

Accessing a Microsoft SQL Server Table from IBM DB2 UDB 8.2 Using WebSphere Information Integrator

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March 18, 2005

This document shows the tasks that need to be performed in order to make available a table residing in Microsoft SQL Server 2000 from an IBM DB2 UDB V8.2 both residing on the Microsoft Windows platform.

Prerequisites:

- IBM DB2 UDB V8.2 (this technote uses DB2 V8.2 for Windows)
- IBM WebSphere Information Integrator V8.2 (A trial version may be downloaded from the IBM developerworks website <http://www.ibm.com/developerworks/>)
- Microsoft SQL Server 2000
- Microsoft Windows Version 2000 (or higher)

Install IBM DB2 UDB V8.2 and IBM WebSphere Information Integrator V8.2 Standard Edition. Advanced and Developer editions of WebSphere Information Integrator will also work for this task.

Steps involved:

- Step 1: Create a Wrapper
- Step 2: Create a Server
- Step 3: Create User Mapping
- Step 4: Create a Nickname

A ‘Wrapper’ is a mechanism used to access the federated data source. The ‘Server’ defines the data source to a federated database. User Mapping establishes the mapping between the Federating Server user id and the user id on the actual data source. The nickname is used to access the data source object.

Step 1: Create a Wrapper

Please see Figure 1 for an example of the following tasks.

- Open the DB2 Control Center.
- Expand the database from which you want the Microsoft SQL Server tables to be accessed.
- Right click *Federated Database Objects* and click “create”.

- Choose “Microsoft SQL Server” from the data source field.
- Enter a name for the wrapper. In this example it is “MS-SQL”.
- Click “OK”

To accomplish this task from the command line:

```
CREATE WRAPPER "MS-SQL" LIBRARY 'db2mssql3.dll' OPTIONS( ADD DB2_FENCED 'N');
```

Step 2: Create a Server

Create an ODBC DSN for the MS-SQL Server database that we are trying to access. Step 1 created an entry called “MS-SQL” under Federated Database Objects.

Please see Figure 2 for example screen of the following tasks.

- Right click the “MS-SQL” object and select “Create”.
- “Create Server Definition” Window is opened.
- Enter an appropriate name. In the example it is ‘DELLRAK”.
- Choose “MSSQLSERVER” for database type.
- Then select the appropriate database version.

Please see Figure 3 for example screen of the following tasks.

- Change to the “Settings” tab of the “Create Server Definition” Window.
- Enter the name of the DSN for the Microsoft SQL Server database, in the “Value” field for the “NODE” option.
- Enter the name of the Microsoft SQL Server database in the “Value” field of “DBNAME”.
- Click the “OK” button.

The command line equivalent of this task is:

```
CREATE SERVER DELLRAK TYPE MSSQLSERVER VERSION '2000' WRAPPER "MS-SQL"  
OPTIONS( ADD NODE 'D1650', DBNAME 'northwind');
```

Step 3: Create User Mapping

Please see Figure 4 for example screen of the following tasks.

- Once the server has been created, it will show up under the “Server Definitions”. The server, which we created in the previous step as “DELLRAK”, will have a “user mappings” under it. Right click “user mappings” and click “Create”.
- Highlight and move the user IDs that will need to access the Microsoft SQL Server databases from “Available User IDs” to “Selected User IDs”.

Please see Figure 5 for example screen of the following tasks.

- Click on the settings tab in the “Create User Mappings” window.
- Enter values for REMOTE_AUTHID and REMOTE_PASSWORD. This is the ID and password IBM DB2 II will use to access the Microsoft SQL Server.

To accomplish this step from the command line, use:

```
CREATE USER MAPPING FOR "ADMINISTRATOR" SERVER "DELLRAK" OPTIONS ( ADD  
REMOTE_AUTHID 'sa', ADD REMOTE_PASSWORD '*****') ;
```

Step 4: Create a Nickname

Please see Figure 6 for example screen of the following tasks.

- Expand the Server Definitions element. The server will be displayed.
- Expand the Server object ('DELLRAK' in this case).
- Right click 'Nicknames' and then select "Create".
- Use an existing schema or fill in the name of the desired schema in the 'Nickname schema' field.
- Enter the nickname in the 'Nickname' field. The nickname is what the table in Microsoft SQL Server will be called on the IBM DB2 side.
- For "Remote schema" and "Remote table name" enter the schema (user) and table name from Microsoft SQL Server.

To create a nickname from the command line, use:

```
CREATE NICKNAME MSSQL.EMPLOYEES FOR DELLRAK.DBO.EMPLOYEES;
```

Verify Data Access

Please see Figure 7 for example screen of the following task.

- Double click on the nickname, under the Server object element, to display the data from Microsoft SQL Server.

To accomplish this from the command line, use:

```
"select * from MSSQL.EMPLOYEES"
```

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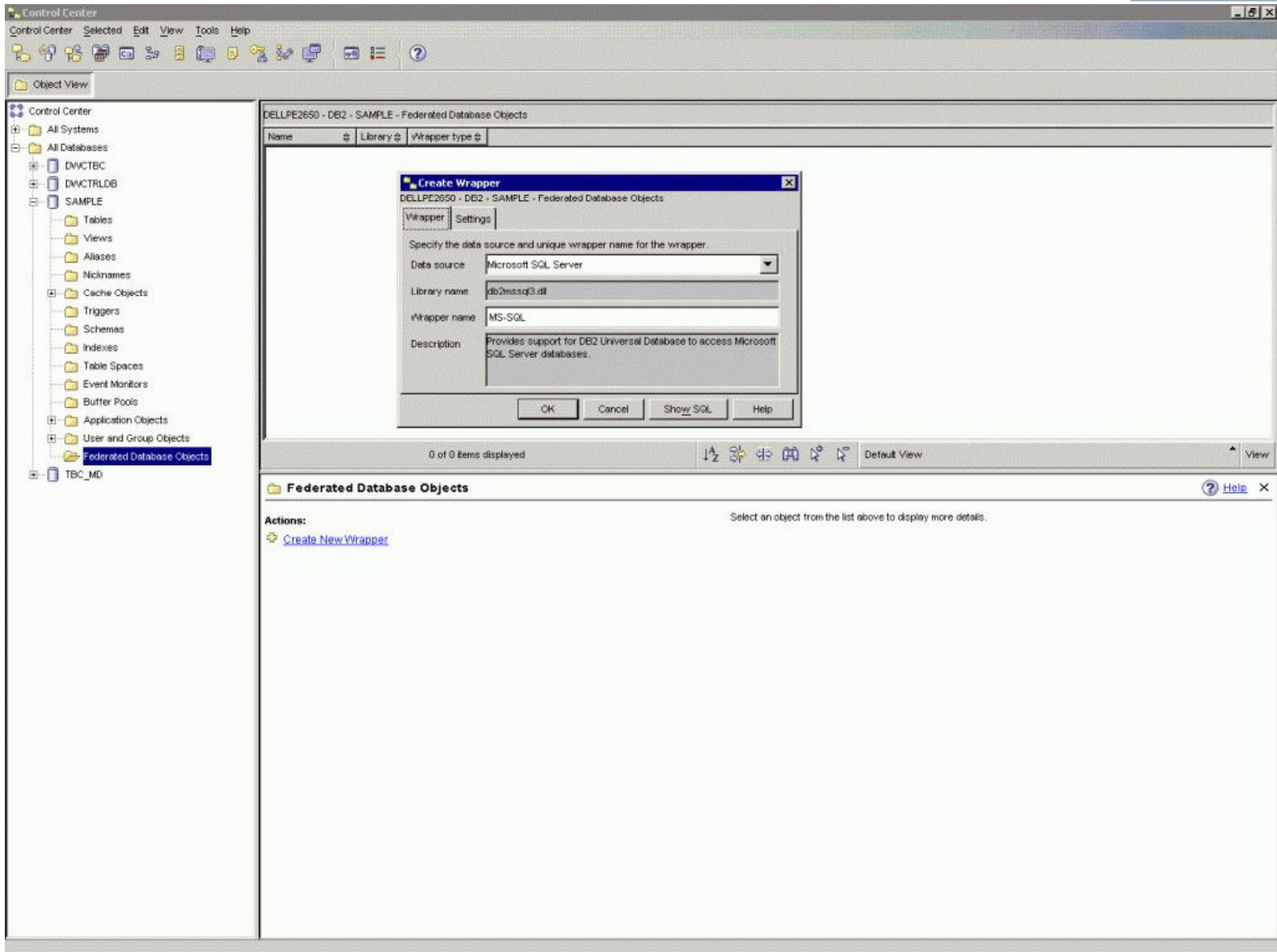


Figure 1

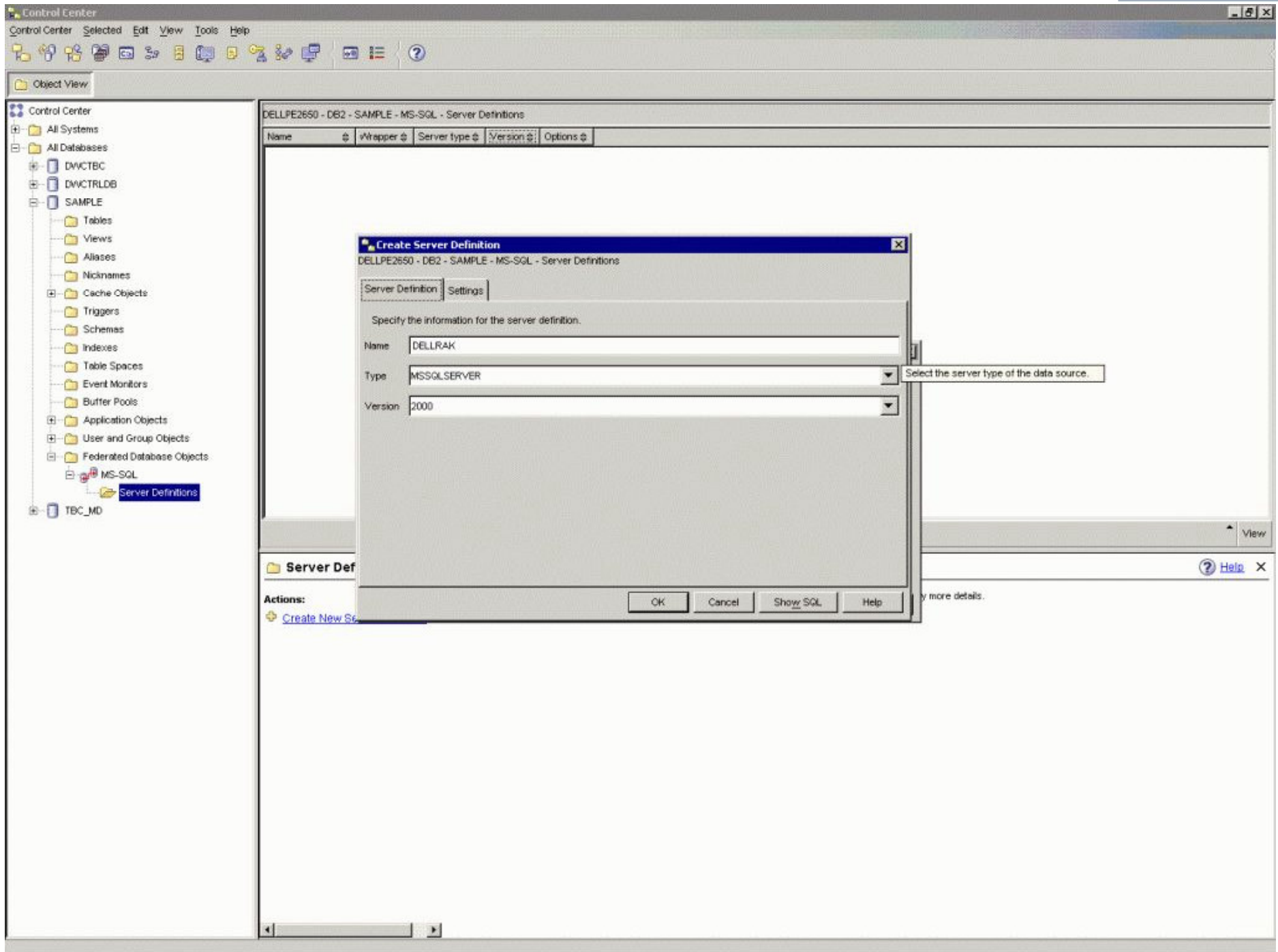


Figure 2

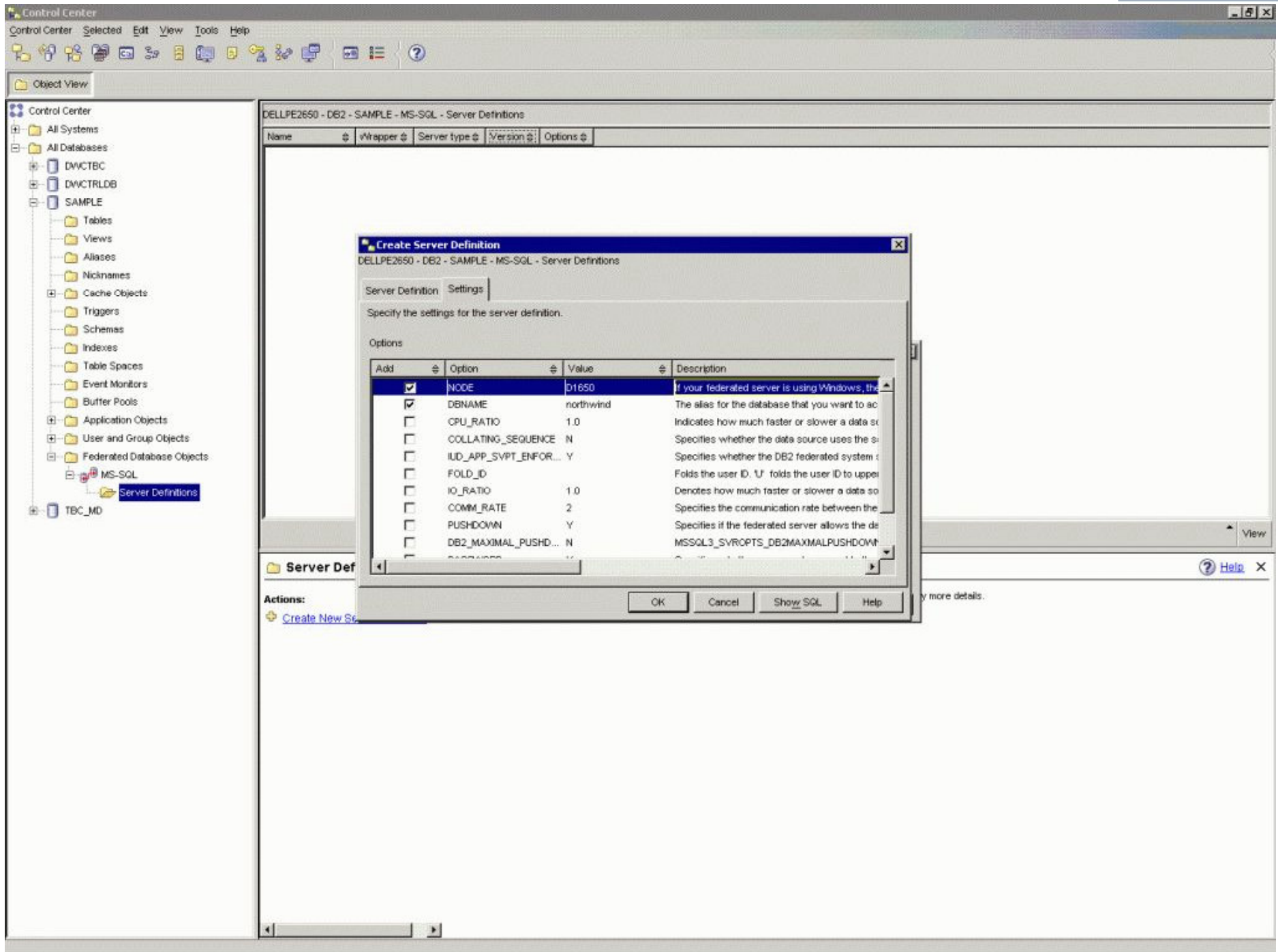


Figure 3

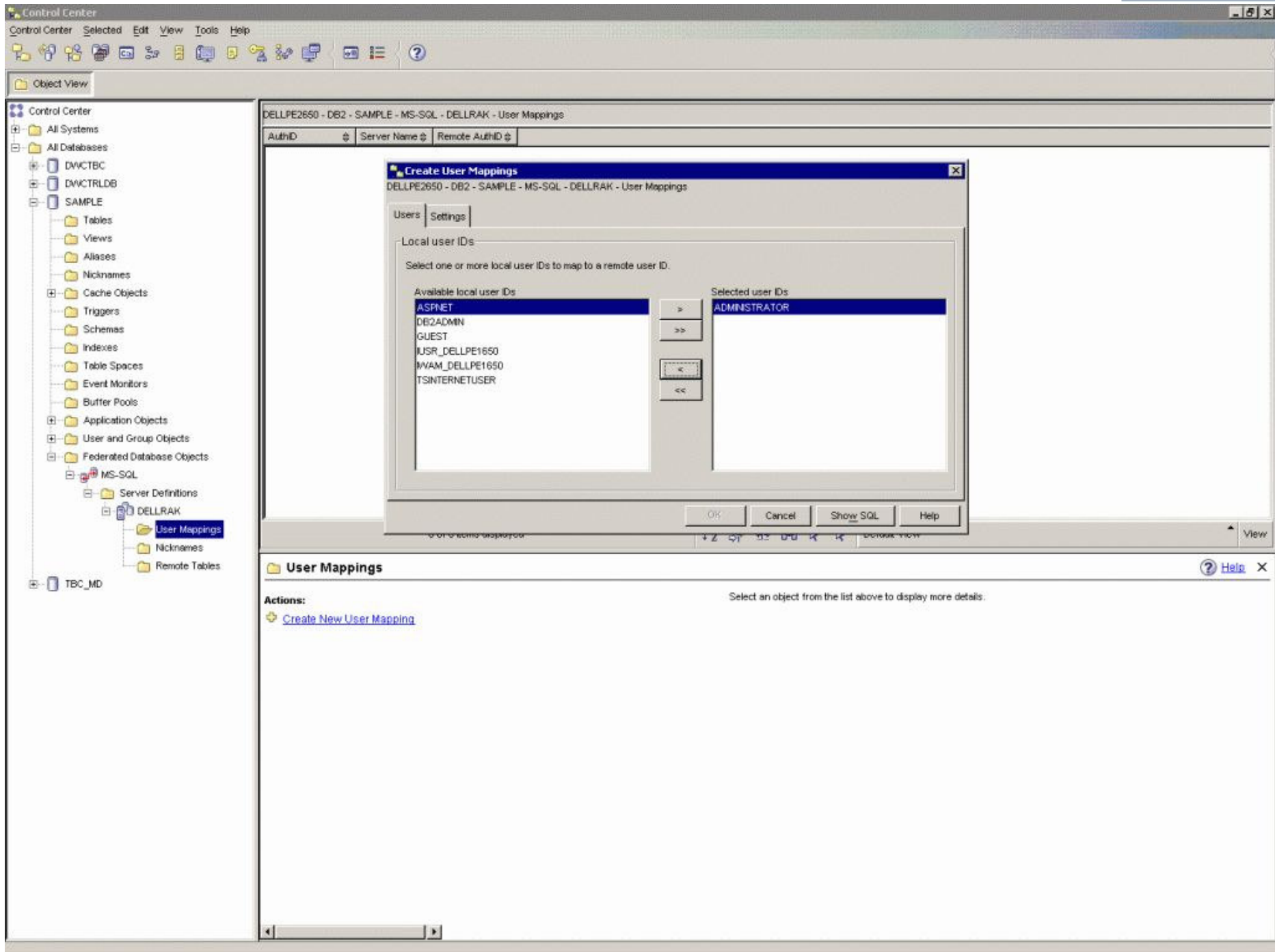


Figure 4

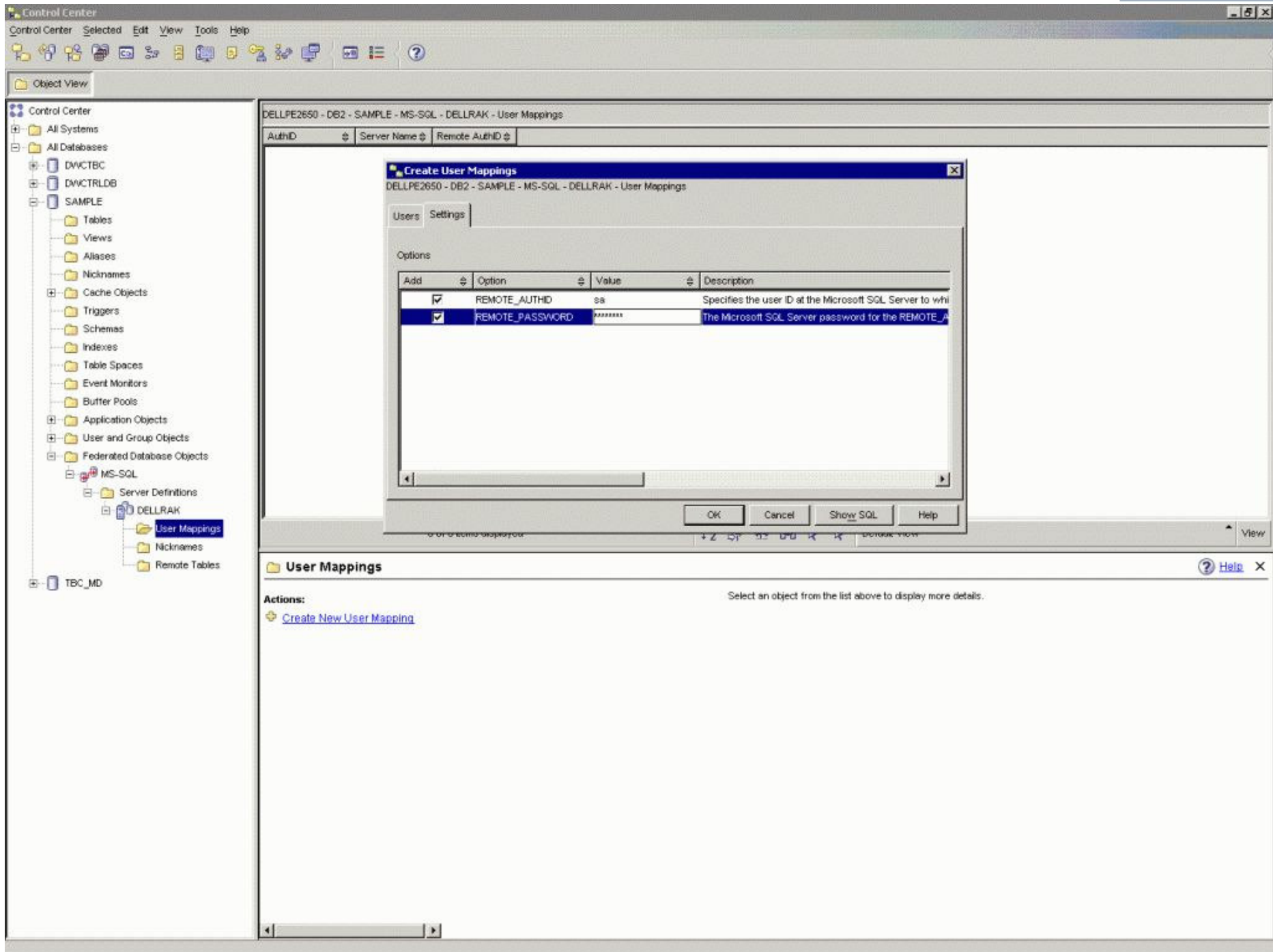


Figure 5

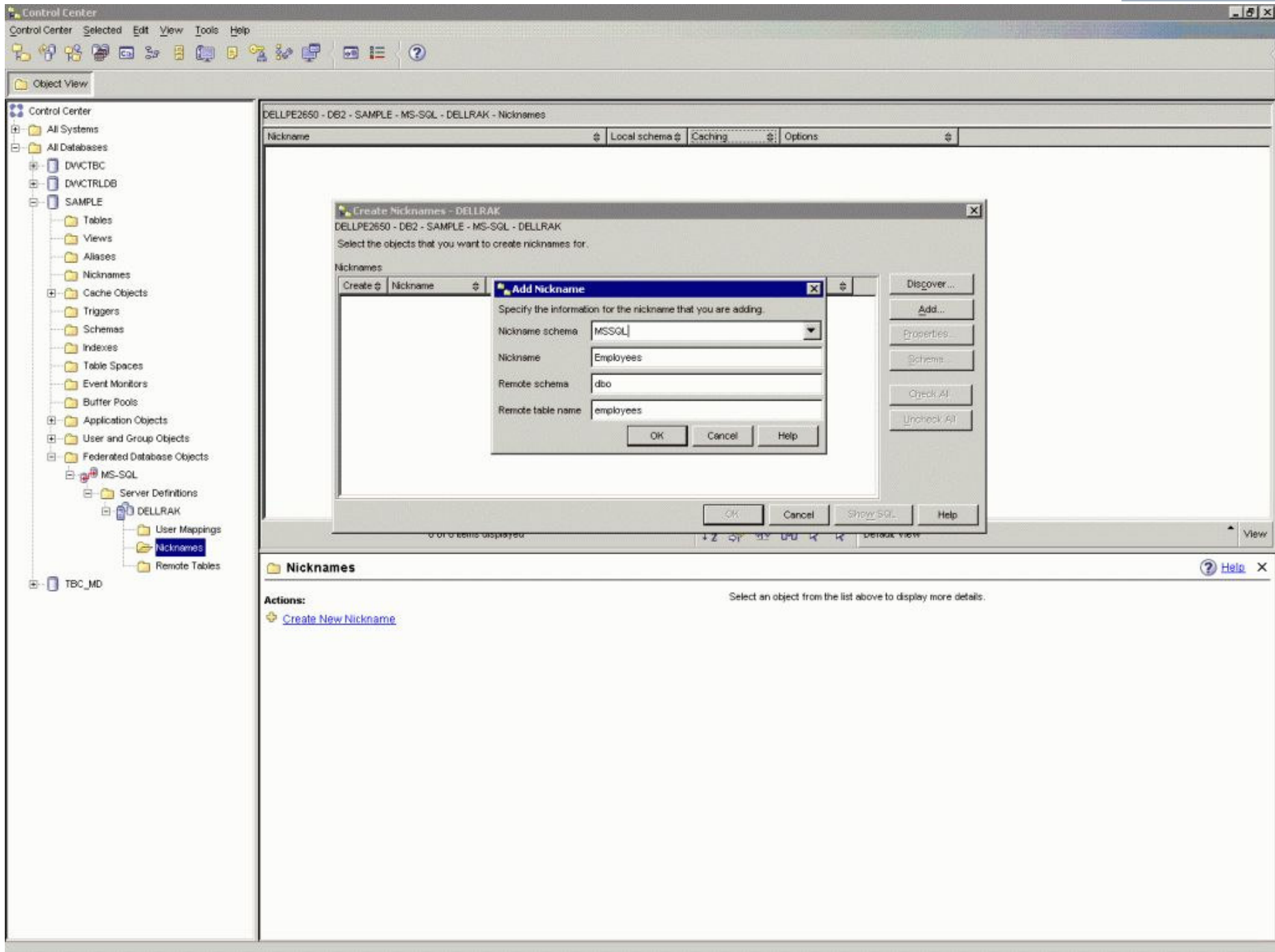


Figure 6

The screenshot displays the IBM Control Center interface. On the left is the Object View tree, showing a hierarchy from 'All Systems' down to 'MS-SQL' and 'DELLRAK'. The main window shows the 'EMPLOYEES' nickname configuration. An 'Open Nickname - EMPLOYEES' dialog box is open, displaying a table of employee data. Below the table are buttons for 'Commit', 'Roll Back', 'Filter', and 'Fetch More Rows'. A status bar at the bottom of the dialog indicates '9 row(s) in memory'. Below the dialog, a 'Nickname - EMPLOYEES' section shows a table definition with columns and their attributes.

Open Nickname - EMPLOYEES Data Table:

EMPLOYEEID	LASTNAME	FIRSTNAME	TITLE	TITLEOFC...	BIRTHDATE	HIREDATE	ADDRESS
1	Davolio	Nancy	Sales Represent...	Ms.	Dec 8, 1948 12:00...	May 1, 1992 12:00...	507 - 20th Ave
2	Fuller	Andrew	Vice President, Sa...	Dr.	Feb 19, 1952 12:0...	Aug 14, 1992 12:0...	908 W. Capital
3	Leverling	Janet	Sales Representat...	Ms.	Aug 30, 1963 12:0...	Apr 1, 1992 12:00...	722 Moss Bay
4	Peacock	Margaret	Sales Representat...	Mrs.	Sep 19, 1937 12:0...	May 3, 1993 12:00...	4110 Old Redm
5	Buchanan	Steven	Sales Manager	Mr.	Mar 4, 1955 12:00...	Oct 17, 1993 12:0...	14 Garrett Hill
6	Suyama	Michael	Sales Representat...	Mr.	Jul 2, 1963 12:00...	Oct 17, 1993 12:0...	Coventry House
7	King	Robert	Sales Representat...	Mr.	May 29, 1960 12:0...	Jan 2, 1994 12:00...	Edgeham Hollo
8	Callahan	Laura	Inside Sales Coord...	Ms.	Jan 9, 1958 12:00...	Mar 5, 1994 12:00...	4726 - 11th Av
9	Dodsworth	Annie	Sales Representat...	Ms.	Jan 27, 1966 12:0...	Nov 15, 1994 12:0...	7 Houndstooth

Nickname - EMPLOYEES Table Definition:

Name	Data type	Length	Nullable
EMPLOYEEID	INTEGER	4	No
LASTNAME	VARCHAR	40	No
FIRSTNAME	VARCHAR	20	No
TITLE	VARCHAR	60	Yes
TITLECOURTESY	VARCHAR	50	Yes
BIRTHDATE	TIMESTAMP	10	Yes
HIREDATE	TIMESTAMP	10	Yes
ADDRESS	VARCHAR	120	Yes
CITY	VARCHAR	30	Yes
REGION	VARCHAR	30	Yes
POSTALCODE	VARCHAR	20	Yes
COUNTRY	VARCHAR	30	Yes
HOMEPHONE	VARCHAR	48	Yes
EXTENSION	VARCHAR	8	Yes
PHOTO	BLOB	2147483647	Yes
NOTES	CLOB	2147483647	Yes
REPORTSTO	INTEGER	4	Yes
PHOTOPATH	VARCHAR	510	Yes

Figure 7