Tech Note 824
Using Microsoft .NET DLLs in Your Application Server Script

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Introduction

This *Tech Note* provides an example of using a Microsoft .NET dll in your Application Server Script. Our example uses the Microsoft System.Speech.dll (Text to Speech library) to annunciate text. You can use this *Tech Note* as a guideline for using methods from any custom or Microsoft .NET dll in your Application Server script.

Several 3rd party libraries are available for annunciating text. Two such libraries (SDKs) from Microsoft are the **Directx** sdk and **SpeechSynthesizer** class from .NET 3.0 and later. For this *Tech Note*, we use the System.Speech.dll SpeechSynthesizer class from .NET 3.0 to annunciate text.

Application Version

- Application Server 3.1 SP3 P01 (the script was tested on the GR node).

Overall Process Tasks

1. **Import the System.Speech.dll**

2. **Create an Instance of the $Userdefined Object**

3. **Confirm the Methods for the System.Speech.dll**

4. **Create UDAs for Use in the ArchestrA Script**

5. **Create the ArchestrA Script**

6. **Deploy and Test the Object**

Import the System.Speech.dll

- Import the .NET dll from the Microsoft .NET framework version 3.0 folders. The DLL is located at **C:\Program Files\Reference Assemblies\Microsoft\Framework\v3.0\System.Speech.dll**.
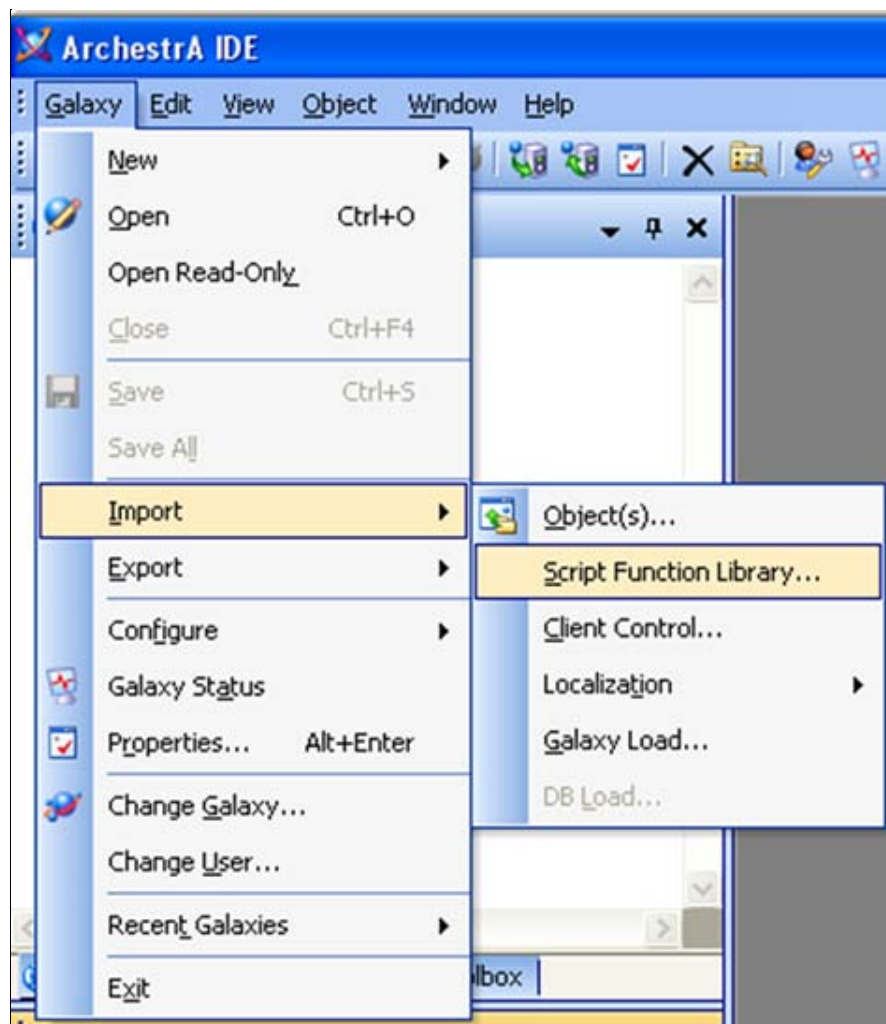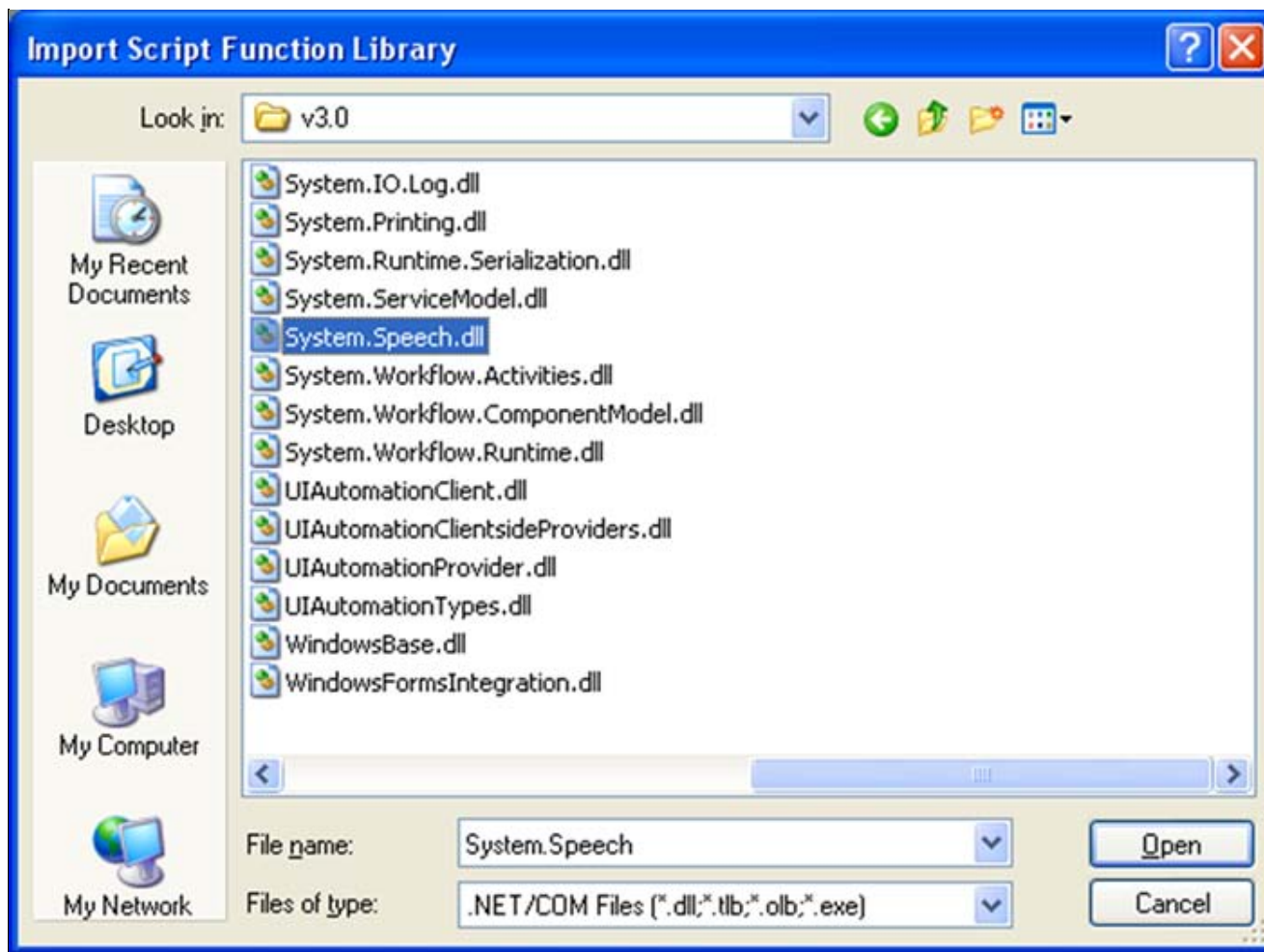
FIGURE 1: IMPORT SCRIPT FUNCTION LIBRARY

FIGURE 2: IMPORT DLL

Create an Instance of the $Userdefined Object

- Create an instance from $UserDefined template. This example is called **UDTextToSpeech**.
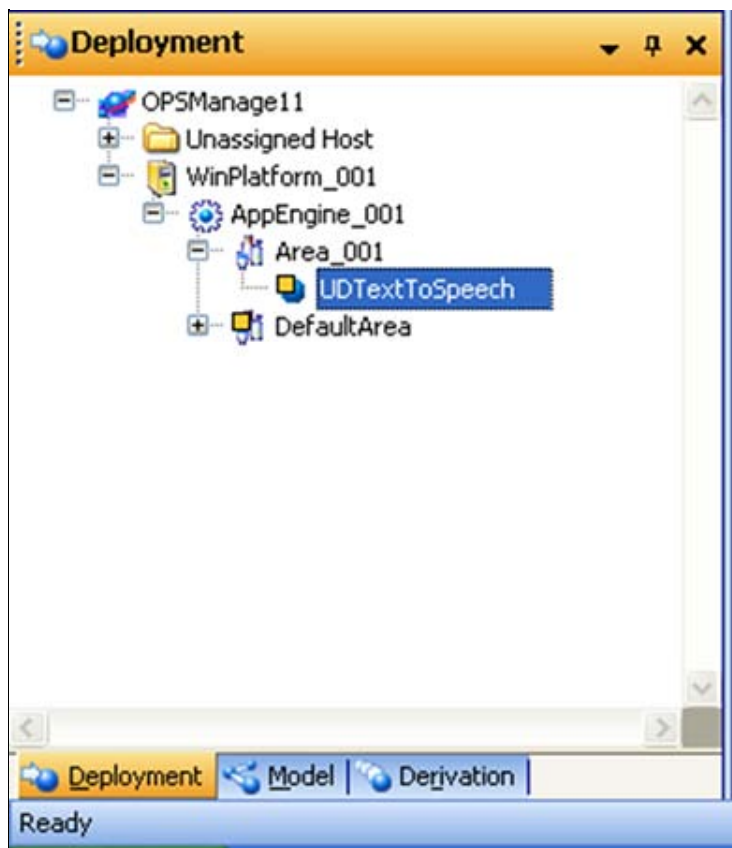
FIGURE 3: OBJECT INSTANCE FROM $USERDEFINED OBJECT BASE TEMPLATE

Confirm the Methods for the System.Speech.dll

Confirm that the System.Speech.dll appears in the ArchestrA Script Function Browser.

1. Edit the **UDTextToSpeech** Object Instance by clicking on the **Scripts** tab, then clicking the **Fx** symbol to open the Script Function Browser.
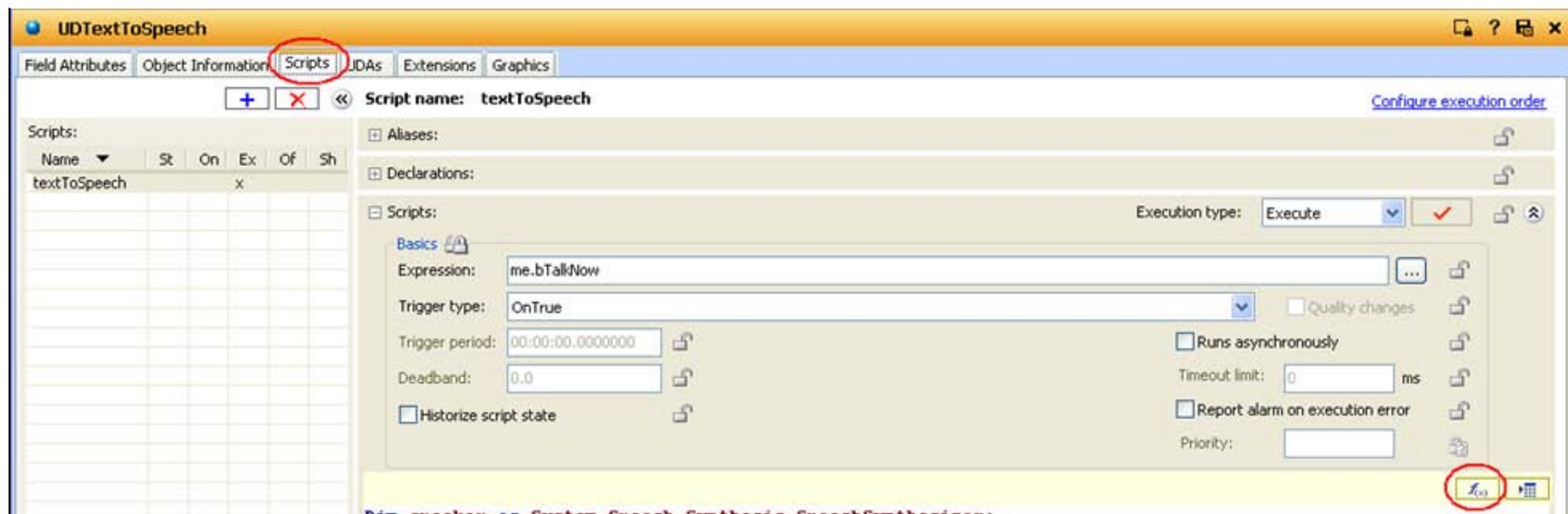
FIGURE 4: SCRIPT EDITING

2. Confirm that the **System.Speech.Synthesis.SpeechSynthesizer** class appears in the script function browser.
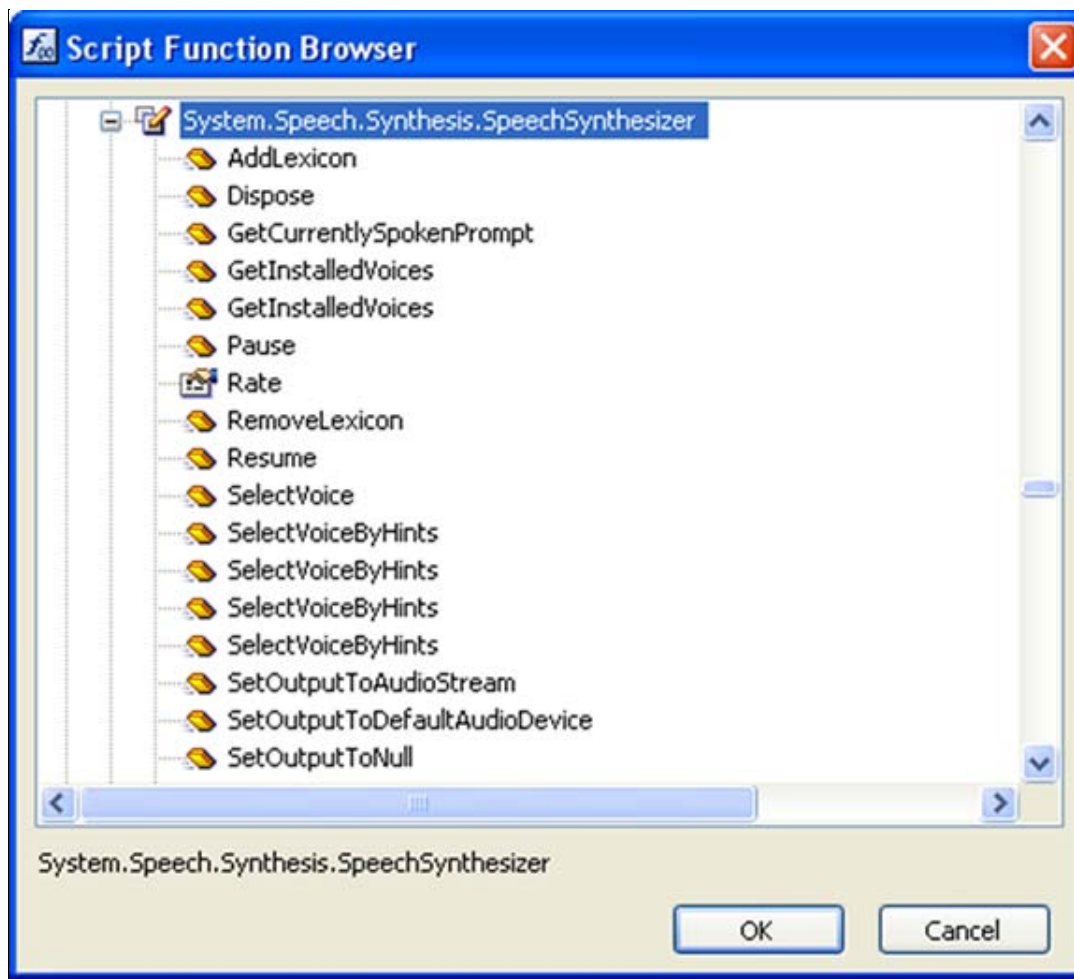
FIGURE 5: DLL IN SCRIPT FUNCTION BROWSER

Create UDAs for Use in the ArchestrA Script

- Create the following UDAs to use in the ArchestrA Script:

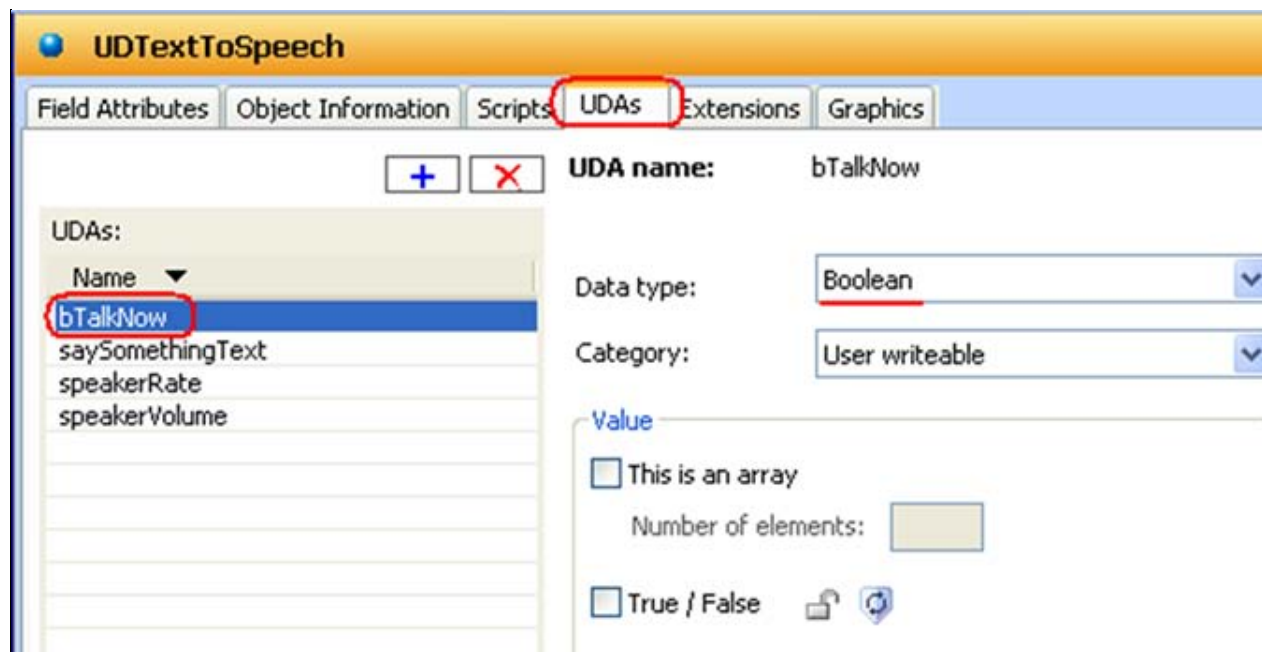 - **bTalkNow**: Boolean to enable the ArchestrA Script.

FIGURE 6: BTALKNOW UDA

• **saySomethingText**: String, configure a default text which will be then Annunciated(played back) when script runs.
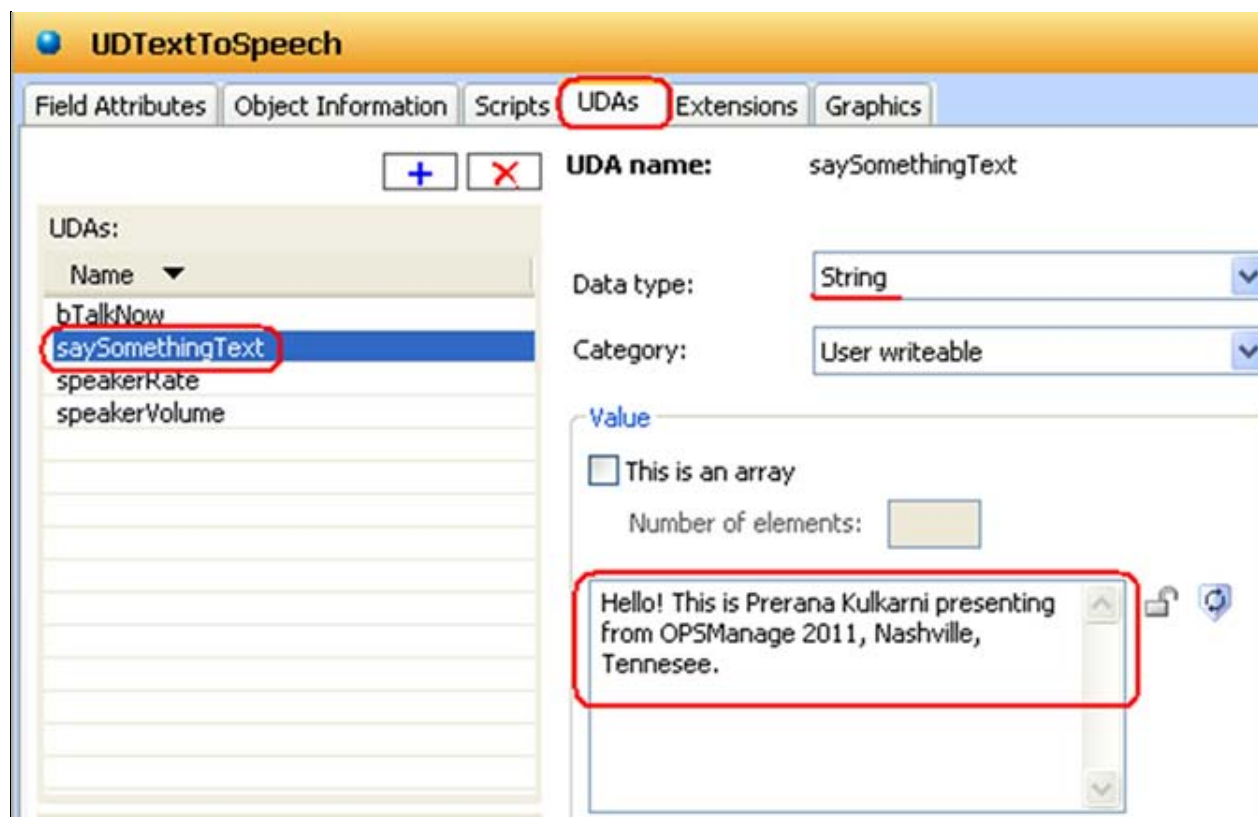
FIGURE 7: SAYSOMETHINGTEXT UDA

• **speakerRate**: Integer, default value 1. When this value is increased greater than 1, the text is spoken at a faster rate.
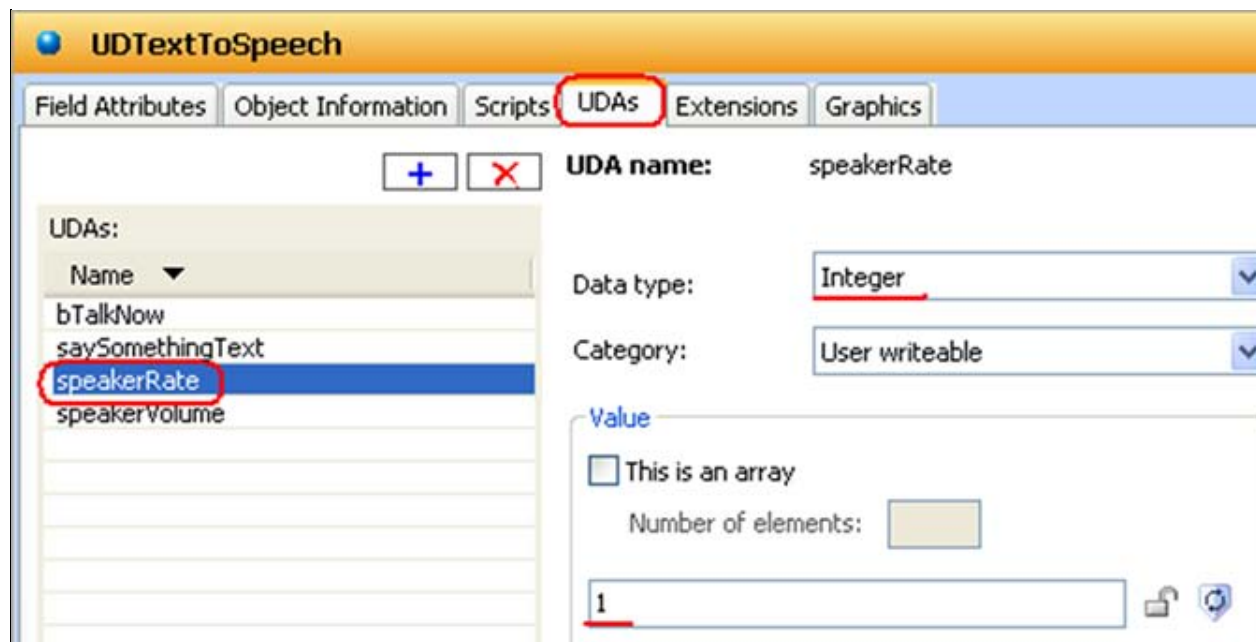
FIGURE 8: SPEAKERRATE UDA

• **speakerVolume**: Integer, default value 100. This is full volume. To decrease the speaker volume, change this value to something less than 100.
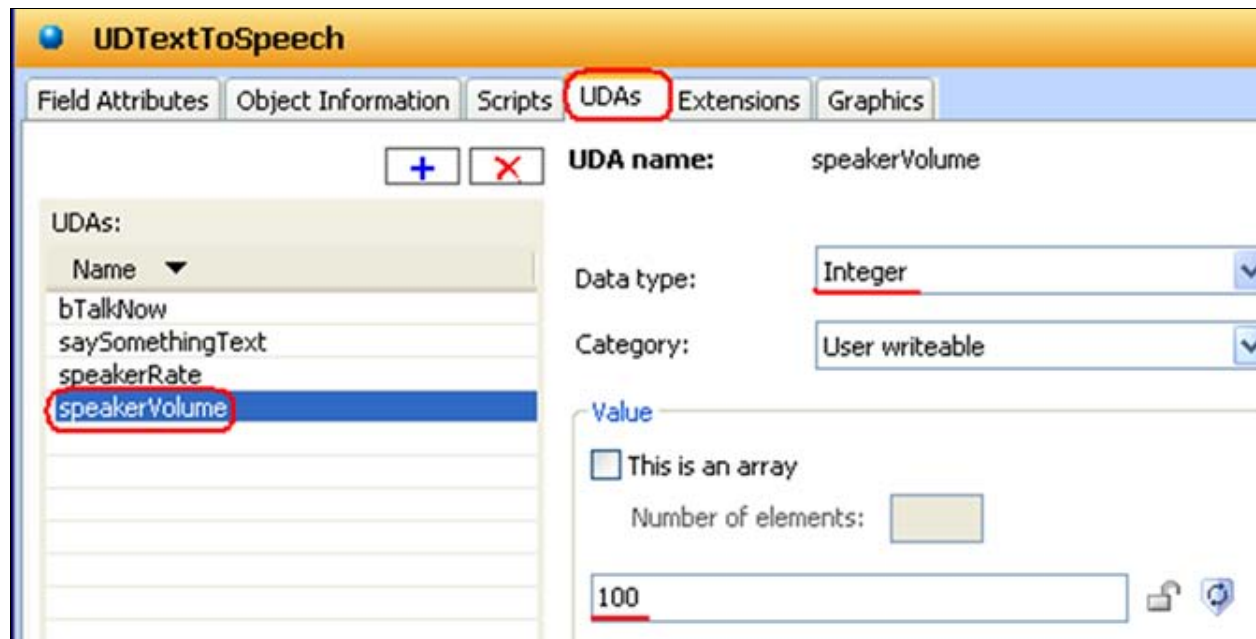

FIGURE 9: SPEAKERVOLUME UDA

Create the ArchestrA Script

1. On the **Scripts** tab, add a script and call it **textToSpeech**.

2. Configure the **Expression** and **Trigger type** for this script, so that the script will execute when the boolean **bTalkNow** is set to true.

FIGURE 10: ME.BTALKNOW SET TO TRUE

3. Type the following script into the script editor. You can copy/paste from the section below.

```
Dim speaker as System.Speech.Synthesis.SpeechSynthesizer;
speaker = new System.Speech.Synthesis.SpeechSynthesizer;
Logmessage("Demo using a Microsoft Framework dll: UDTextToSpeech");

speaker.Rate = me.speakerRate;   'default value = 1;
speaker.Volume =me.speakerVolume; 'default value = 100;
speaker.SpeakAsync( <me.saySomethingText );

me.bTalkNow = false;
```

- The first 2 lines in the script declare the **System.speech.synthesis.Speechsynthesizer** class.

- Line #3 is the log message to Archestra Logger.

- Line #4 and Line#5 set up the properties: speaker Rate and speaker Volume.

- Line #6 sets up the text to be spoken. The SpeakAsync method is used which executes Acynchrousnously.

- Line #7 sets the boolean **btalkNow** to false. This is so that the text is spoken only once (it would be annoying to hear the text repeat over and over until the object undeployed!)

  After configuring above, you should see the following in the Scripts editor (Figure 12 below).
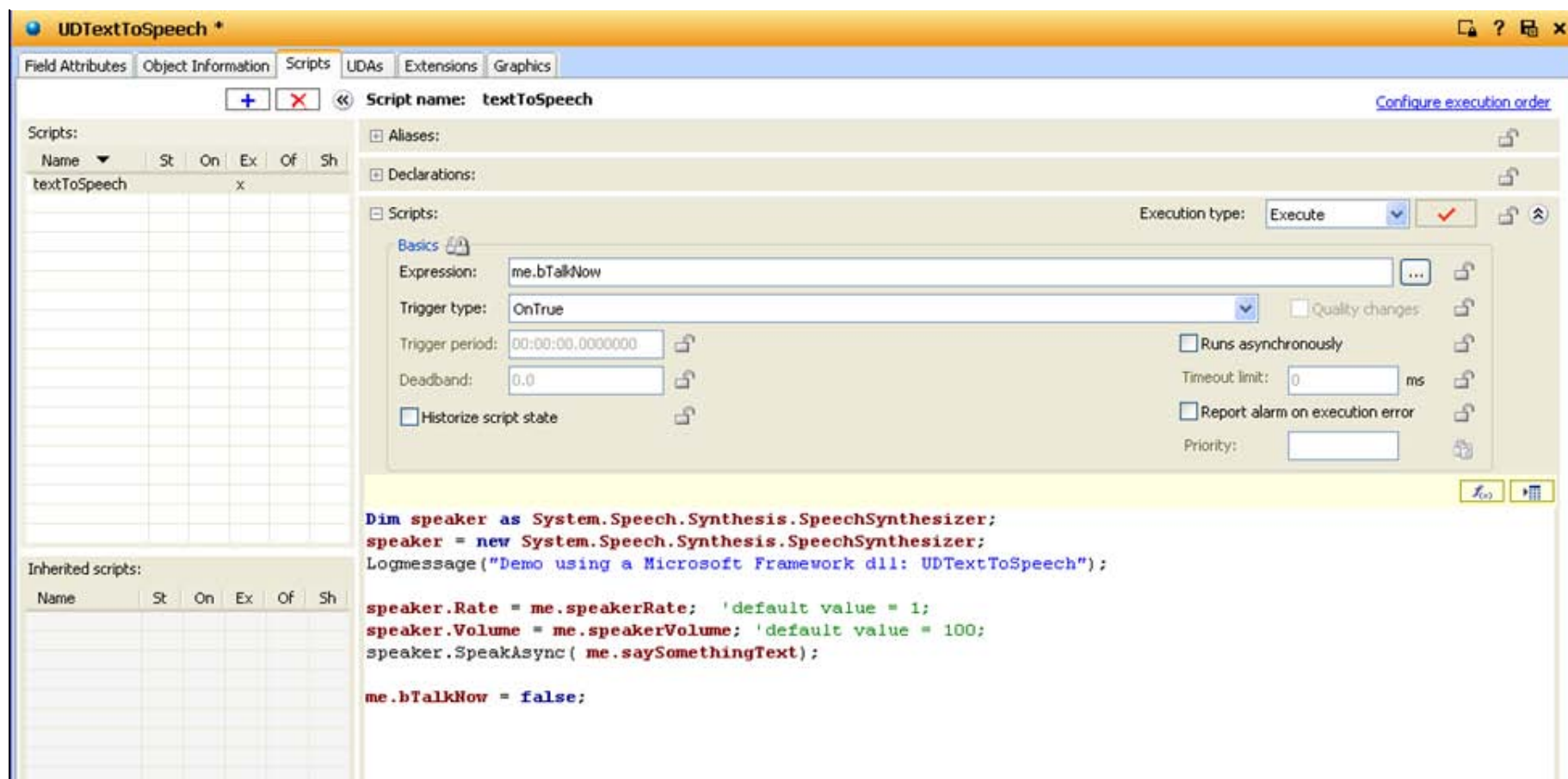
FIGURE 12: BTALKNOW ONTRUE SCRIPT

4. Save your script changes and close the Object editor.

Deploy and Test the Object

This is the easiest part – right click on the Object and Deploy it.

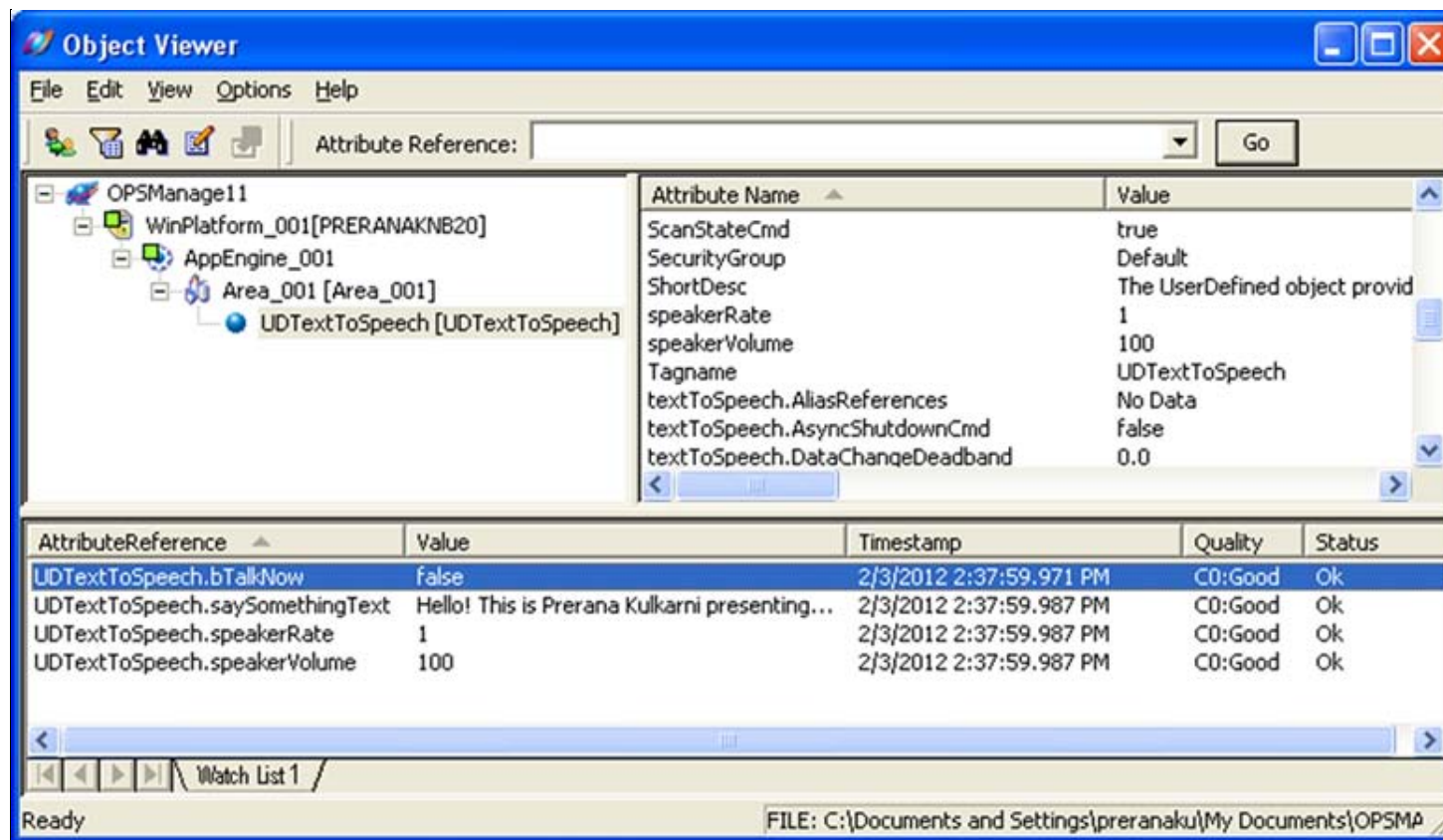1. For testing, open Object Viewer and add the following attributes into the Watch List window:

FIGURE 13: OBJECT VIEWER ATTRIBUTES

2. Set the boolean **bTalkNow** value to true. You should now hear the text configured in the string UDA – **saySomethingText**.

3. You can also change the Text, speakerRate and speakerVolume at runtime using the Watch List window.

References

- **http://msdn.microsoft.com/en-us/library/system.speech.synthesis.speechsynthesizer(v=VS.90).aspx**

- **http://www.codeproject.com/Articles/28725/A-Very-Easy-Introduction-to-Microsoft-NET-Speech-S**

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