

Advantech AE Technical Share Document

Date	2018/04/24	SR#	1-3277926749
Category	<input type="checkbox"/> FAQ <input checked="" type="checkbox"/> SOP	Related OS	N/A
Abstract	CODESYS_How to use Advantech Database Agent and sample program		
Keyword	CODESYS, Advantech Database Agent		
Related Product	APAX-5580CDS		

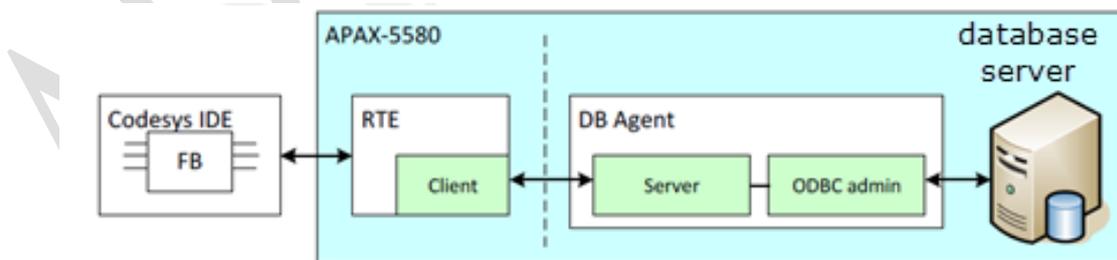
■ **Problem Description:**

This document shows how to use Advantech Database Agent and sample program.

■ **Answer:**

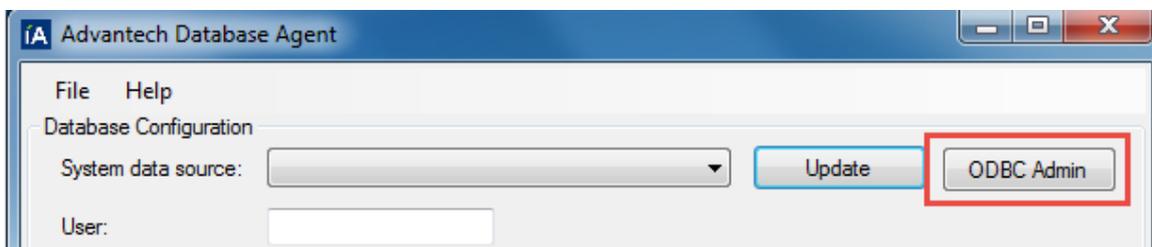
This document describes Advantech Database Agent and sample program with database library. Advantech Database Agent installed on APAX-5580 is a bridge between database library in CODESYS and ODBC Administrator in Windows. When users use Advantech database function blocks in IEC program, Advantech Database Agent will caught the SQL command from CODESYS and then send it to ODBC Administrator. Any SQL database supporting ODBC interface can receive those command and execute it.

I will use “txt database” to demonstrate this function. It can be easier to realize than other complicated databases (like MySQL...). The ODBC driver , “Microsoft Text Driver”, I used here can output the data to txt database in the local computer. The topology of this application is like the following figure. The database server, RTE and Advantech Database Agent are all installed in APAX-5580. Two segments should be verified when using CODESYS sample code, **CODESYS RTE to Advantech Database Agent** and **Advantech Database Agent to Database Server**. We will establish the Advantech Database Agent to Database Server first and then make CODESYS RTE connect to Advantech Database Agent.

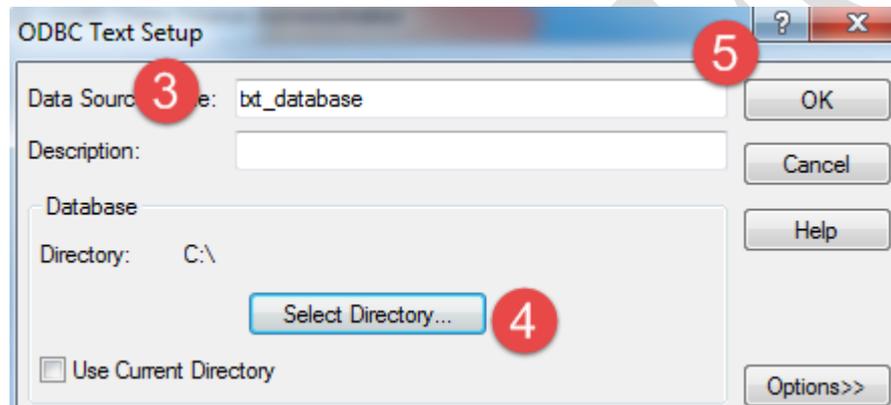
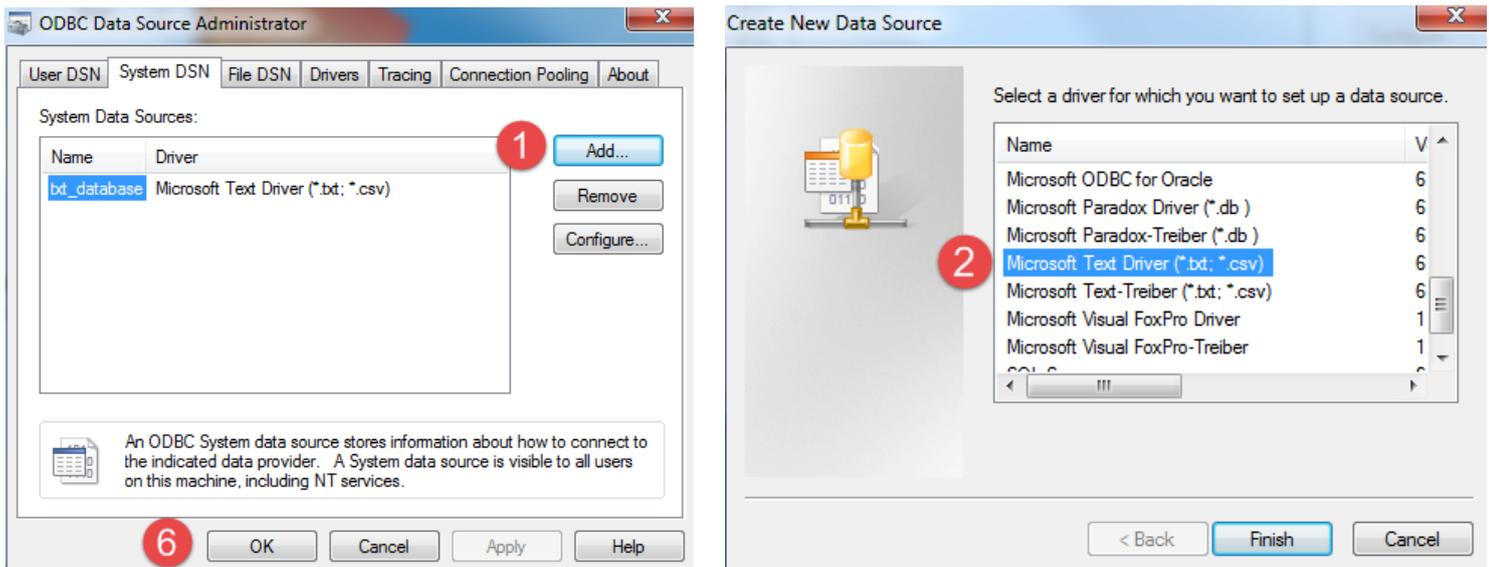


The following is step by step to establish this application.

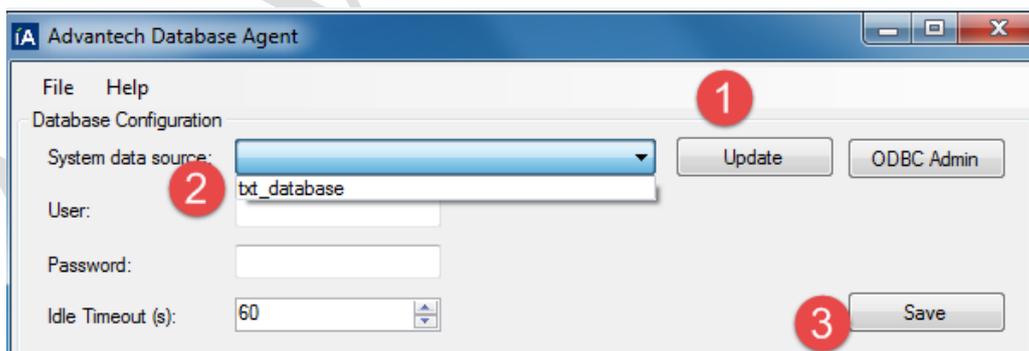
1. Install Advantech Database Agent in APAX-5580
2. Open Advantech Database Agent and chose **ODBC Admin**



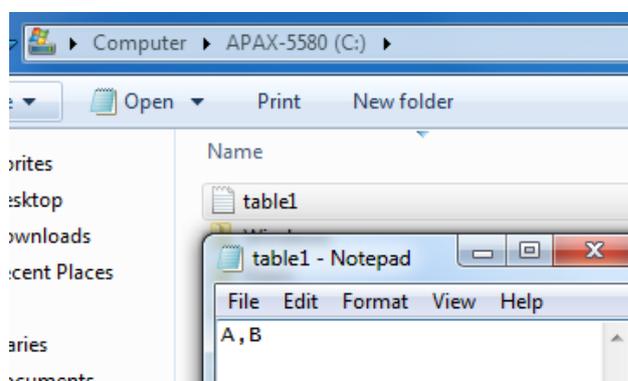
3. Add "Microsoft Text Driver" and select the location of "txt database" at System DSN Page. Then press **OK** to complete the setting of **ODBC Admin**



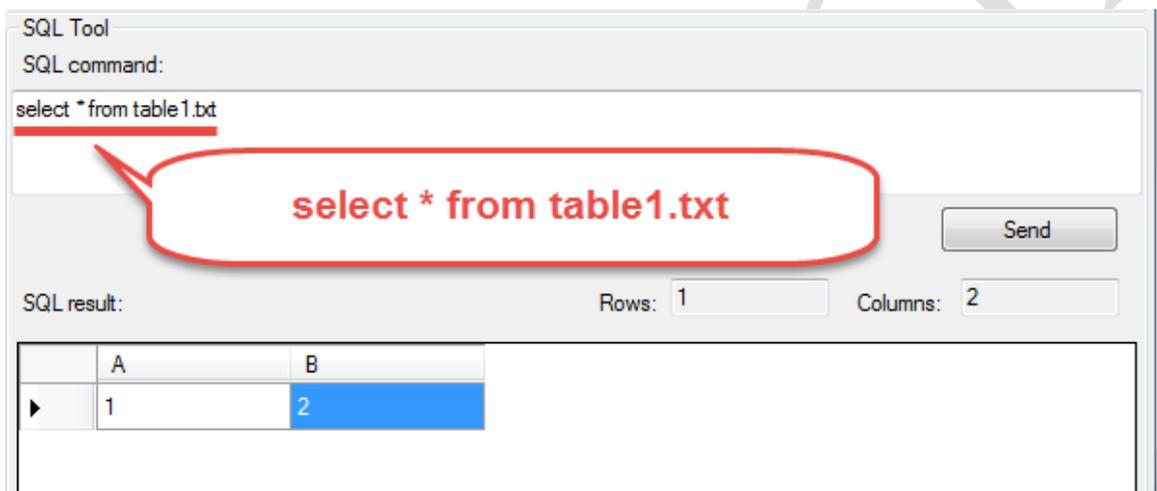
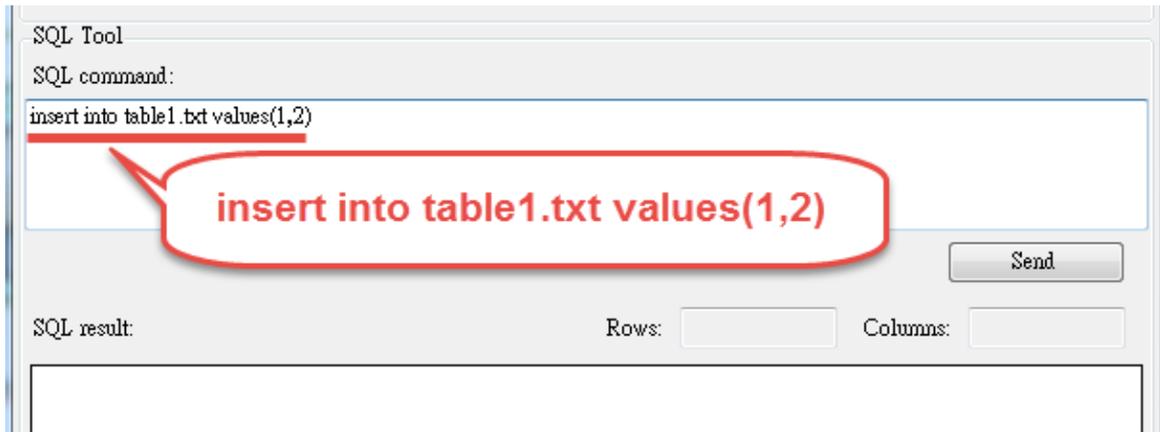
4. Click **Update** to import the System DSN you just created and choose it in list.



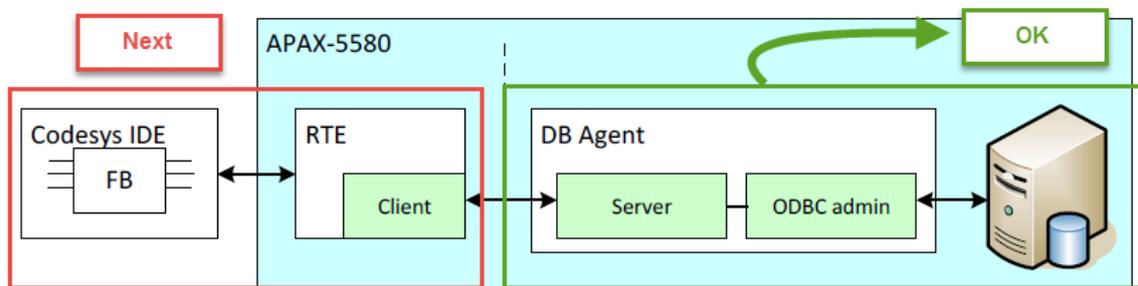
5. Go to the location of "txt database" and create "table1.txt" to be the "txt database".
6. Open it and create the fields first. The separator ";" is to separate each field.



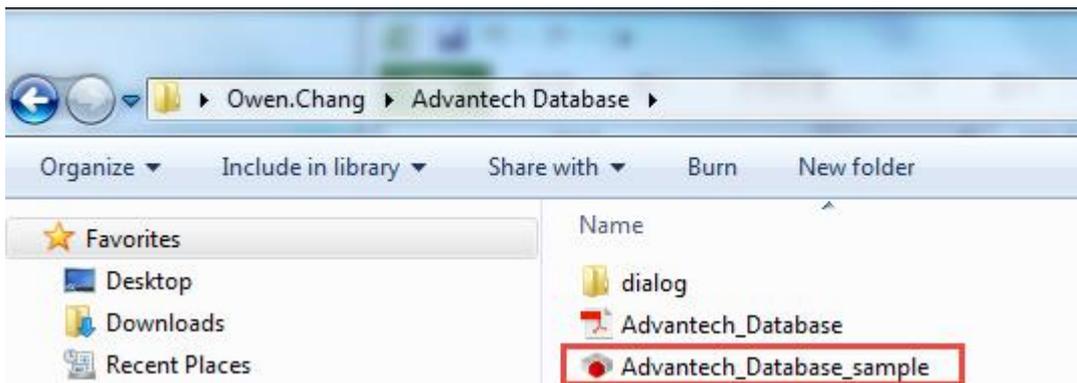
- Then validate the process between ODBC driver and database with INSERT/SELECT command by Advantech Database Agent.



If the "SQL result" will shows the value you just inserted. It means that the process between Agent, ODBC driver and database server is work. The next step is to execute the Advantech database sample program. There are some variable the programmer need to set before download it into RTE.



- After install Advantech CODESYS ADD ON, open the “Advantech_Database_sample.projectarchive” at ~/{username}/Advantech Database.

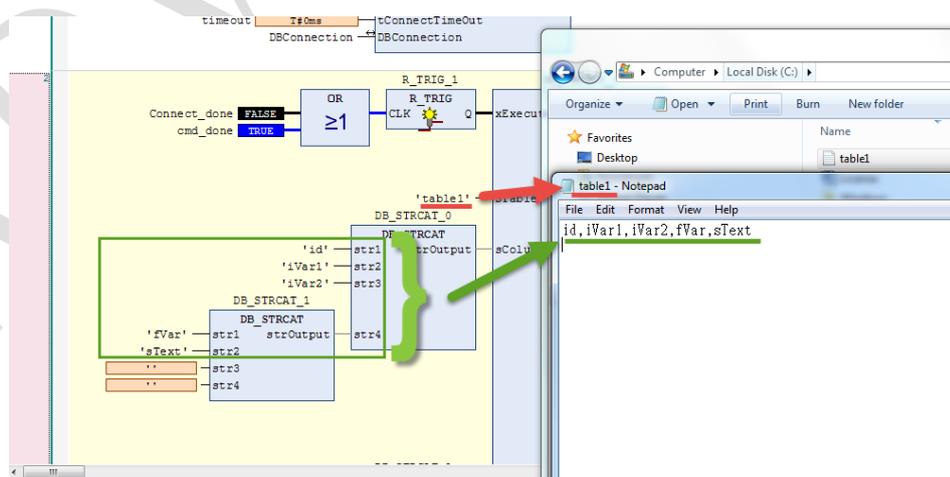


- Here introduce **POU_INSERT** sample task first. The main purpose of task **POU_INSERT** is to insert the data into database. In the sample code, the three values should be notice, **sTableName**, **sColumnName** and **sValue**.

Variable	Description
sTableName	table name in database
sColumnName	column in the table
sValue	inserted value for each column in table

For this sample, it wants to insert the value into **table1** including five fields, **id/iVar1/iVar2/fVar/sText**. Therefore, we create that in location of “txt database”.

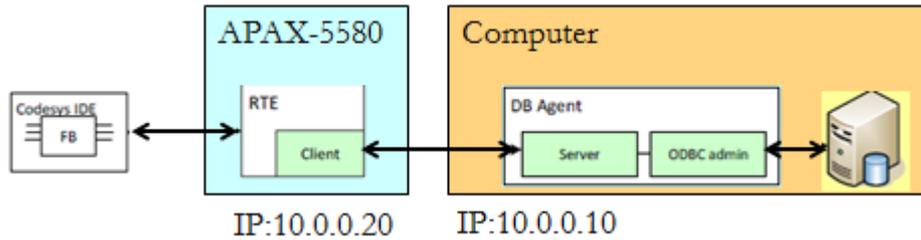
Please note that the number of column filled in **sColumnName** could be exactly the same as in the table.



Note:

1. If I want to make the "txt database" to another computer? How can I do?

Answer: put the Advantech Database Agent into the computer where the database is located and let **sIPAddress** in Advantech Database sample program point to it by IP address.

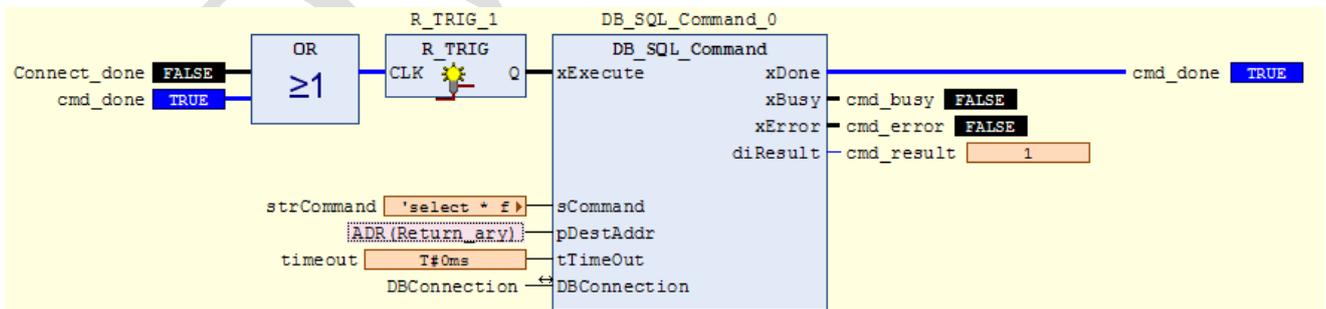


Name	Namespace	Effective version
3SLicense = 3SLicense, 3.5.10.0 (3S - Smart Software Solutions GmbH)	_3S_LICENSE	3.5.10.0
ADV_DB, 3.5.8.10 (Advantech Co. Ltd.)	ADV_DB	3.5.8.10
CmpErrors, 3.3.1.40 (System)	CmpErrors	3.3.1.40
Standard = Standard, 3.5.9.0 (System)	Standard	3.5.9.0
SysSocket, 3.5.8.0 (System)	SysSocket	3.5.8.0
SysTimeCore, 3.5.5.0 (System)	SysTimeCore	3.5.5.0
SysTypes Interfaces, * (System)	SysTypes	3.5.2.0

Name	Type	Value (editable)	Comment
maxRowSize	WORD	WORD#500	The max. row size of table array
maxColumnSize	WORD	WORD#10	The max. column size of table array
maxStringLen	BYTE	BYTE#255	The max. string length
maxRequestBufferSize	WORD	WORD#8192	The max. bytes of send buffer
maxRecvBufferSize	WORD	WORD#8192	The max. bytes of receive buffer
sIPAddress	STRING(15)	'10.0.0.10'	The IP address of Advantech database agent

2. How can use the POU sample task

Answer: The task POU can execute any SQL command which is set in the variable **strCommand**. The following is the example, make strCommand to be a string, 'select * from table1.txt'. The return Array will restore the selected data back from the table1.



strCommand	STRING(Param.max...	'select * from table1.txt'
timeout	TIME	T#0ms
Return_Ary	ARRAY [1..ADV_DB...	
Return_Ary[1, 1]	STRING(ADV_DB.Pa...	'1'
Return_Ary[1, 2]	STRING(ADV_DB.Pa...	'2'
Return_Ary[1, 3]	STRING(ADV_DB.Pa...	'3'
Return_Ary[1, 4]	STRING(ADV_DB.Pa...	'1.1'
Return_Ary[1, 5]	STRING(ADV_DB.Pa...	'test'