

Connect to a SQL Database with Monitouch

Monitouch HMI Technical Note TN-MH-0015a

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Monitouch HMI
Division of Fuji Electric Corp. of America

55 Westech Drive

Tyngsboro, MA 01879

Phone: (978) 649-8383

Toll Free: (866) 838-4031

Fax: (978) 649-0090

E-Mail: Support@MonitouchHMI.com

Website: www.MonitouchHMI.com

1. Introduction

This document describes how to connect to a SQL database from a Monitouch panel. There are several components to the system: SQL Database, ODBC Driver, V-Server and Monitouch.

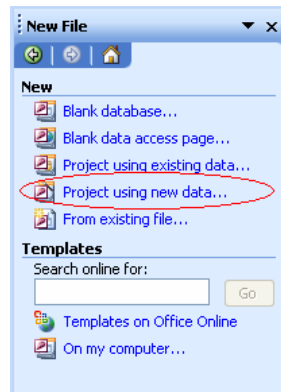
This has been tested with an MSDE installation and with a SQL server installation. The database can be on any PC on a network. The V-Server installation needs to be on the same PC as the ODBC driver, but it does not need to be on the same PC as the database. A minimal amount of database experience is required to configure the database and ODBC driver correctly.

2. Requirements

- 1) V-SFT programming software.
- 2) MSDE installation or SQL Server
- 3) V-Server
- 4) Monitouch panel with Ethernet (V7i series, V706 series or V715)

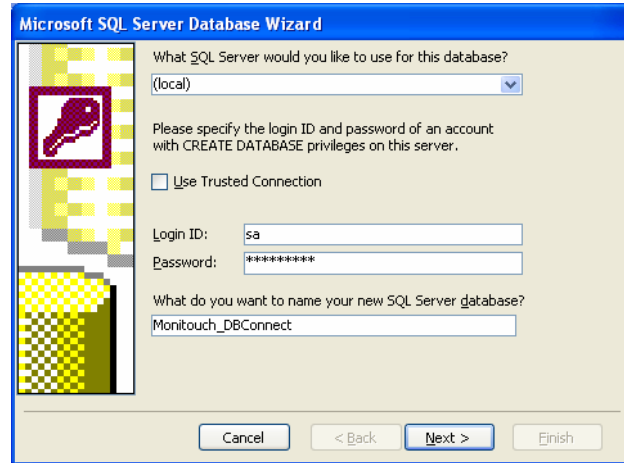
3. Configure the Database

- 1) For this technical note we will assume that we are using an instance of MSDE. When installing MSDE, set the command line parameters of SAPWD="monitouch" and SECURITYMODE="SQL".
- 2) You can configure the database through SQL Enterprise Manager or MS Access. We will use MS Access for this technical note.
 - Click File – New and select "Project using new data..."

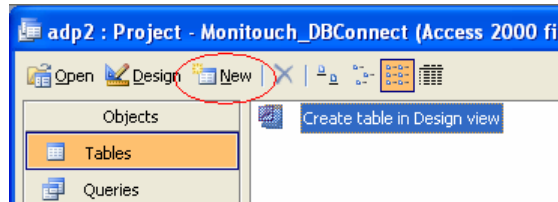


- Enter a file name for the project

- Select the SQL server (it should be (local) if you used the default for the MSDE installation. Then enter the login and password from the MSDE installation. Then give a name to the new Database.



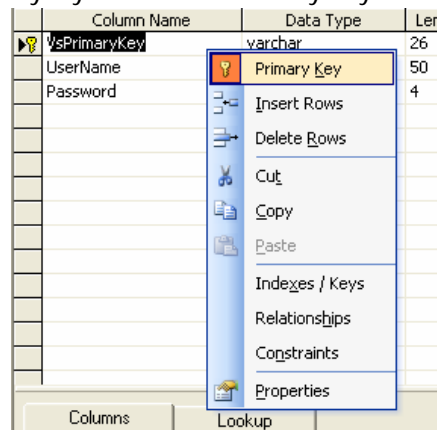
- Create your database as required. For this test we will make a single table with user names and passwords.
 - ① Click on Tables and click New to create a new table.



- ② In this example we will create 3 columns:
 1. VsPrimaryKey (varchar, 26 bytes)
 2. UserName (varchar, 50 bytes)
 3. Password (varchar, 4 bytes)

Table1 : Table					
	Column Name	Data Type	Length	Allow Nulls	Description
	VsPrimaryKey	varchar	26		Required by V-Server to INSERT
	UserName	varchar	50		User Names of Monitouch users
	Password	varchar	4		Passwords of Monitouch users

- ③ Right-click on VsPrimaryKey and select "Primary Key"



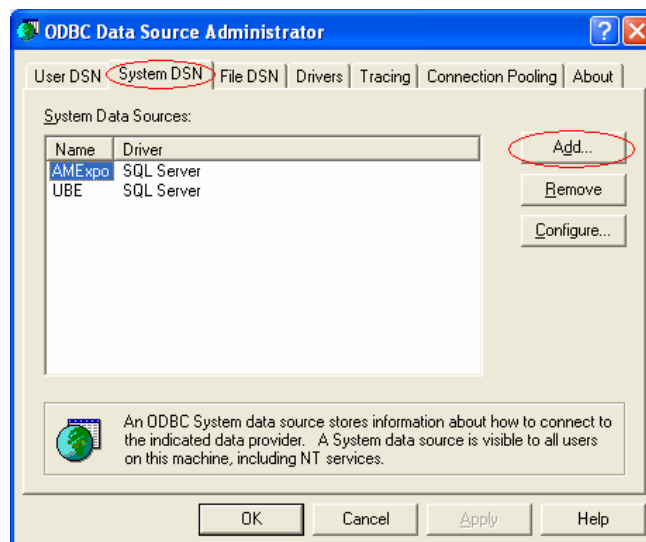
- ④ Save the table as "Users"
 ⑤ Open the table and enter:

Users : Table			
	VsPrimaryKey	UserName	Password
1		Monitouch	1000
2		Test	1111
*			

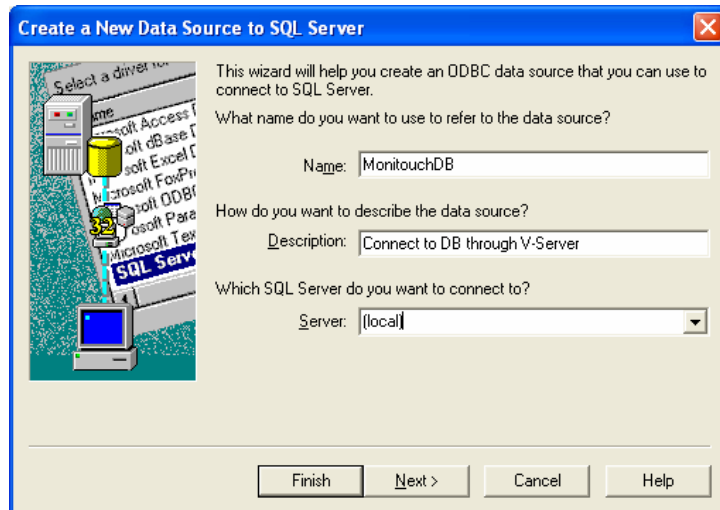
- ⑥ Save and close the table

4. Configure the ODBC Driver

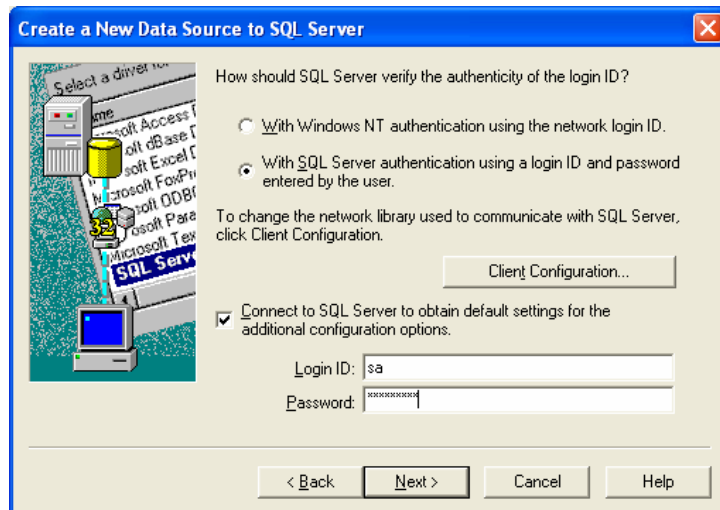
- 1) Open Windows Control Panel and click on Administrative Tools
- 2) Open "Data Sources (ODBC)"
- 3) Click on System DSN and Add...



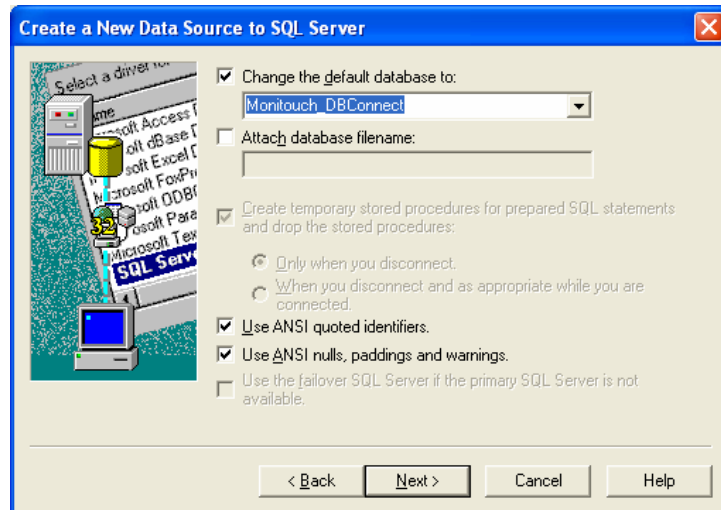
- 4) Select the "SQL Server" driver and follow the Wizard
- Step 1 gives a name and description as well as the SQL server



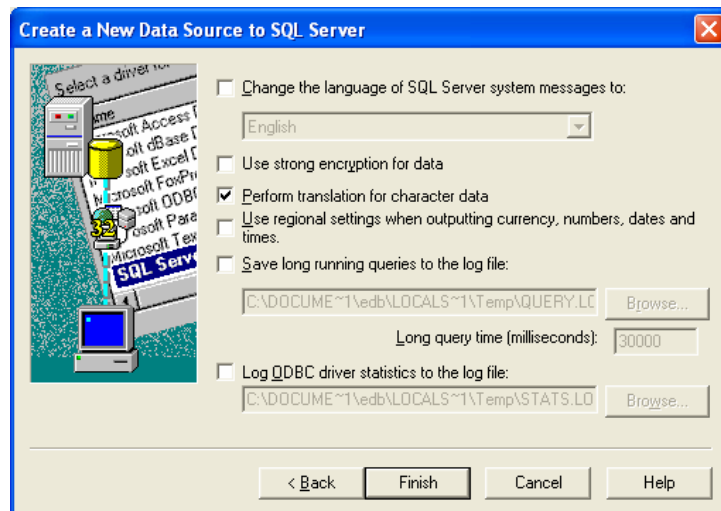
- Step 2 – Enter the user data. Change to the SQL Authentication and enter the user data from the MSDE installation (User = sa, password = monitouch)



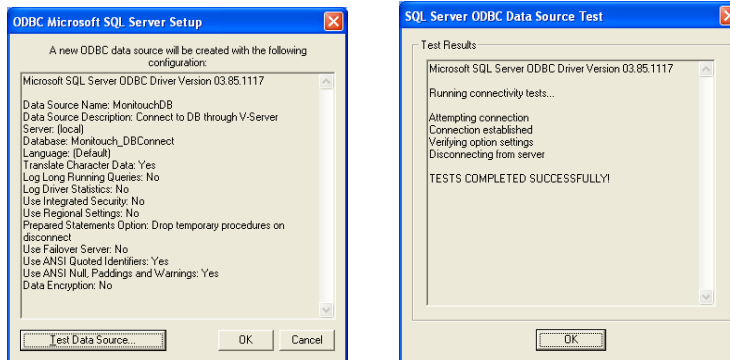
- Step 3 – Change the default database to the one that was created in Access (Monitouch_DBConnect)



- Step 4 – Settings in the Database (defaults usually OK)



- Test the ODBC driver to confirm the settings.



- Click OK and you are done.

5. Configure V-SFT

- 1) Create a new application for the appropriate Monitouch model and PLC.
- 2) We will first create a macro that will return all of the Users and their passwords.
 - Click Item – Macro Block – 0 and enter (comments optional):

```

;First Clear all of the memory
; This is the return memory
  $u04000=0 C:1000(FILL)
; This is the Send memory
  $u01000=0 C:200(FILL)
;
;Command Header
; Command ID for V-Server
  $u01000='VSVR'
; Database command ID - Search
  $u01002=1000 (W)
; ODBC Driver name
  $u01003='MonitouchDB'
; User Name, password for DB access
  $u01019='sa'
  $u01035='monitouch'
; Table Name
  $u01051='Users'
; Return Data (Indirect Add.)
; $u3998 = Result Code (0=good)
; $u3999 = Number of records returned
; $u4000 = First record starts
  $u01115=0 (W)
  $u01116=3998 (W)
  $u01117=0 (W)
  $u01118=0 (W)
  $u01119=0 (W)
; Search Conditions - Search 1 Column
  $u01120=1 (W)
; Number of columns to return
  $u01121=2 (W)
; Max Number of record to return
  $u01122=50 (W)
;
;Search Data
; Length of Column name in Words (2 chars = 1 word)
  $u01128=4 (W)

```



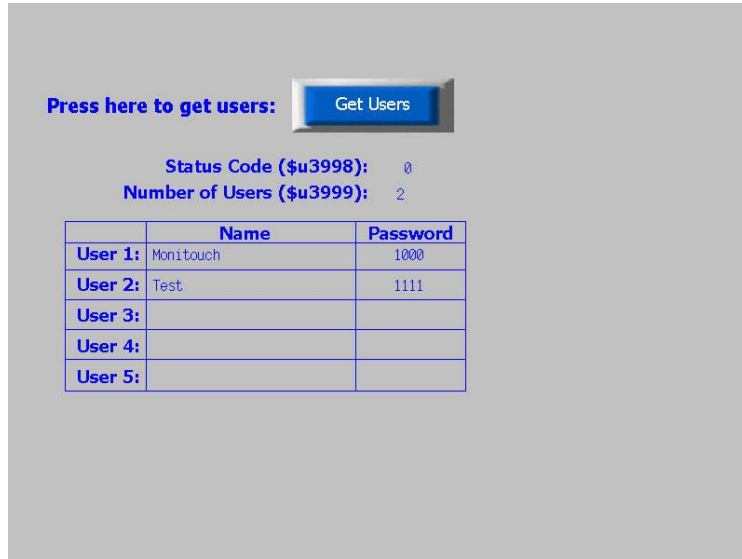
```
; Search Criteria
;   $u01129=060CH (W)
; Search Length
;   $u01130=25 (W)
; Column Name
;   $u01131='UserName'
; Search Data
;   $u01135='% '
;
;Return Data - Column 1
;   Return Column 1 Name Length
;   $u01160=4 (W)
;   Return Column 1 Data Type
;   $u01161=010CH (W)
;   Return Column 1 Data Length
;   $u01162=25 (W)
;   Return Column 1 Name
;   $u01163='UserName'
;
;Return Data - Column 2
;   Return Column 2 Name Length
;   $u01167=4 (W)
;   Return Column 2 Data Type
;   $u01168=000CH (W)
;   Return Column 2 Data Length
;   $u01169=2 (W)
;   Return Column 2 Name
;   $u01170='Password'
;
;SEND data to V-Server
SEND      $u01000 C:180 TO: 1:192.168.0.23(PC)
```

3) Place these items on Screen 0:

- Numerical Display for \$u3998 (5 digits)
- Numerical Display for \$u3999 (2 digits)
- Character Display for \$4000 (25 bytes)
- Character Display for \$4025 (4 bytes)
- Character Display for \$4027 (25 bytes)
- Character Display for \$4052 (4 bytes)
- Character Display for \$4054 (25 bytes)
- Character Display for \$4079 (4 bytes)
- Character Display for \$4081 (25 bytes)
- Character Display for \$4106 (4 bytes)
- Character Display for \$4108 (25 bytes)
- Character Display for \$4133 (4 bytes)
- Switch with an ON Macro to Call Macro Block 0

4) Download to the Panel

- 5) Confirm that V-Server is running (no setup required) and press the switch. The returned data should appear as shown below.



Press here to get users:

Status Code (\$u3998): 0
Number of Users (\$u3999): 2

	Name	Password
User 1:	Monitouch	1000
User 2:	Test	1111
User 3:		
User 4:		
User 5:		

6. For More Information

- 1) V-Server Application Database Function Manual
- 2) Microsoft SQL website: <http://www.microsoft.com/sql/default.mspx>