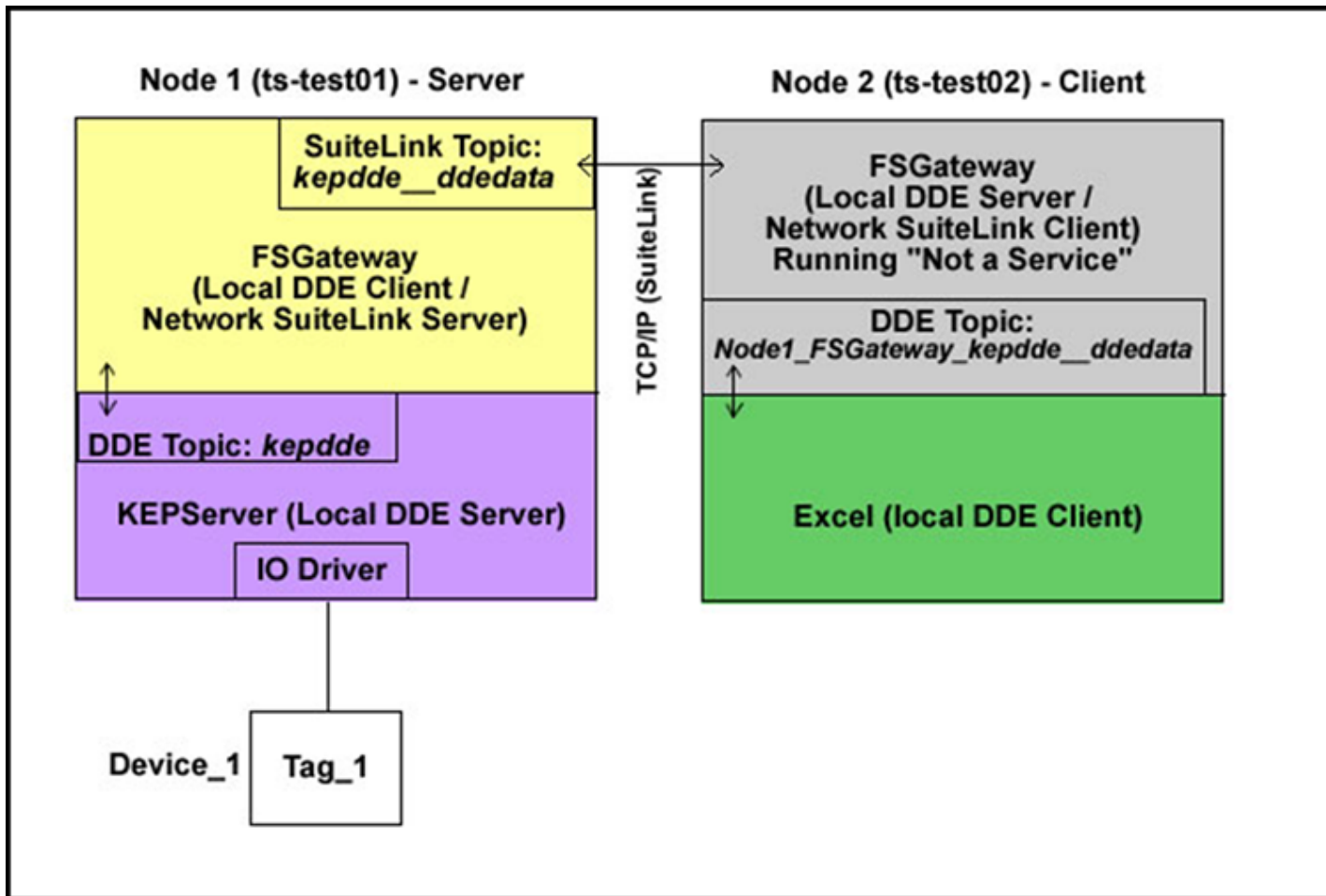
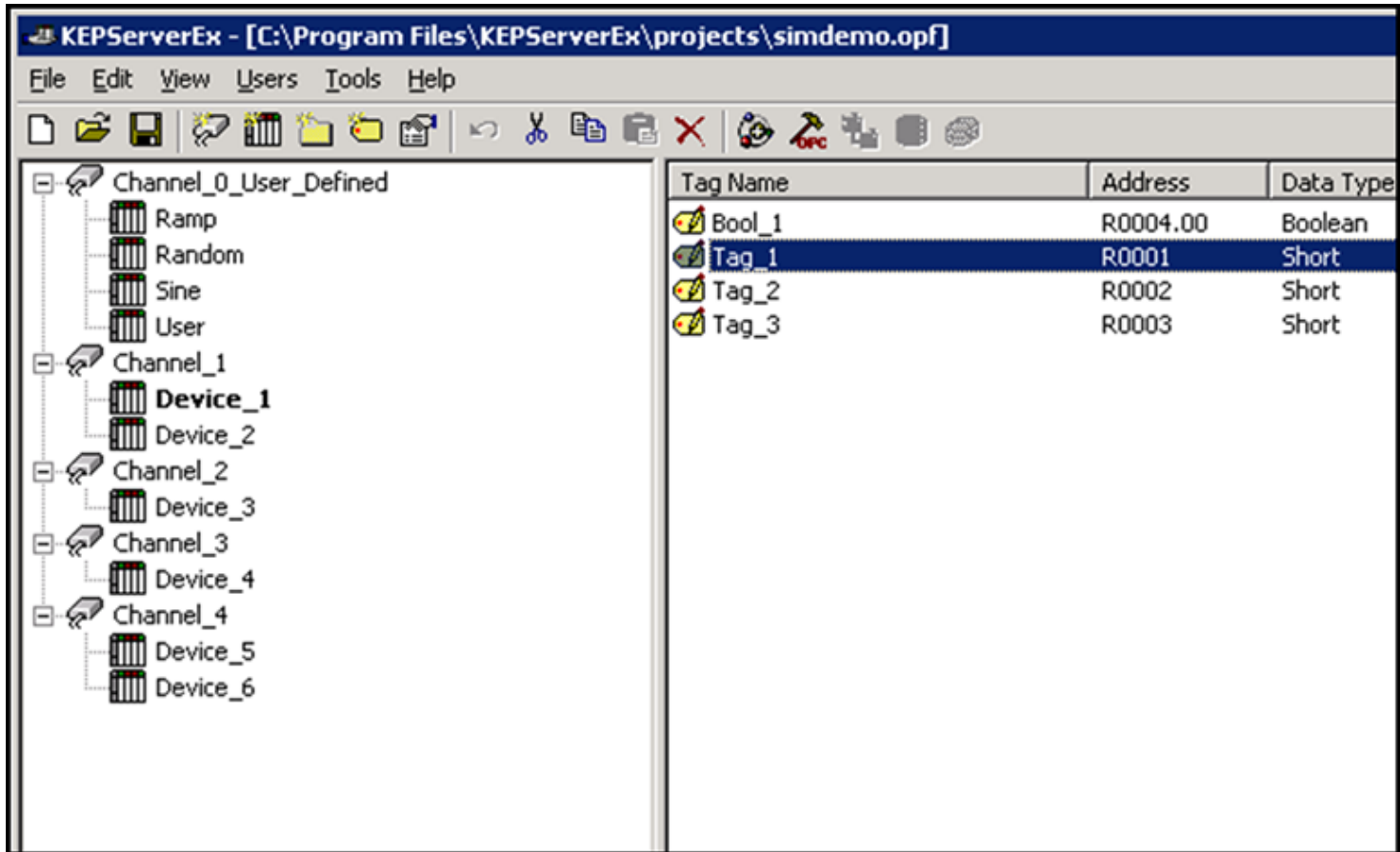


FIGURE 1: CONFIGURATION OVERVIEW

Node 1 Configuration

Use KEPServer as DDE Server and FSGateway as a Local DDE Client.

KEPServer is the local DDE data source with item **Channel_1.Device_1.Tag_1** and FSGateway as the client (Figures 2 & 3 below).



The screenshot displays the KEPServerEx application window. The title bar reads "KEPServerEx - [C:\Program Files\KEPServerEx\projects\simdemo.op]". The menu bar includes "File", "Edit", "View", "Users", "Tools", and "Help". The toolbar contains various icons for file operations and project management. The left pane shows a hierarchical tree structure with the following items:

- Channel_0_User_Defined
 - Ramp
 - Random
 - Sine
 - User
- Channel_1
 - Device_1
 - Device_2
- Channel_2
 - Device_3
- Channel_3
 - Device_4
- Channel_4
 - Device_5
 - Device_6

The right pane displays a table of tags:

Tag Name	Address	Data Type
Bool_1	R0004.00	Boolean
Tag_1	R0001	Short
Tag_2	R0002	Short
Tag_3	R0003	Short

FIGURE 2: KEPSERVER ITEM

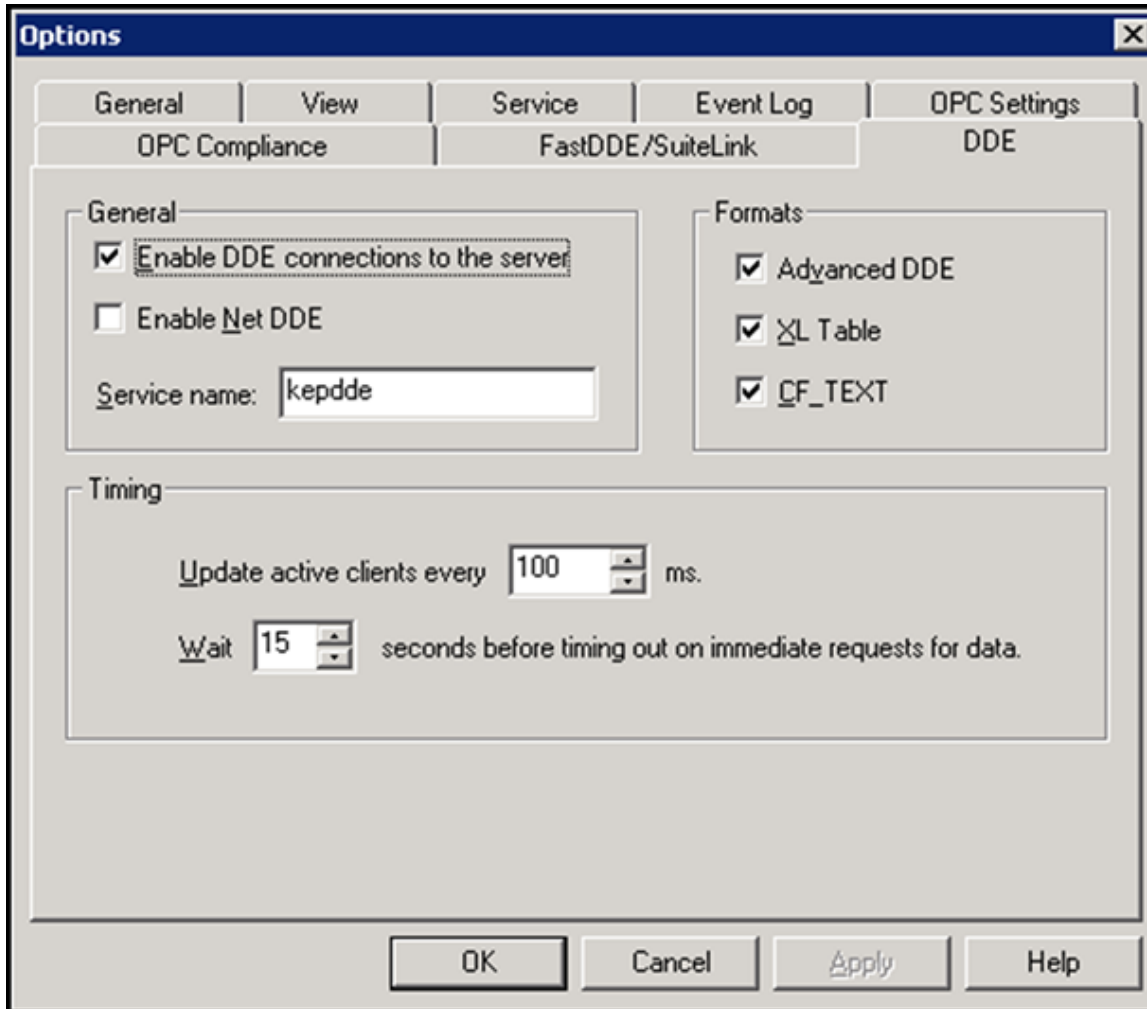


FIGURE 3: KPSERVER DDE CONFIGURATION

Install FSGateway on Node 1, launch the System Management Console (SMC) and configure FSGateway as follows:

1. Add a DDE Object (Figure 4 below).

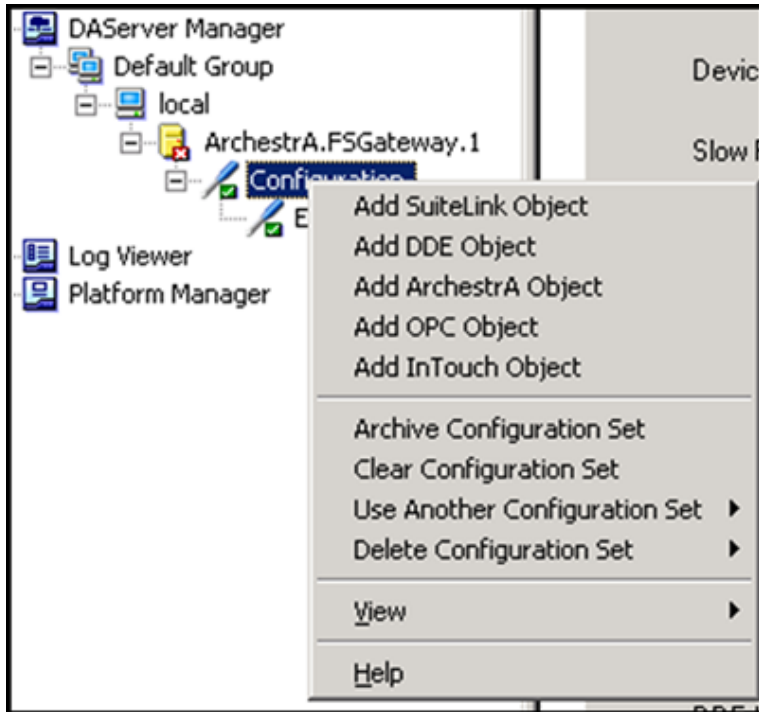
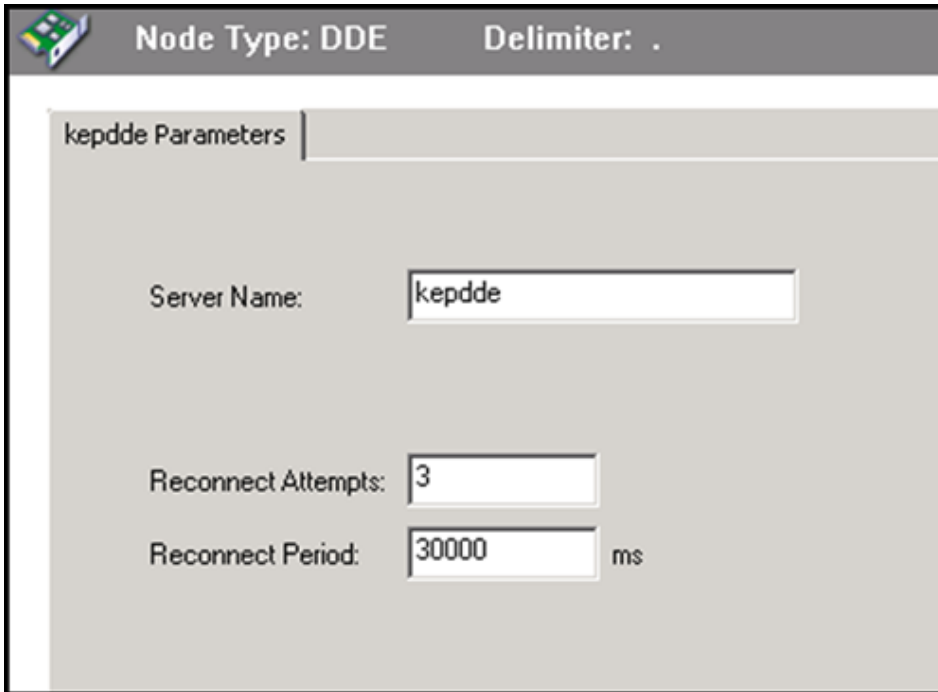


FIGURE 4: ADD FSGATEWAY DDE OBJECT

2. Type the DDE Server Name (usually the executable as it would appear in Task Manager). In this case the KEPServer service name is **kepdde** (Figure 5 below).



The screenshot shows a configuration window for a DDE node. At the top, it says "Node Type: DDE" and "Delimiter: .". Below this is a tab labeled "kepdde Parameters". There are three input fields: "Server Name:" with the value "kepdde", "Reconnect Attempts:" with the value "3", and "Reconnect Period:" with the value "30000" and "ms" next to it.

FIGURE 5: DDE SERVER NAME

3. Add a Topic Object (Figure 6 below).

In this case we will use the KEPServer default DDE Access Name **_DDEData**.

On this screen, the **Topic Name** is the topic name on the data source. The **Device Group Name** is the topic name that clients of FSGateway will reference to read data. If you need a different Topic Name than what you named the configuration object in the hierarchy, you can check the **Change Topic Name** option.

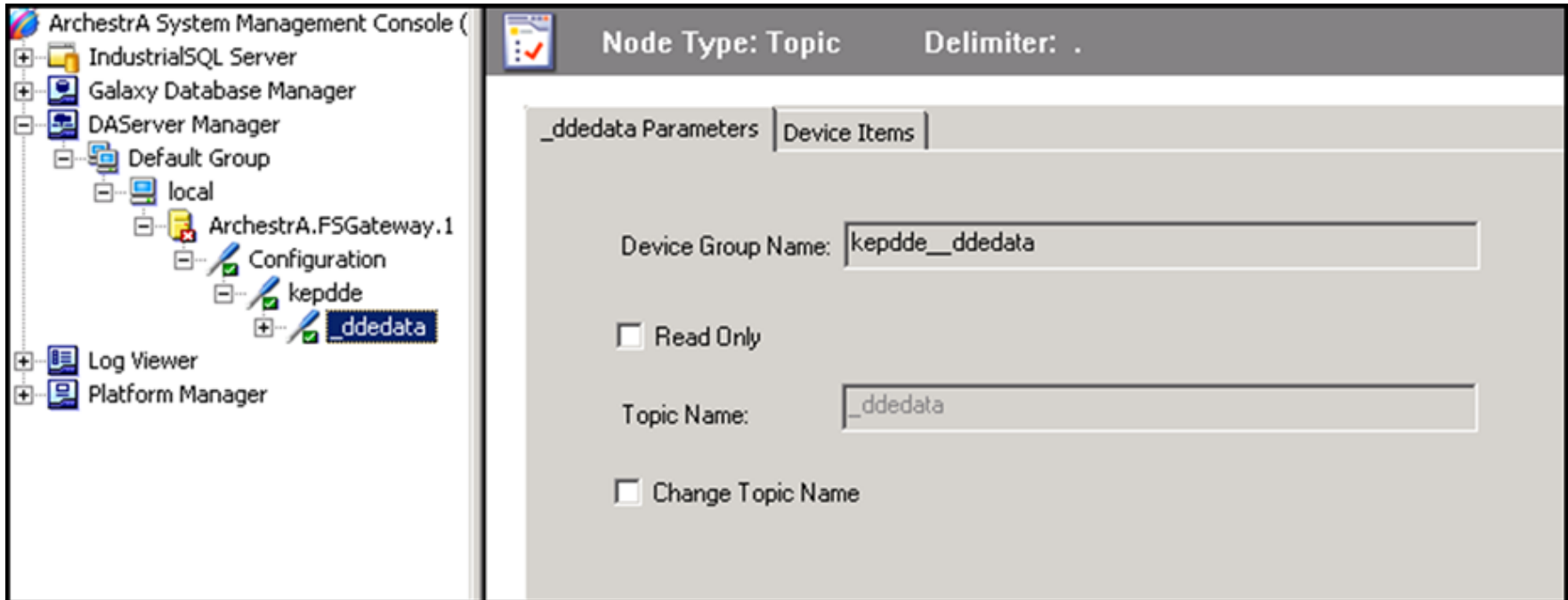


FIGURE 6: ADD TOPIC OBJECT

4. Save all changes and start FSGateway.

Node 2 Configuration

Excel reads from the local FSGateway (via DDE), which then reads from Node 1 FSGateway using SuiteLink

FSGateway is the local DDE source with Excel as the client. FSGateway on Node 2 is a SuiteLink client of FSGateway on Node 1.

Install FSGateway on Node 2, launch the System Management Console (SMC), and configure FSGateway as follows:

1. Right-click **FSGateway** and configure it as **Not A Service**. (Figure 7 below).

Note: This is a very important step. You will not be able to establish communications to FSGateway via local DDE if it is set to run as a service.

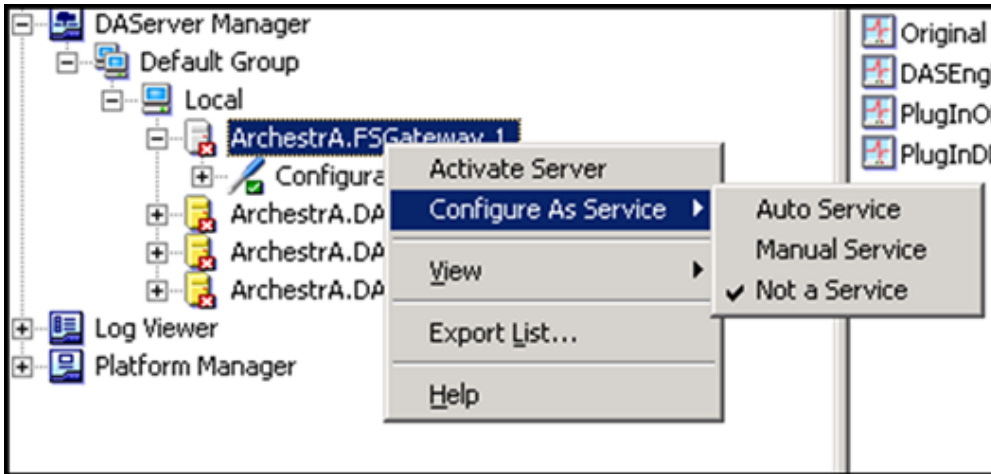


FIGURE 7: SET FSGATEWAY TO NOT A SERVICE

2. Add a SuiteLink Object (Figure 8 below).

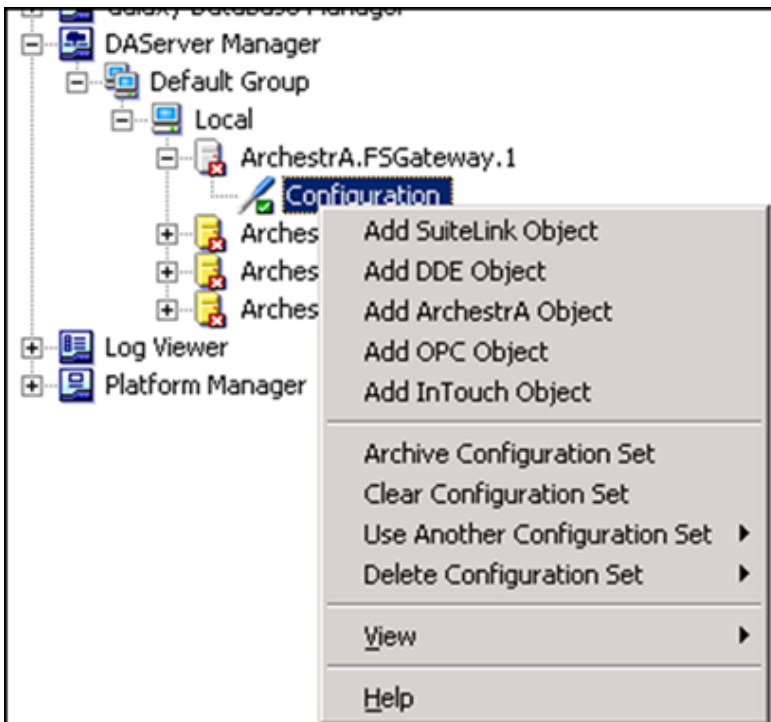
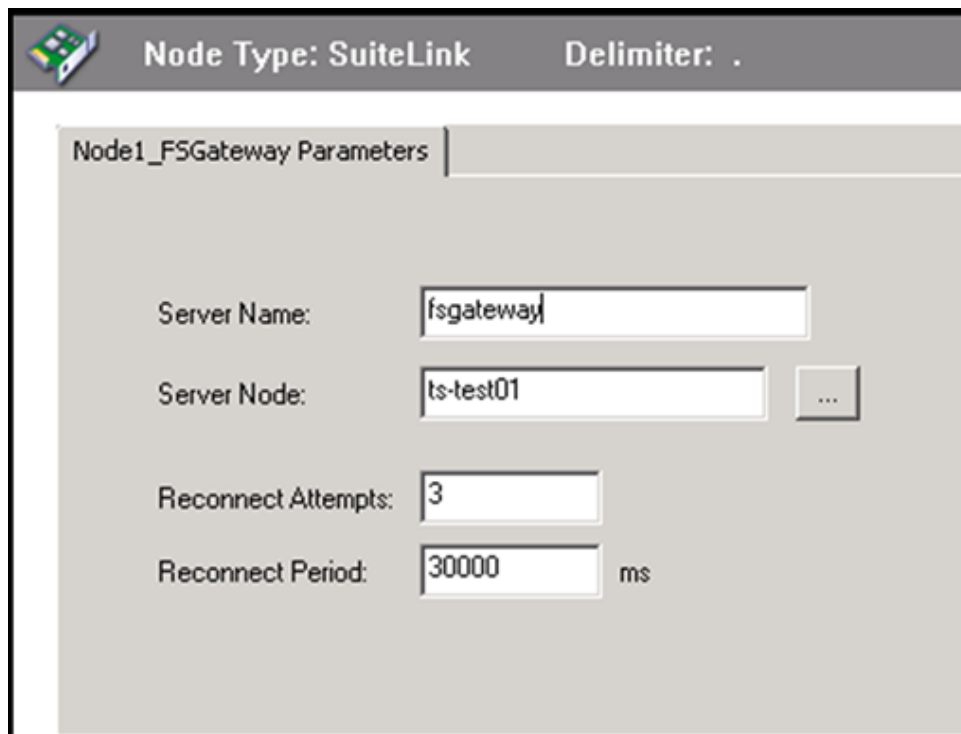


FIGURE 8: ADD FSGATEWAY SUITELINK OBJECT

3. Type the **SuiteLink** Server Name. In this example, FSGateway refers to the FSGateway *application* running on Node 1, the SuiteLink Server Node. **ts-test01** is the network name of Node 1 (Figure 9 below).



The screenshot shows a configuration window titled "Node Type: SuiteLink" and "Delimiter: ." with a sub-header "Node1_FSGateway Parameters". It contains four input fields: "Server Name" with the value "fsgateway", "Server Node" with the value "ts-test01" and a browse button "...", "Reconnect Attempts" with the value "3", and "Reconnect Period" with the value "30000" and the unit "ms".

FIGURE 9: SUITELINK SERVER NAME AND SERVER NODE

4. Add a Topic Object (Figure 10 below).

This needs to match the Device Group Name for the FSGateway DDE object on Node 1. In this case the topic is **kepdde__ddedata** (note that there is a double underscore in this example).

On this screen, the Topic Name is the topic name on the SuiteLink data source. The Device Group Name is the topic name that *local* clients of FSGateway will reference to read data. If you need a different Topic Name than what you named the configuration object in the hierarchy, you can check the **Change Topic Name** option.

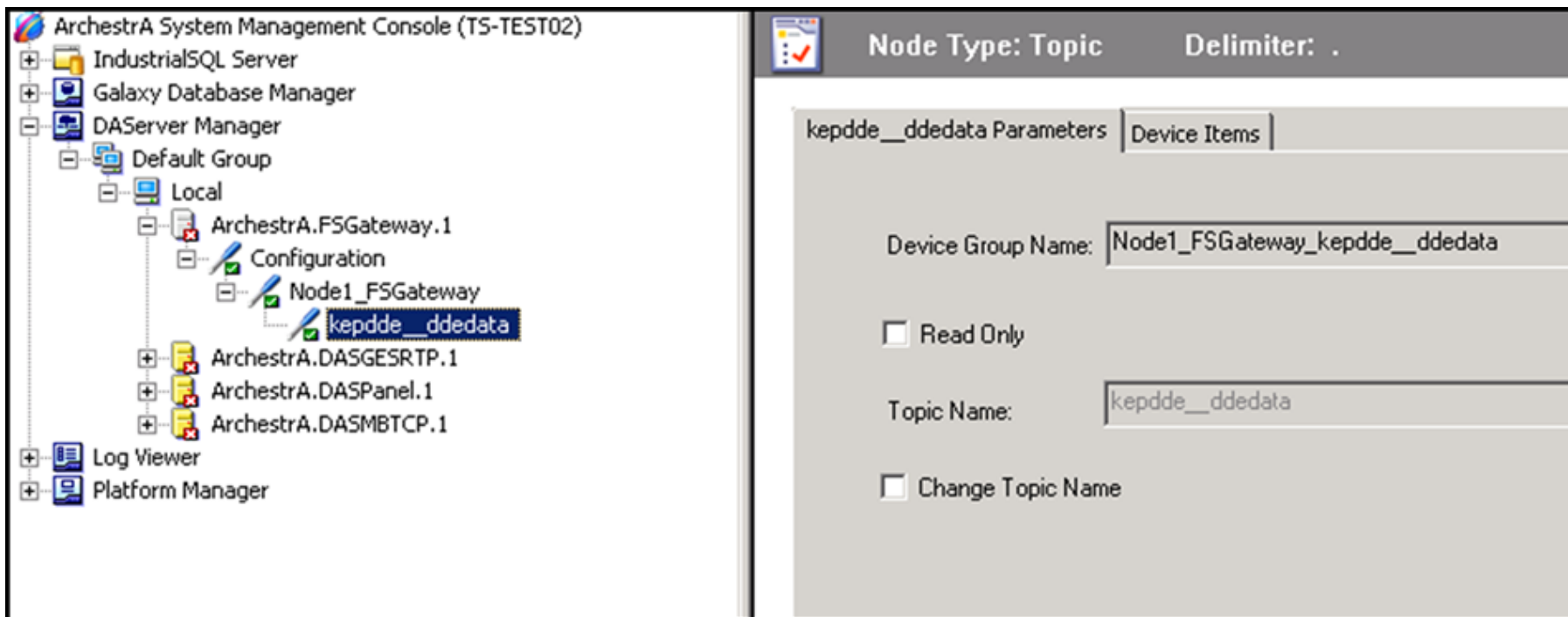


FIGURE 10: ADD TOPIC OBJECT

5. Save all changes.

DO NOT activate FSGateway from the SMC.

Start it by double-clicking the exe file at **C:\Program Files\Wonderware\DA Server\FSGateway\Bin\FSGateway.exe**.

Note: This is a very important step. You will not be able to establish communications to FSGateway via local DDE if it is set to run as a service, *and* is activated from the SMC.

6. Launch Microsoft Excel.
7. Enter the DDE formula in a cell (**=application|topic!item**) and press Enter (Figure 11 below).

For this example:

- **Application:** FSGateway
- **Topic:** Node1_FSGateway_kepdde__ddedata (This is the local FSGateway Device Group Name)
- **Item:** Channel_1.Device_1.Tag_1

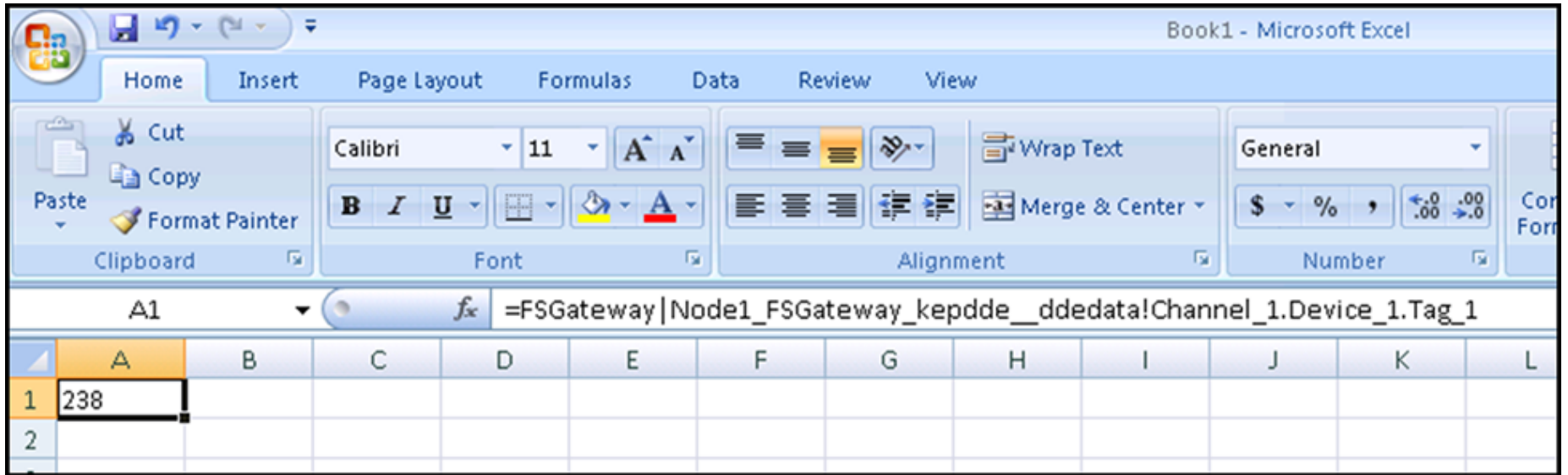


FIGURE 11: DATA DISPLAYED IN EXCEL

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