# How to setup "server side database access" (sdb.ctl) for WinCC OA

The sdb.ctl is a client library which can be used to access relational databases from the WinCC OA client without the need to install any database client software at the client. The connection to the relational database is handled by the WinCC OA server. The client communicates with the WinCC OA server only by data points. The SQL-Statements are transferred by data points to a WinCC OA control, this control executes the SQL-Statements and sends back the result to the client by data points.
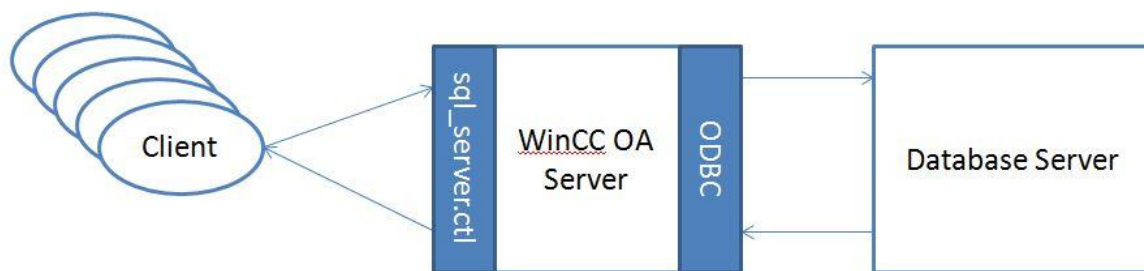

1. First install the AddOn „Advanced Maintenance Suite (AMS)". The needed libraries and control scripts are part of this AddOn.
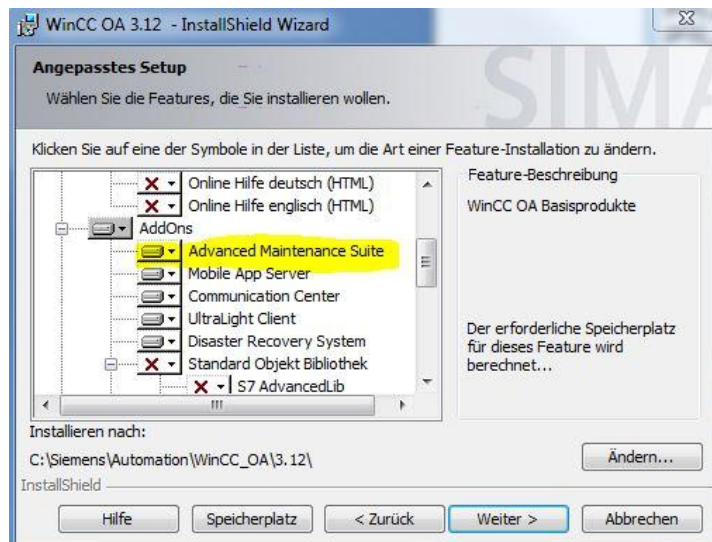
2. Add AMS as sub-project to your project configuration file.
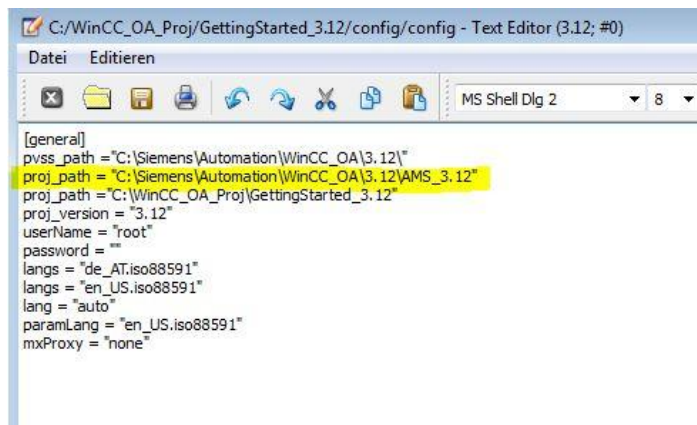
3. At the WinCC OA server you have to install and configure the database client. In this example we used Oracle. For Oracle we have to configure the tnsnames.ora to access our oracle database.
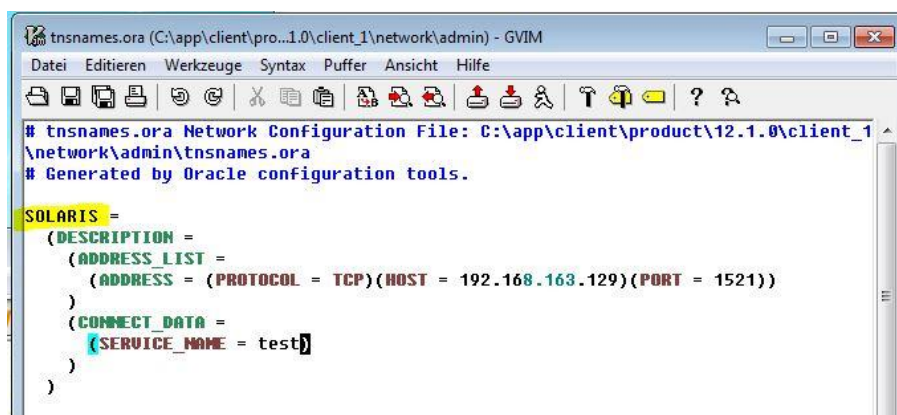
4. At the Oracle database we created a tablespace and a user.

5. At the WinCC OA server we have to add an ODBC data source for the connection to the Oracle database.
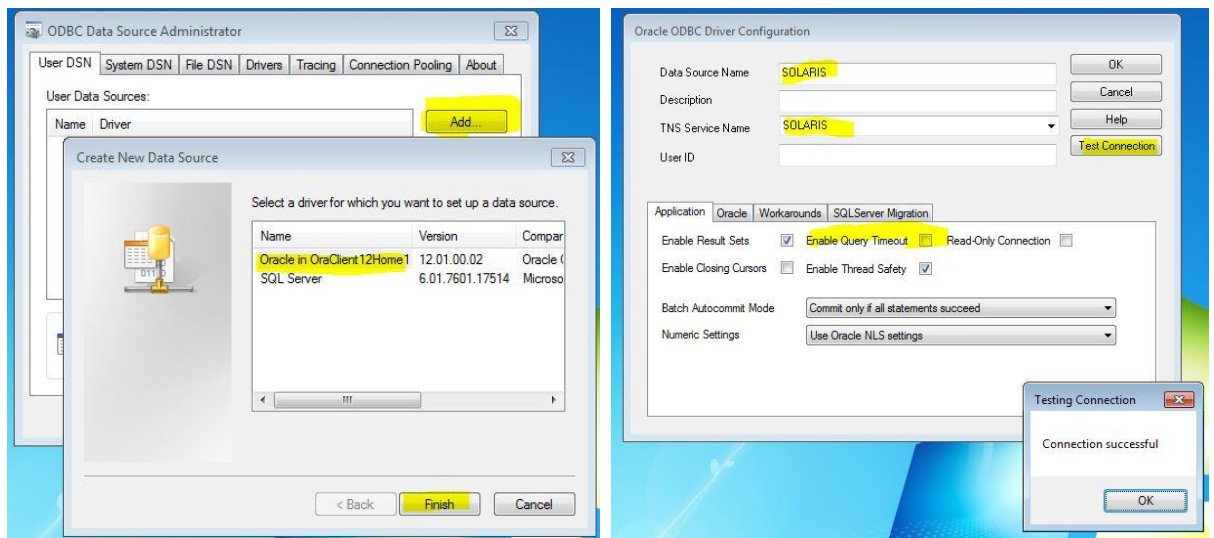
6. With the WinCC OA ASCII-Manager we have to import some data points which are needed for the communication.
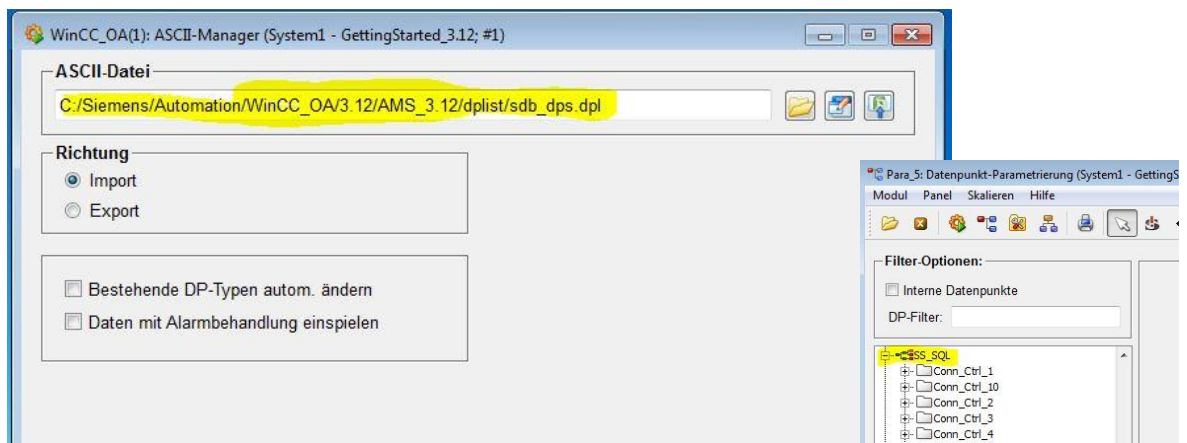
7. At the WinCC OA server add a control manager with the script "sql_server.ctl"

8. For a simple test script we created a simple table in the Oracle database and added two records.
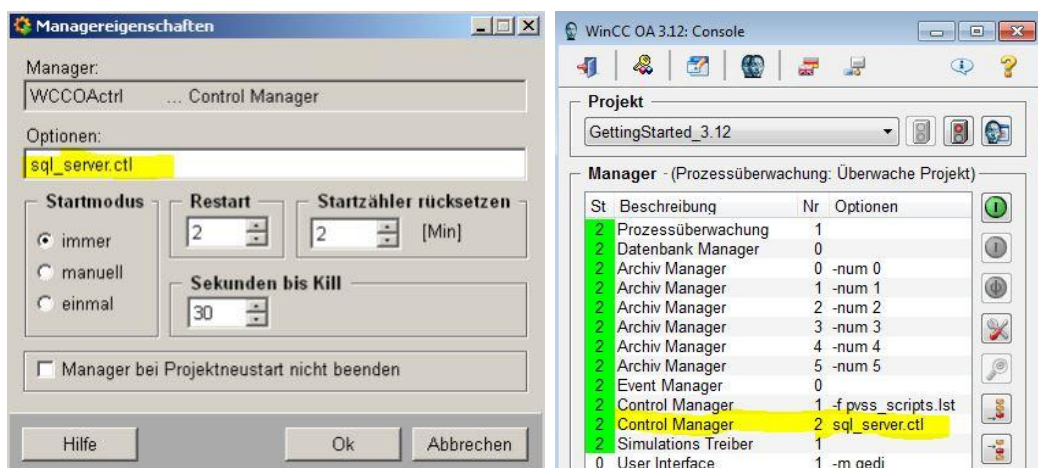
```
C:\Users\vogler>sqlplus system/manager@solaris

SQL*Plus: Release 12.1.0.2.0 Production on Mo Dez 15 13:10:11 2014

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Last Successful login time: Mo Dez 15 2014 13:46:59 +01:00

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
with the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics
and Real Application Testing options

SQL> alter user test quota unlimited on users;

User altered.

SQL> exit
C:\Users\vogler>sqlplus test/test@solaris

SQL*Plus: Release 12.1.0.2.0 Production on Mo Dez 15 13:09:32 2014

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Last Successful login time: Mo Dez 15 2014 13:50:23 +01:00

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
with the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics
and Real Application Testing options

SQL> create table mytable (i integer, s varchar2(1000));

Table created.

SQL> insert into mytable values (1, 'hello');

1 row created.

SQL> insert into mytable values (2, 'world');

1 row created.

SQL> commit;

Commit complete.

SQL>
```

9. At the WinCC OA client it is now easily possible to access the relational database. Note that at the WinCC OA client there is no need to install any database client software. Only WinCC OA is needed.

```
1  main()
2  {
3    string conn=sdbMyConnStr();
4    sdbOpen(conn, "DSN=SOLARIS;UID=test;PWD=test");
5
6    dyn_dyn_anytype res;
7    sdbSelect(conn, "SELECT * FROM mytable", res);
8    DebugTN(res);
9
10   sdbExecute(conn, "INSERT INTO mytable VALUES (3, 'winccoa')");
11
12   sdbSelect(conn, "SELECT * FROM mytable", res);
13   DebugTN(res);
14
15   sdbClose(conn);
16 }
```

10. The result of the simple test script we implemented and executed at the client. We have read the content of the table, inserted one more row "winccoa" and read the table again.

```
WCCOAui1:2014.12.15 13:20:01.749[dyn_dyn_anytype 2 items
WCCOAui1:      1:        dyn_anytype 2 items
WCCOAui1:        1: 1
WCCOAui1:        2: "hello"
WCCOAui1:      2:        dyn_anytype 2 items
WCCOAui1:        1: 2
WCCOAui1:        2: "world"
WCCOAui1:]
WCCOAui1:2014.12.15 13:20:01.799[dyn_dyn_anytype 3 items
WCCOAui1:      1:        dyn_anytype 2 items
WCCOAui1:        1: 1
WCCOAui1:        2: "hello"
WCCOAui1:      2:        dyn_anytype 2 items
WCCOAui1:        1: 2
WCCOAui1:        2: "world"
WCCOAui1:      3:        dyn_anytype 2 items
WCCOAui1:        1: 3
WCCOAui1:        2: "winccoa"
WCCOAui1:]
```

```
SQL> select * from mytable;

           I
---------
S
-----------------------------------------

           1
hello

           2
world

           3
winccoa

SQL>
```