Configuring FactorySuite Gateway for Communication Between a DDE Client and an ArchestrA® Data Source

Introduction

FactorySuite Gateway (FSGateway) is a protocol converter that enables communication between clients and data sources that use different data access protocols. This Tech Note explains the configuration required to enable DDE Client access to an ArchestrA data source.

Although you can use this Tech Note as a reference to configuring communication between any DDE Client and an ArchestrA data source, Microsoft® Excel is used in this example as the DDE Client.

Assumptions

- For this Tech Note, FSGateway, Excel, and the ArchestrA data sources are on the same node.

- IAS contains a UserDefined object named **Counters**. The Counters object contains two UDAs named **CountDown** and **CountUp** with a data type of integer. The Counters object also contains a script that runs every second that increments the CountUp UDA from 0 to 999 and decrements the CountDown UDA from 999 to 0.

  IAS object configuration is explained.

- This Technote assumes a thorough knowledge of Industrial Application Server (IAS).

Configuring Industrial Application Server

1. Create a new Galaxy.

2. Create a new instance of a WinPlatform, AppEngine, Area, and a UserDefined object (named Counters).

   Arrange them to resemble Figure 1 (below):

   FIGURE 1: PLATFORM/ENGINE/AREA/COUNTERS

3. Open the UserDefined object (Counters) and add two UDAs named **CountUp** and **CountDown** with a data type of **Integer**:
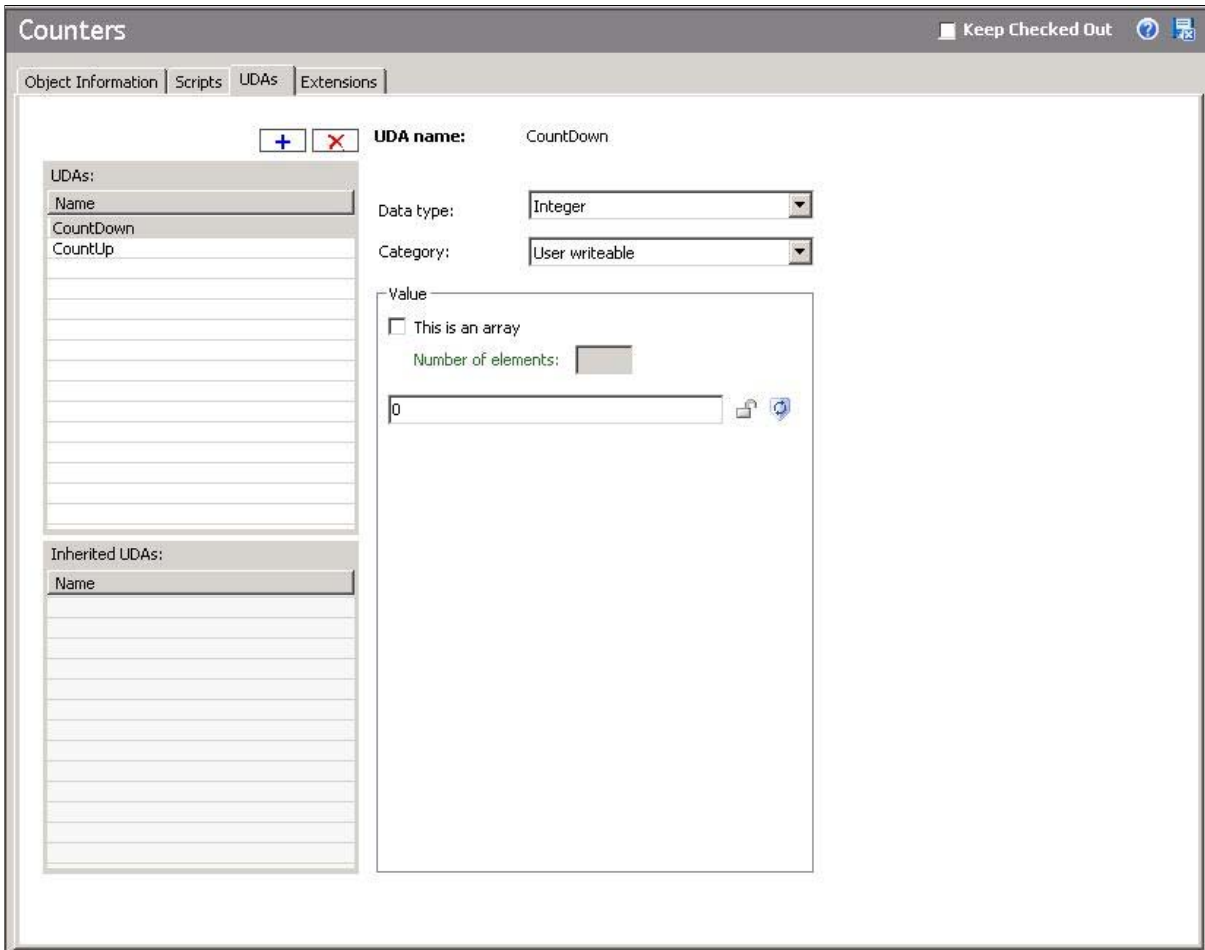
FIGURE 2: COUNTDOWN, COUNTUP UDAs

4. Add a script to the UserDefined object (Counters) named **CountScript**.

This script runs every second and increments the CountUp UDA from 0 to 999 and decrements the CountDown UDA from 999 to 0 (Figure 3 below):
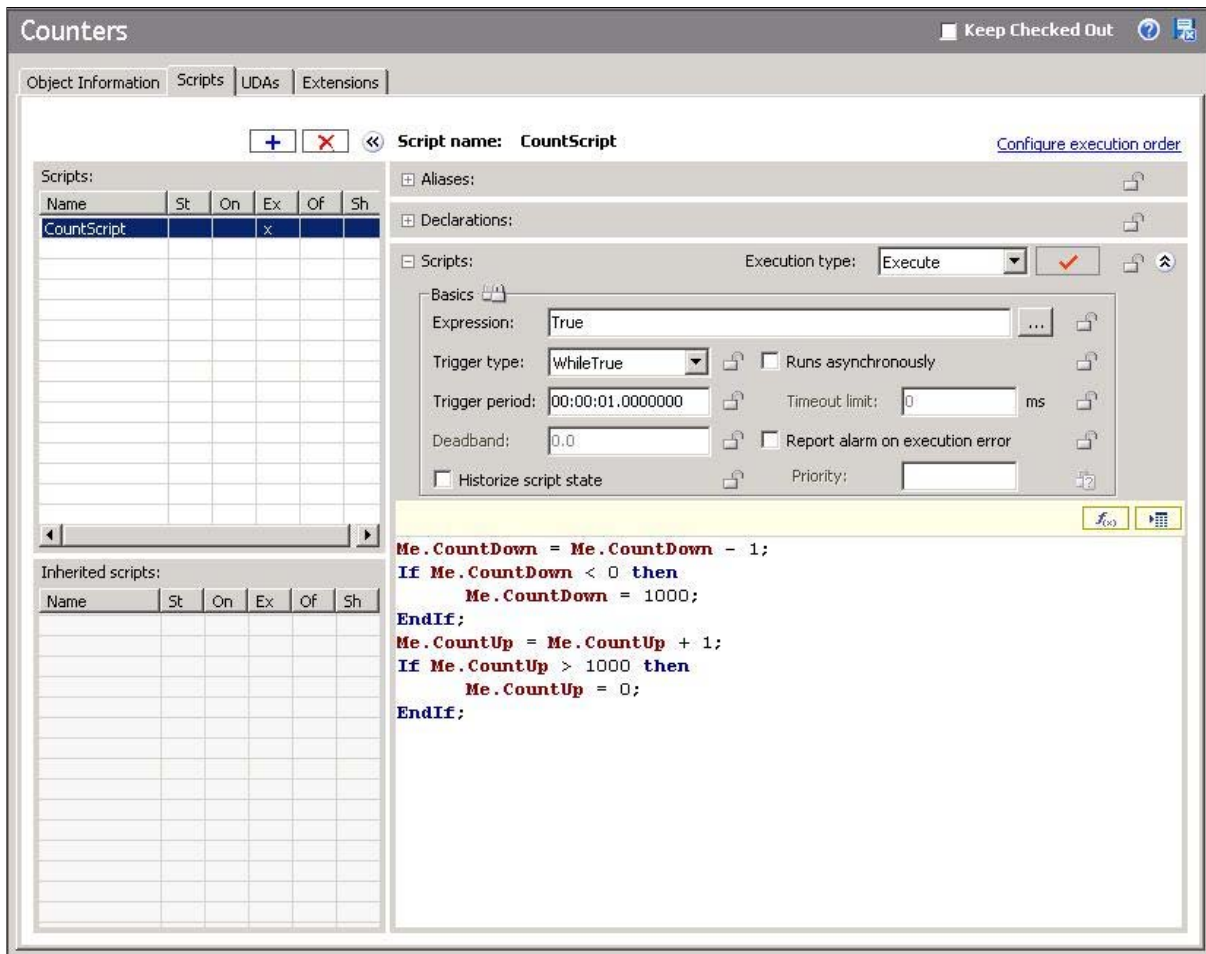
FIGURE 3: COUNTSCRIPT

5. Deploy the Platform, Engine, Area, and Counters objects.

Configure FSGateway

1. Open the ArchestrA System Management Console (SMC) and locate "Configuration" under "ArchestrA.FSGateway.1" in the DAServer Manager.

2. Right-click **Configuration**, then select **Add Archestra Object**.

   You can rename the ArchestrA Object at this point. For this example, **ArchestrA** is the ArchestrA Object name.

3. If ArchestrA has security enabled, enter the credentials used to logon to ArchestrA in the Domain, User Name, and Password fields.

   For this example, security is not enabled so we will leave the fields empty.

   Note: The **Domain** field should have a valid domain name when ArchestrA security authentication mode is "OS Users" or "OS Groups". The domain field should be left empty when ArchestrA security authentication mode is "Galaxy".

4. Save the configuration by clicking on the Disk (Save) icon in the upper right corner of the Editor pane:
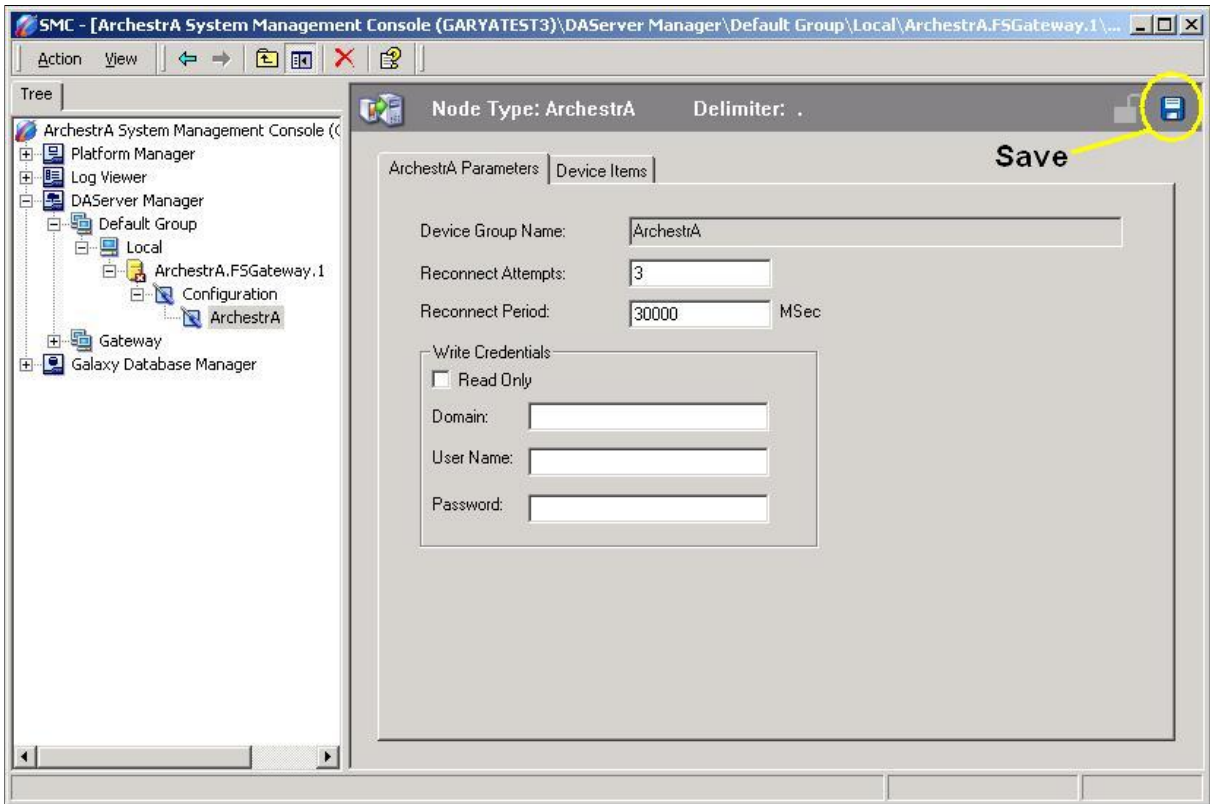
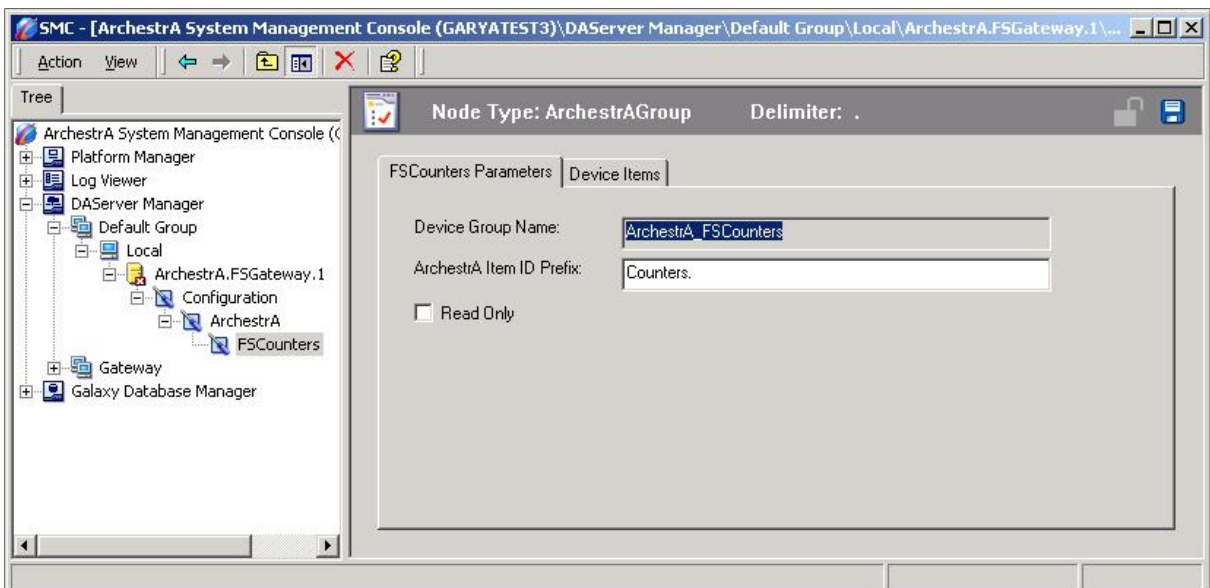**FIGURE 4: SAVE THE OBJECT CONFIGURATION**

5. Right-click the ArchestrA object and select **Add ArchestrAGroup Object**.

   You can rename the ArchestrAGroup object at this point. For this example, **FSCounters** is the ArchestrAGroup object name.

6. Enter the name of the UserDefined object in the **ArchestrA Item ID Prefix** field followed by a period (**Counters.**).

   This will allow us to enter just the UDA name in out DDE Client although this technote will also advise the complete item name in one of the examples.

7. Take note of the **Device Group Name** value (**ArchestrA_FSCounters**). This name will be referenced later when making a DDE connection.

8. Save the configuration by clicking on the Disk (Save) icon in the upper right corner.

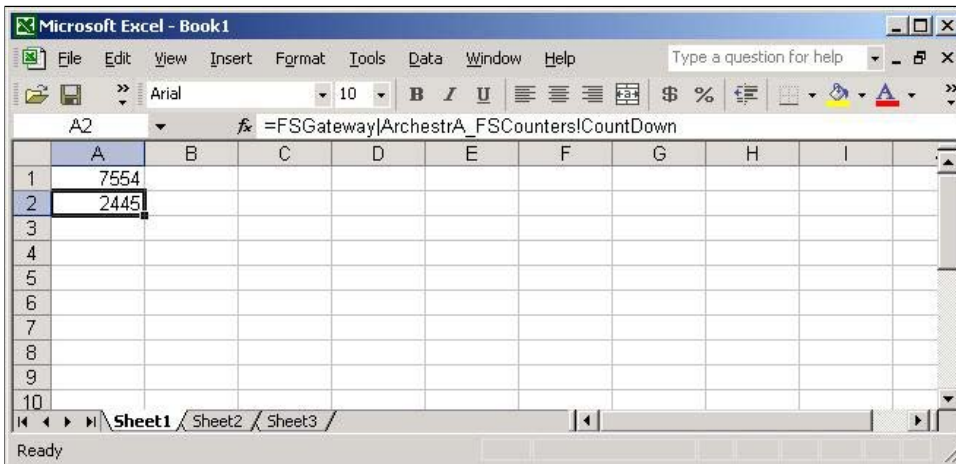**FIGURE 5: SAVE DEVICE GROUP CONFIGURATION**

9. Right-click **ArchestrA.FSGateway.1** and select **Activate Server**.

    FactorySuite Gateway configuration is now complete.

Test the DDE Connection to the ArchestrA Data Source

1. Launch Microsoft Excel.

2. Enter **=FSGateway|ArchestrA_FSCounters!'CountUp'** in cell A1.

3. Enter **= FSGateway|ArchestrA_FSCounters!'CountDown'** in cell A2.

4. You should now see counter values in both cell fields.

    > **Note:** Because we are advising items in the Archestra_FSCounters device group and we entered an ArchestrA Item ID Prefix that points to the Counters object in IAS, we are limited to only items in the Counters object.
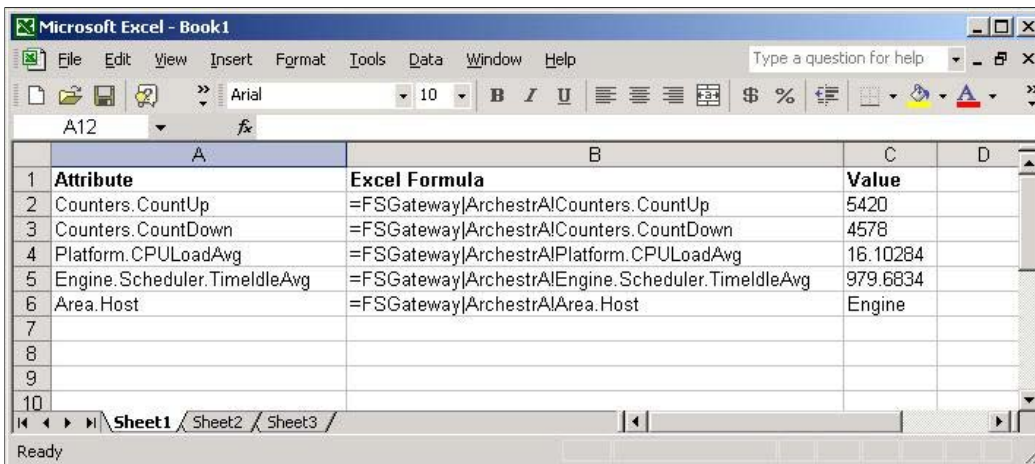
FIGURE 6: COUNTER VALUES IN EXCEL

We can also obtain data by making a DDE connection directly to the FactorySuite Gateway ArchestrA object.

5. Enter **=FSGateway|ArchestrA!'Counters.CountUp'** in cell A2 and enter **=FSGateway|ArchestrA!'Counters.CountDown'** in cell A3.

    This type of connection will not limit you to the Counters object. For example, you could also advise other attributes such as average CPU load, Scheduler Average Idle Time, and Area Host Name:

FIGURE 7: ADVISE OTHER ATTRIBUTES

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