Data Mining – Creating a Custom Table Using Data Manipulators

APPLICATIONS NOTE

October 2013

Description: Guide to create a new SQL/MSDE database table using ICONICS Data Mining technology.
OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7
General Requirement: GENESIS32 and MS SQL with management studio installed.

Introduction

Although the Data Manipulator items in ICONICS Database (DB) OPC Server allow you to run custom SQL command or stored procedures with parameters, they lack the support of table and column names as parameters. Because of this, we have to use stored procedures to finish the task when trying to use table names or column names as the parameter.

First, you need to create a new stored procedure using the ICONICS MSDE Database Manager or the SQL Server Management Studio. Then, you need to define a new Data Manipulator and call it from GraphWorX32 using ICONICS DBOPCManipulator ActiveX. We will describe the steps necessary in this document.

Stored Procedure

We will create a new SQL Stored procedure now. In the procedure, a string representing the requested SQL command is created and then executed.

1. Open the Microsoft SQL Server Management Studio Express from Start → Programs → Microsoft SQL Server → SQL Server Management Studio
2. In the Connect to Server dialog, make a connection to your SQL Server.
3. Expand Databases and browse for the interested database.
4. Expand your database → Programmability → Stored Procedures
5. Right click on "Stored Procedures" in its tree and select "New Stored Procedure" as shown in Figure 1.

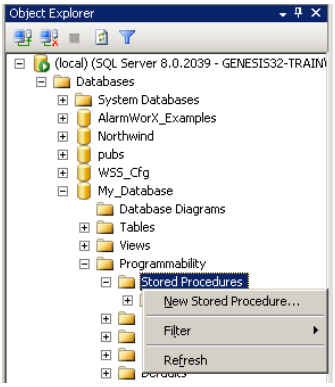

Figure 1 - Creating a New Stored Procedure

6. A "New Stored Procedure" window opens with some default code as shown in Figure 2.

```
GO
SET QUOTED_IDENTIFIER ON
GO
-- =============================================
-- Author:      <Author,,Name>
-- Create date: <Create Date,,>
-- Description: <Description,,>
-- =============================================
CREATE PROCEDURE <Procedure_Name, sysname, ProcedureName>
    -- Add the parameters for the stored procedure here
    <@Param1, sysname, @p1> <Datatype_For_Param1, , int> = <Default_Value_For_Param1, , 0>,
    <@Param2, sysname, @p2> <Datatype_For_Param2, , int> = <Default_Value_For_Param2, , 0>
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;

    -- Insert statements for procedure here
    SELECT <@Param1, sysname, @p1>, <@Param2, sysname, @p2>
END
GO
```

Figure 2 - Default Stored Procedure Code

7. You can modify the code to resemble the following:

```
CREATE PROCEDURE [dbo].[c_table]
@param1 NVARCHAR(20),
@param2 NVARCHAR(20),
@param3 NVARCHAR(20),
@param4 NVARCHAR(20)
AS

DECLARE @DBManipultor NVARCHAR(500)

SET @DBManipultor='CREATE TABLE [dbo].['+@param1+'] (
['+@param2+'] int not null identity (1, 1),
[' + @param3 + '] char(10) null,
[' + @param4 + '] char(10) null )'

EXEC sp_executesql @DBManipultor
```

8. The above code will create a stored procedure called c_table with four parameters. The store procedure runs an SQL command that will create a table with the name using the first parameter and remaining parameters will be names for the columns in the table.
9. Click the "Execute" button to create the stored procedure.

NOTE: You can use F5 to execute the stored procedure.

Data Manipulator

1. Open the Data Mining Configurator from Start → Programs → ICONICS Tools → Data Mining Configurator and connect to your SQL/MSDE database.
2. Create a new Data Manipulator, select "Stored procedure" and browse for the "c_table" procedure. Click "Apply".

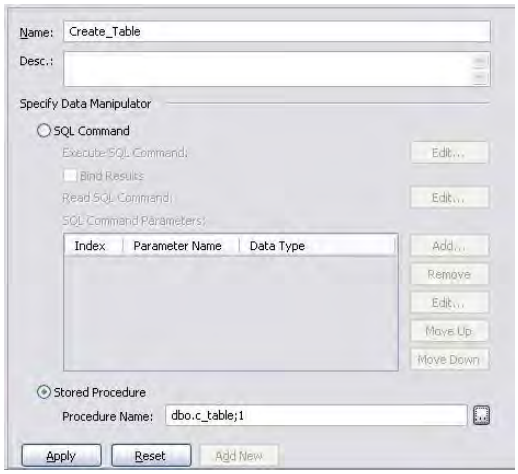

Figure 3 - "Create_Table" Data Manipulator

Running the Data Manipulator

1. Open GraphWorX by going to Start → Programs → ICONICS GENESIS32 → GraphWorX32 → GraphWorX32.
2. Insert the ICONICS DBOPCManipulator ActiveX by going to Edit → Insert New Object or by clicking on  in the ActiveX Tool bar and selecting the DBOPCManipulator in the list as shown in Figure 4.

Figure 4 - Inserting DBOPCManipulator ActiveX

3. Right click the ActiveX and select "Application Property Inspector". Write DBManipulator to the "Object Name" field. Click OK.
4. Double click the ActiveX. In its properties, browse for the Data Manipulator that you have just created in the DBOPC Server Configurator. Select @@Execute on the right hand side then Click OK until you are out of the Properties dialog.

Figure 5 - Browsing for the Data Manipulator

5. Insert a button to the display. In its properties, select "Run Script" on the Pick table and create a new VBA script. Insert following code to the button's sub:

```
Dim Proc As DBOPCManipulatorActiveX
Dim out As Variant

Set Proc =
ThisDisplay.GetVisibleObjectFromName("DBManipulator").GetOL
EObject()

out = Proc.Execute(Array(
"MyTableName", "MyColumnName1", "MyColumnName2",
"MyColumnName3"))
```

6. Save the display and put it in runtime. Click the button. It can be verified in the MSDE Database Manager, that a new table called "MyTableName" with 3 columns has been created.

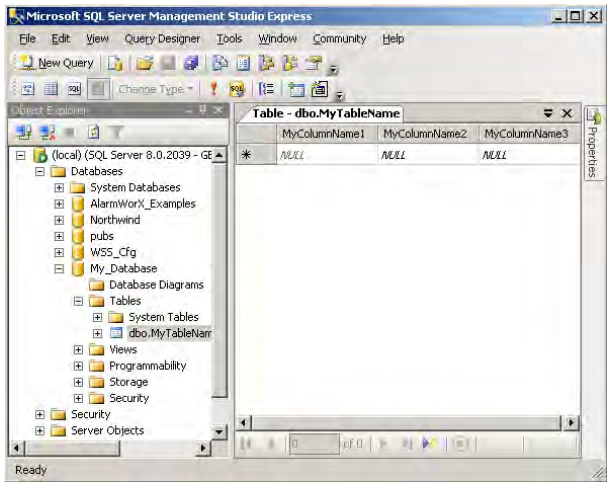

Figure 6 - New Table in the SQL Server Management Studio