How can you output tags from an SQL database via a trend archive?

WinCC flexible 2008 SP2

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Question

How can you output tags from an SQL database via a trend archive?

Answer

Follow the instructions and notes listed in this document for a detailed answer to the above question.

Contents

1 Configuration Notes

This entry includes the principal configuration steps for...

- Creating a Microsoft SQL database.

- For archiving tags in a Microsoft SQL database.
  The archive name is assigned "**dynamically**" in the example in this FAQ.
  (The name is created only at runtime).

- Reading out the archived tags via a trend display. Here you can preset the period of time in a selection window.

- Exporting the contents of the archived entries to a CSV file.

Name for the tag archive

The archive names in the SQL database are assigned "**dynamically**" in the example in this FAQ. This means that the name of each archive is created only at runtime.

At Runtime a database is created automatically every month with the relevant database name. The values acquired are archived every hour in this database.

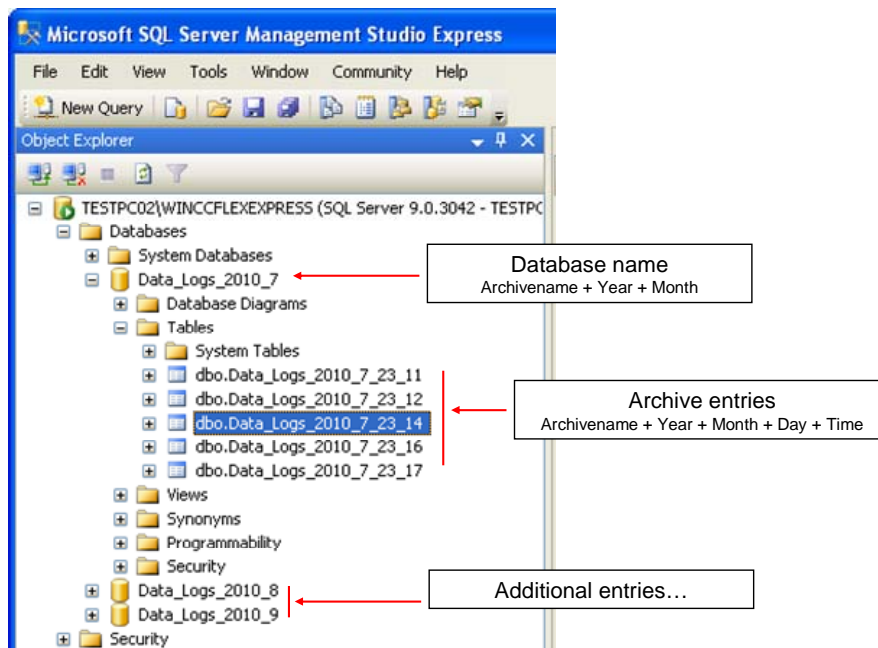The database name is composed of the elements below:

- Archive name + year + month

The archive names in this database are composed of the elements below:

- Archive name + year + month + day + time

The figure below shows an example of how the archived entries are displayed.

Figure 1-1

SQL database and WinCC flexible

When WinCC flexible 2008 is installed, the "Microsoft SQL Server 2005 Express Edition" is also installed.

You can log your data in this Microsoft SQL database via WinCC flexible.

Alternatively, you can download the "Microsoft SQL Server 2005 Express Edition" from the Microsoft Support site and install it separately on another PC. This would be the case, for example, if you wanted to stored data on an external PC on which WinCC flexible is not installed.

In this case, check which database is released for WinCC flexible (Help system > Search > Released databases).

Microsoft SQL Server Management Studio Express

The "Microsoft SQL Server Management Studio Express" (SSMSE) provides a graphical management tool for the "MS SQL Server 2005 Express Edition".

The "Microsoft SQL Server Management Studio Express" is not included in the WinCC flexible delivery package.

If required, you can download the "Microsoft SQL Server Management Studio Express" from the Microsoft Support site.

When do you need the SQL Management Studio?

If you want to enter, edit and view data in the "Microsoft SQL Server 2005 Express Edition", you need the
"Microsoft SQL Server Management Studio Express".

Note	When "MS SQL Server" is mentioned in the documentation, this always refers to the "Microsoft SQL Server 2005 Express Edition". When "Microsoft SQL Management Studio" is mentioned in the documentation, this always refers to the "Microsoft SQL Server Management Studio Express".

2 SQL Database

Information on how to operate the SQL database is given below.
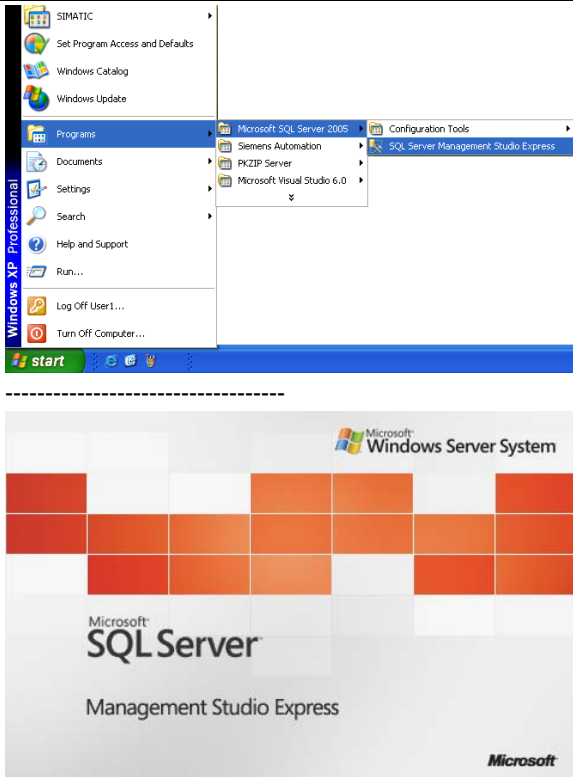
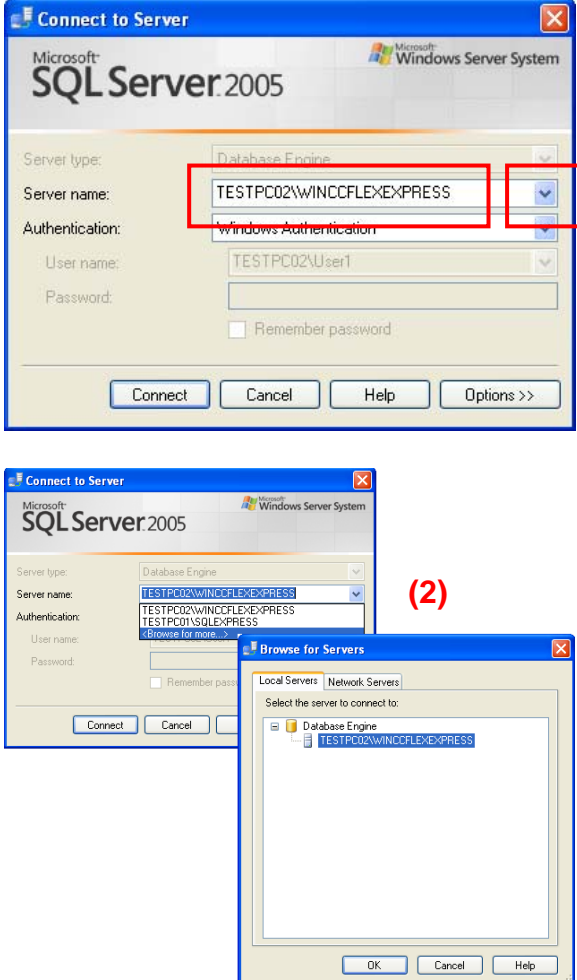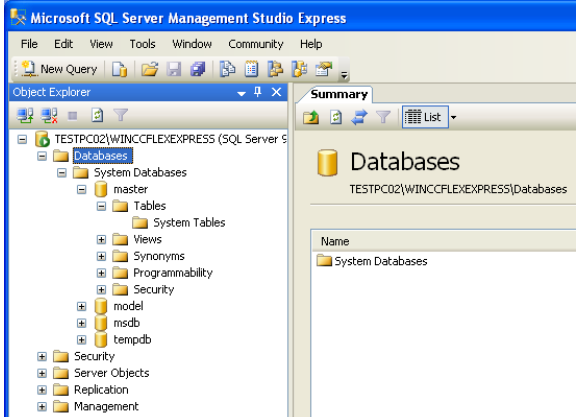## 2.1 Open the "MS SQL Management Studio"

You need the "Microsoft SQL Management Studio" to view and change the data archived in the SQL database.

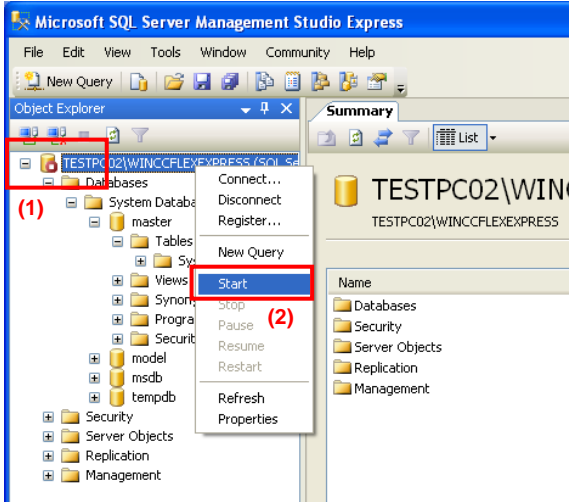**Requirements:**

- Windows XP operating system
- Microsoft SQL Management Studio is installed.

Table 2-1

No.	Description	Picture
1.	**Start the "SQL Management Studio"** Start the "Microsoft SQL Management Studio" on your PC. "Start > Programs > Microsoft SQL Server 2005 > SQL Server Management Studio".	
	"Microsoft SQL Server Management Studio Express" starts.	

No.	Description	Picture
2.	**Set up connection to the local server** **Specify the server name** The server name consists of the following elements: "**Computer name\Instance name**". The instance name in this example is "**WINCCFLEXEXPRESS**". You can specify the server name and instance name "manually" or via the drop-down list (1). • From the drop-down list you select the item "**<Browse for more…>**". Another dialog field opens (2). • Select the "**Local Servers**" menu command. Select your local server and confirm the input with "**OK**". **Authentication** Select the authentication here. In this case "**Windows Authentication**". After specifying the server name and authentication, click on the "**Connect**" button. The connection to the server is set up.	(1) (2)
3.	Overview of the "Microsoft SQL Server Management Studio Express".	

No.	Description	Picture
4.	**Start the SQL server** If the server has not already been started, indicated by the "red" icon (1), then start the server manually. • In the "Object Explorer", you right-click on the instance name of the connection and in the pop-menu that opens you select the "**Start**" item (2). • You are then asked if you really want to restart the SQL server. Acknowledge the message with "**Yes**". The SQL server starts.	
5.	You do not need to change any other settings.	

2.2 Remote access to the SQL database

In section 2.1 the SQL server and the WinCC flexible Runtime are installed on the same PC.

In this section, the SQL server and WinCC flexible Runtime are each installed on a different computer.

The PC with the SQL server serves as the "central PC" on which the data management is conducted. All the WinCC flexible Runtime stations store their data there centrally.
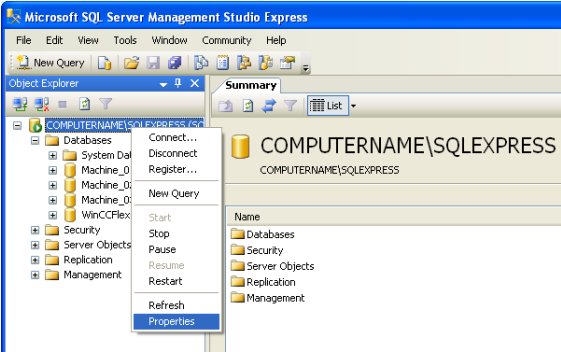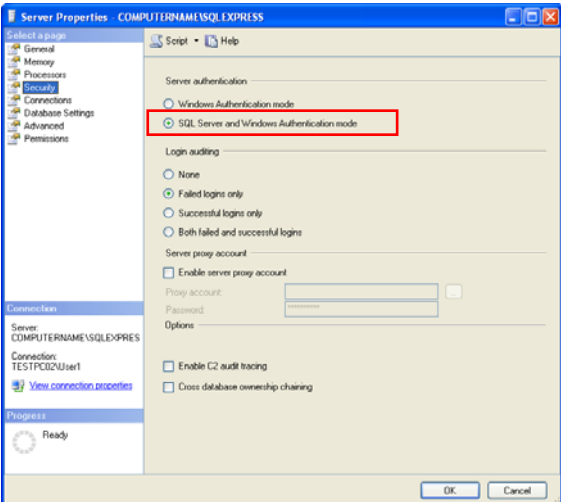
Figure 2-1
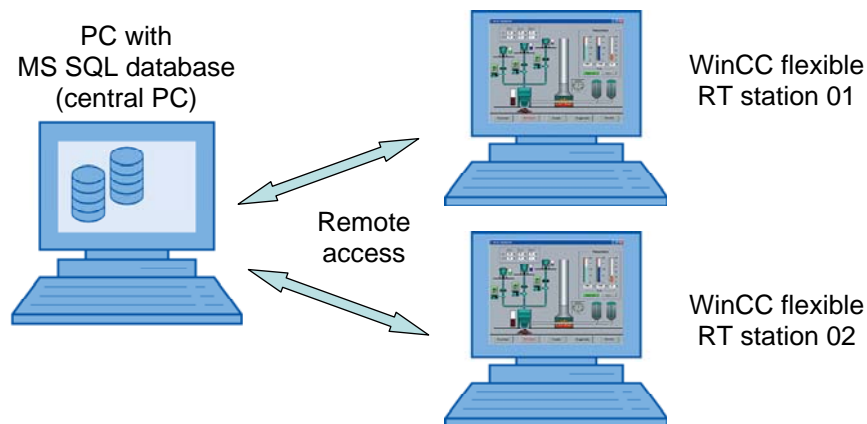
The default setting of the "Microsoft SQL Server 2005 Express Edition" does not permit "Remote Access".
Below are the settings to be made to enable "Remote Access".
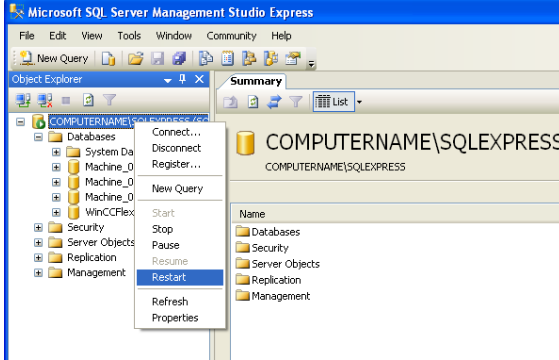
2.2.1 Enable remote access

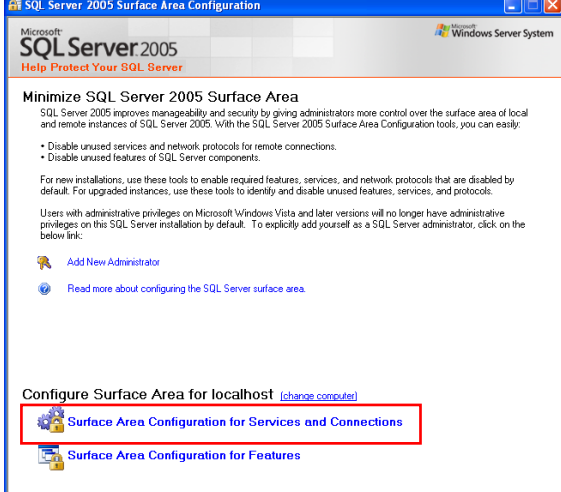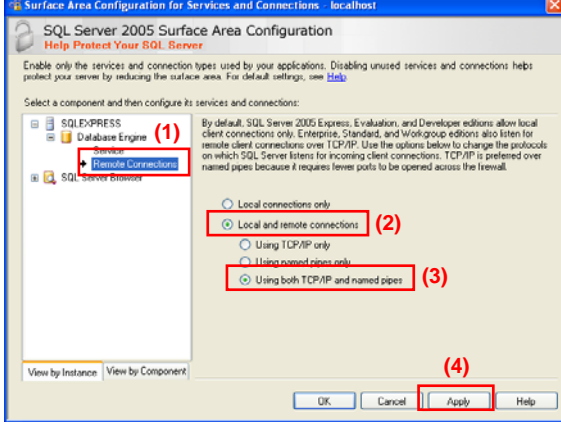The settings are to be made on the PC on which the SQL server is installed.

Table 2-2
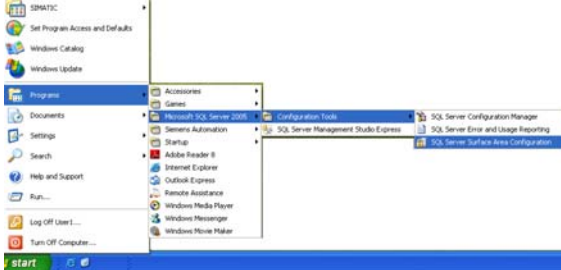
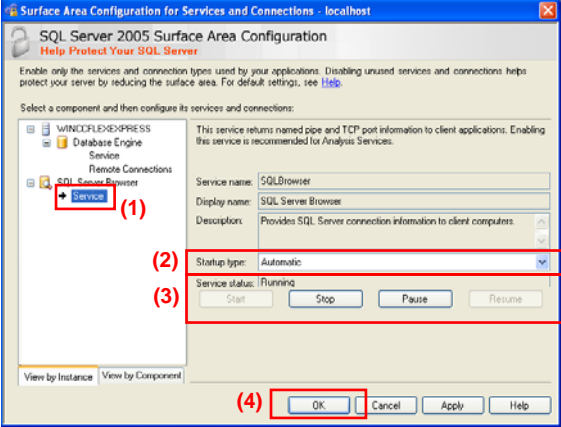| No.	Description	Picture
1.	First, execute the steps described in section 2.1. **Note:** In this case, the instance name is now not "**WINCCFLEXEXPRESS**", but "**SQLEXPRESS**". (With the SQL Server 2005, the name for the default instance is "SQLEXPRESS".)	
2.	**Edit server properties** In the "Object Explorer", you right-click on the instance name of the connection and via the pop-menu that opens you open the "**Properties**" of the server connection. The "Properties" dialog box opens.	
3.	**"Properties" dialog box** • In the "**Select a page**" list you select the "**Security**" item. • Then, under "Server authentication", you select the "**SQL Server and Windows Authentication mode**" option. • Confirm the entries with "**OK**". • You then get a message informing you that the changes only become effective after restarting the SQL server. Acknowledge the message with "**OK**". This closes the dialog box.	

No.	Description	Picture
4.	**Restarting the SQL server** • In the "Object Explorer", you right-click on the instance name of the connection and in the pop-menu that opens you select the "**Restart**" item. • You are then asked if you really want to restart the SQL server. Acknowledge the message with "**Yes**". The SQL server shuts down and then restarts. If you do not want to make any more entries, you can close the "Microsoft SQL Management Studio".	

2.2.2 SQL server surface area configuration

Via this service you can edit the SQL server surface area configuration. The settings required for "Remote Access" are described below. The settings are to be made on the PC on which the SQL server is installed.

Table 2-3

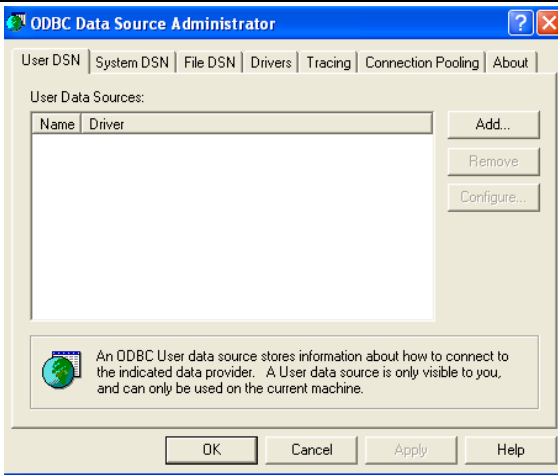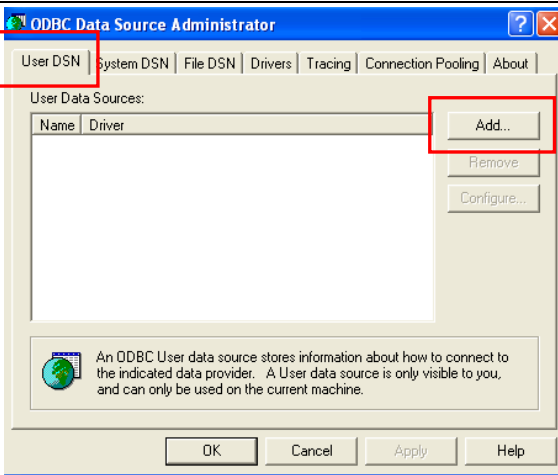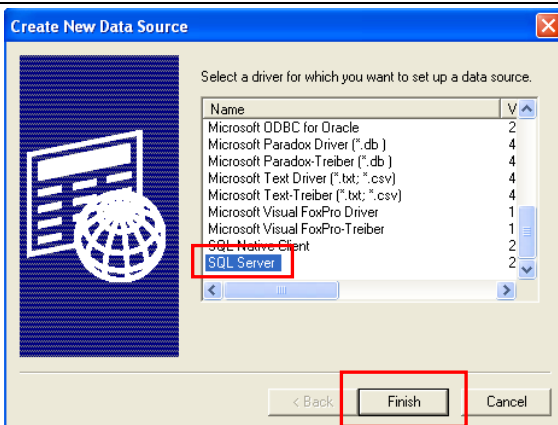| No.	Description	Picture
1.	**Calling the "SQL server surface area configuration"** Start the "SQL server surface area configuration" on your PC. "Start > Programs > Microsoft SQL Server 2005 > Configuration Tools > SQL Server Surface Area Configuration". The "SQL Server Surface Area Configuration" dialog box opens.	
2.	**"SQL Server 2005 Surface Area Configuration" dialog box** In the dialog box you select the configuration "**Surface Area Configuration for Services and Connections**". The "Surface Area Configuration for Services and Connections" dialog box opens.	
3.	**The "Surface Area Configuration for Services and Connections" dialog box.** • In the list, you select the component "Your SQL server instance (SQLEXPRESS) > Database Engine > Remote Connections" (1). • Now, on the right, you select the options "Local and remote connections" (2) and "Using both TCP/IP and named pipes" (3). • Click on "**Apply**" (4) to confirm the selection. You then get a message informing you that the changes only become effective after restarting the SQL server. Acknowledge the message with "**OK**".	

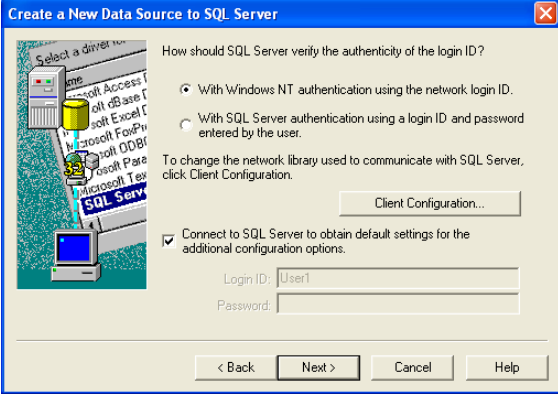| No.	Description	Picture
4.	**The "Surface Area Configuration for Services and Connections" dialog box.** • In the list, you select the component "SQL Server Browser > Service" (1). • Then, on the right-hand side, open the "Startup type" drop-down list and select the "**Automatic**" option (2). • If the "Service status" is set to "Running", confirm once with the "**Stop**" button and then with the "**Start**" button. If the "Service status" is set to "Stopped", then click on the "**Start**" button. • Confirm the entry via the "**OK**" button (4). This closes the dialog box.	
5.	The "SQL Server 2005 Surface Area Configuration" dialog box is displayed again. Close this dialog box again. This completes the settings for "Remote Access". Now you can access the SQL database from the "WinCC flexible RT stations".	
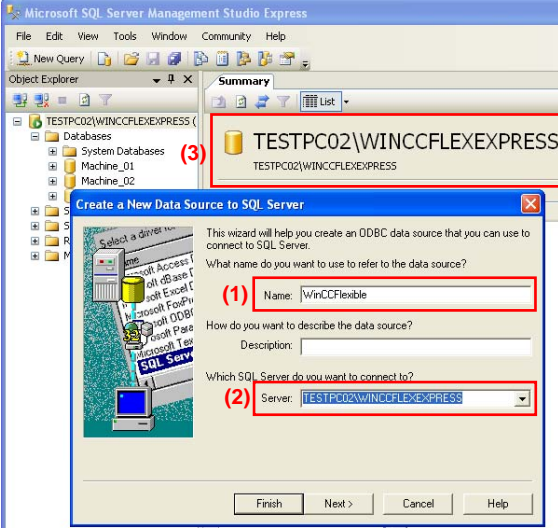
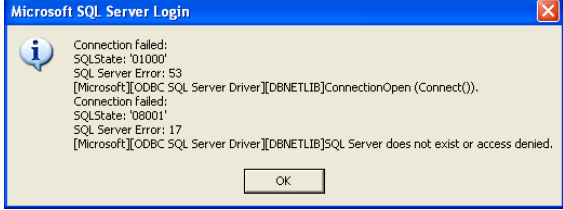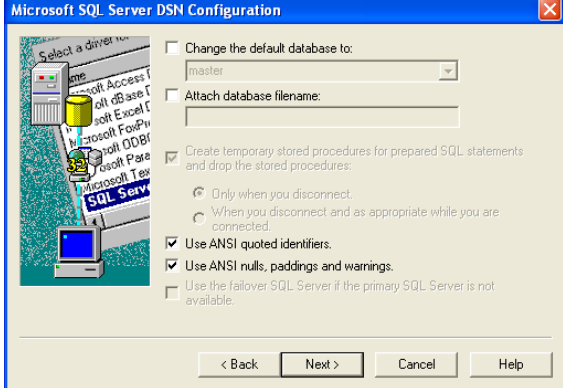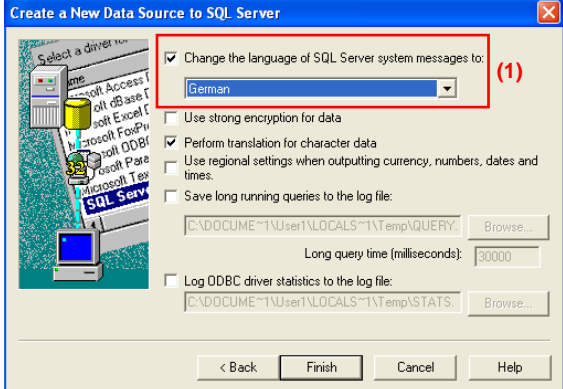## 2.3 Configure the ODBC data source

Via an ODBC application you create an ODBC data source via which you set up a connection to a Microsoft SQL server.
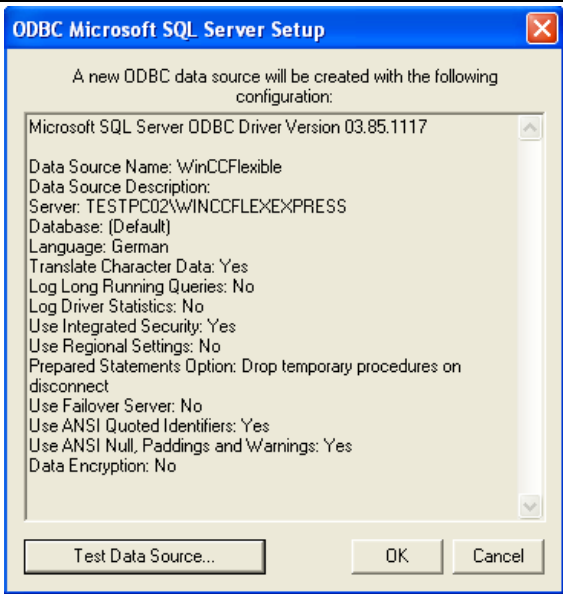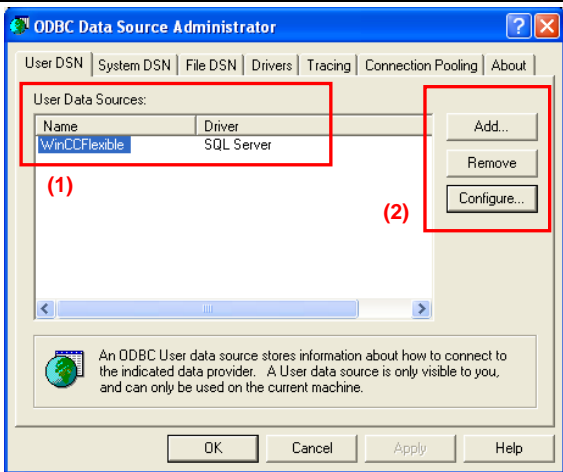
The ODBC settings must be made on the PC on which the WinCC flexible Runtime is installed.

Table 2-4

No.	Description	Picture
1.	**Calling the "ODBC Data Source Administrator"** Open the "ODBC Data Source Administrator" on your PC. "Start > Settings > Control Panel > Administration > Databases (ODBC)". The dialog box shown on the right opens. **Note:** There might already be entries from user data sources. You do not need to pay attention to these.	
2.	**Adding a data source** Select the "**User DSN**" tab and then click on the "**Add…**" button. The "Create New Data Source" dialog box opens.	
3.	**Selecting an SQL server** In the drop-down list you select the "**SQL Server**" item and then click on the "**Finish**" button. The "Create a New Data Source to SQL Server" dialog box opens.	

No.	Description	Picture
4.	**Define the reference name and server** Specify a data source name in the "**Name**" dialog box (1). You use the name to reference the database and storage location. The name you use here must match the name that you use to identify the "DSN" (Data Source Name) in WinCC flexible ES. The "Data Source Name" is stored in multiple scripts (see link). The name is also used for parameterizing the tag log (see link). Specify a server in the "**Server**" dialog box (2). Select the server on which the data is to be stored and called. This can be your "local PC" on which WinCC flexible Runtime runs or a "Central PC" (Remote Connection) on which all the data is stored. **TIP:** You can select already available servers from the drop-down list. If you server is not displayed, open the "SQL Management Studio" (see section 2.1). Copy the name of the "**Instance**" (3) and add this name to the "**Server**" input field. Then click on the "**Next>**" button.	
5.	**Login settings** Select a login option for the SQL data source. If you are in a domain, you can then use your domain account. In this example, we have taken the options selected in the picture. Then click on the "**Next>**" button. **Note:** When you click on the "**Next**" button, the system attempts to set up a connection to the SQL server. If this does not succeed, you get an error message (see next point).	

No.	Description	Picture
6.	**Possible error message** If connection setup to the SQL server has failed, check the "**Server name**" specified. Via the "**<Back**" button you can return to the previous screen. **Remote access** If you do not want to access the "local server" but the "remote server" (central PC), then check the points below. • Is the PC to be reached via a "PING" or via the "computer name"? • Is the login data correct? The user of the client operating system must also be created on the SQL server operating system (identical name and password for all computers)! • Check the cable connection between the PCs. • See section 2.2.	
7.	**Select the database** You do not have to select any special database in the example in this FAQ. Then click on the "**Next>**" button.	
8.	**Complete the user data source** On this page you can make a few more settings. It is useful to change the language of the SQL server system messages to the relevant "local language" (1). Complete the user data source by clicking on the "**Finish**" button. When you click on the "**Finish**" button, the "ODBC Microsoft SQL Server Setup" window opens. All the settings you have made are displayed once again in this window.	

No.	Description	Picture
9.	**ODBC Microsoft SQL server setup** All the settings you have made are displayed once again in this window. Furthermore, you can test the connection via the "**Test Data Source…**" button. Close the dialog by clicking on the "**OK**". When you click on the "**OK**" button, the "ODBC Data Source Administrator" window opens.	
10.	**View the newly created user data source** The "ODBC Data Source Administrator" dialog box displays your defined user data source (1). Via buttons (2) you can • Add other user data sources. • Delete a user data source. • Edit a user data source. Mark the associated user data source. If you do not want to make any more entries, close the window with the "**OK**" button.	

3   WinCC flexible ES

This chapter describes how to configure and make various settings for logging data in an SQL database.
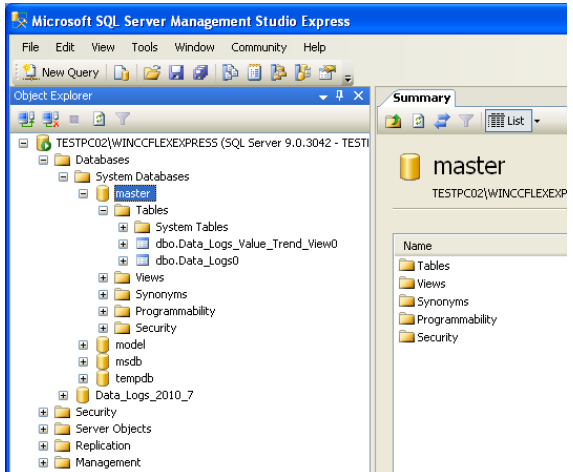Details are given in the attached project.

Note	All the settings already described have been made in the attached configuration.

3.1   Create a tag log

The settings below are to be made generally regardless of whether it is a message or tag log.

Table 3-1
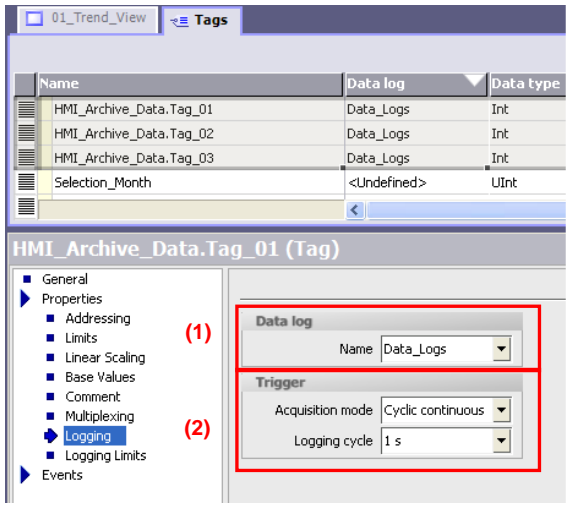
No.	Description	Picture
1.	**Create a tag log** First create two new logs. **In this example:** • Data_Logs • Data_Logs_Trend_View **Settings:** • **General** Open the properties of the tag log "Data Logs > General". • **Storage location** (1) From the drop-down list, select "**Database**" as storage location. • **Storage location** (2) Select the option "**User-defined data source name**" and enter the name of the data source. In this case "**WinCCFlexible**" (the name must match the name you used in the ODBC parameterization see link).	
2.	**Define properties** **Properties** Open the properties of the tag log "**Properties > Properties**". You can make the settings individually. Detailed information on the separate points is available in the Online Help of WinCC flexible.	

No.	Description	Picture
3.	**SQL database view** If you start WinCC flexible Runtime and a connection to the SQL server is established, the logs configured previously are stored in the SQL database as follows. Open the folder "**Databases > System Databases > master > Tables**". The prefix "dbo" and the number "0" are added automatically by the system.	

3.2 Tag Logging

Define logging properties

Table 3-2

No.	Description	Picture
1.	**Define logging properties** • Mark the tags to be logged. (Tags of the "STRING" type cannot be logged). • **Logging** Open the properties of the tags "Properties > Properties > Logging". • **Tag log** (1) Select the relevant tag log from the drop-down list. In this case "Data_Logs". • **Trigger** (2) Here you enter the acquisition mode. In this case "Cyclic continuous". You do not need to make any other settings for logging.	

3.3 Scripts
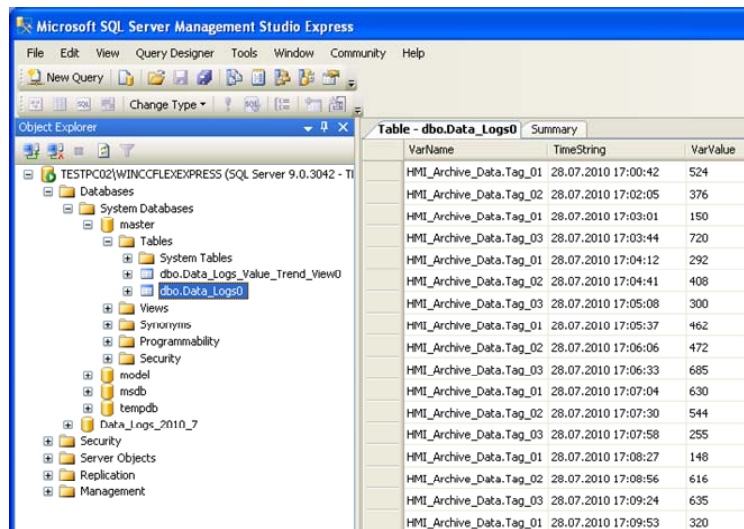
3.3.1 Script editing for logging

In the sample project attached the scripts are used to achieve a clear view of the values logged in the database. In addition, the scripts are used to read out the logged data of the SQL database via a WinCC flexible Runtime.

All the logged data is logged by default in the "Data_Log" log. There is **no** script required for this.

The figure below shows an excerpt of entries logged in "Data_Log".

Figure 3-1

In this example three values are logged every second. After just a short time the table becomes very "long" and it is difficult to pick out a specific value for a specific time.

Using the scripts you can split the existing table into several "small" tables. In this example a database is created for each month. A separate log is created for every hour in this database.
The name of the archive is created automatically.

Furthermore, you can use the scripts and a text list to predefine a specific period of time and select a specific log. The values from the log chosen can then be displayed via a trend archive.

3.3.2 Scripts used

This chapter provides you with information on the scripts configured.

Essentially, the scripts have the same format.
Lines 9 to 14 are for setting up the connection to the SQL database.
Figure 3-2

Line 5:   Declaration of tags

Line 9:   The "ADO" command is for accessing the database of an SQL server and the tables and data records contained in it. "ADODB.Connection" -> Database connection

Line 10: The "ADO" command is for accessing the database of an SQL server and the tables and data records contained in it. "ADODB.Recordset" -> Collection data records

Line 14: The DSN name "**WinCCflexible**" references the database and the storage location. This name is used in all scripts.
The name must match the name you used when configuring the ODBC data source (see link).

The description of the scripts below limits itself to the function that scripts execute. Please refer to the configuration for details.

S1_Create_Database_Table

The script is executed once when WinCC flexible Runtime starts.

The script creates a new database for the current month in an SQL database.
If a database already exists for the current month, a system message is issued.

The database name is composed of the elements below:

– Archive name + year + month

S2_Archive_Data_Hourly

The script is call once at the beginning of each hour via the scheduler.

The script copies all the values of the "previous" hour from the "Data_Logs" archive and inserts the data into a newly created archive.

The name of the new archive is composed of the elements below:

– Archive name + year + month + day + hour

Functional sequence:

1. When the WinCC flexible Runtime starts, the "Data_Logs" archive (Link) is created in the system database of the SQL server. The configured values are stored continuously in this archive.

2. At the beginning of each hour the script "S2_Archive_Data_Hourly" is called via the "Scheduler".
   The script creates a new archive for the past hour.
   Then all the values of the past hour between the minute "xx:00:00" and the minute "xx:59:59" are copied from the "Data_Logs" archive and pasted into the newly created archive.

3. After copying, the "old" values are deleted in the "Data_Logs" archive.

4. **Example:**
   Archiving is started at 14:35:42. At 15:00 the scheduler executes the script.
   All the values between 14:35:42 and 14:59:59 are stored in the archive named "Data_Logs_2010_7_28_14".
   (Archive name + year + month + day + hour)

Continuous archiving of the subsequent data in the "Data_Logs" archive is not interrupted during the copying procedure.

S3_Load_Database_Table

The script is called via the "Download archive data" button.

The script copies the data logged in the given time and pastes it into the "Data_Logs_Trend_View" archive.
These values from the "Data_Logs_Trend_View" are displayed via a trend display.

If the archive selected is not available, a system message is issued.

Functional sequence:

1. When the WinCC flexible Runtime starts, the "Data_Logs_Trend_View" archive (Link) is created in the system database of the SQL server. The archive acts as a "temporary" buffer for values.

2. The "S2_Archive_Data_Hourly" script creates a new archive with the corresponding values every hour.

3. You select a file archived in the SQL database by entering a specific point in time (date and time) via text lists.

4. After specifying the time period you press the "Download archive data" button to execute the script.
Based on time period specified the script searches the archived file in the SQL database and copies the contents into the "Data_Logs_Trend_View" archive.

The values from the "Data_Logs_Trend_View" archive can then be displayed via a trend archive.

S4_Export_Archiv_As_CSV_File

You call the script via the "Export selected archive as CSV file" button.

The script copies the data archived in the SQL database from the specified period of time and creates a *.CSV file on the C:\ drive.
The name of the new file is composed of the elements below:

  – Archive name + year + month + day + hour

If the archive selected is not available, a system message is issued.

Functional sequence:

1. The "S2_Archive_Data_Hourly" script creates a new archive with the corresponding values every hour.

2. You select a file archived in the SQL database by entering a specific point in time (date and time) via text lists.

3. After specifying the time period you press the "Export selected archive as CSV file" button to execute the script. Based on time period specified the script searches the archived file in the SQL database and creates a CSV file out of the data available.
Example:
File in the SQL database: Data_Logs_2010_7_29_14
File on drive "C:\":   Data_Logs_2010_7_29_14.csv

4 Operate the Sample Application

This chapter describes how to operate the application.

4.1 Call the data in the SQL database

Requirements

- The settings as described in chapter 2 "SQL Database" have been made.
- Data has been logged in the SQL database via WinCC flexible Runtime.

Open the SQL table

Table 4-1

No.	Description	Picture

1.	**Open the SQL table**
	
	You only have to open the SQL table to see the data in the SQL database.
	
	Open the "SQL Management Studio". (See section 2.1).
	
	"Standard" Archive (1)
	In the folder "Databases > System Databases > master > Tables" you see the archive files that WinCC flexible creates automatically when Runtime starts (Link).
	In this example:
	  - Data_Logs_Trend_View0
	  - Data_Logs0
	
	Created Archive (2)
	In the "Data_Logs_xx_xx > Tables" database you see the data archived using the scripts.
	Right-click on the relevant "table" and select the "**Open Table**" item in the pop-up menu. The table with the stored data opens.	

2.	**Table View** The figure below shows you an opened table.. In this case it is the data from the table "**Data_Logs_2010_7_29_17**". You can add new values to the table and change existing values. If you make changes to the table, you must then save the data.	

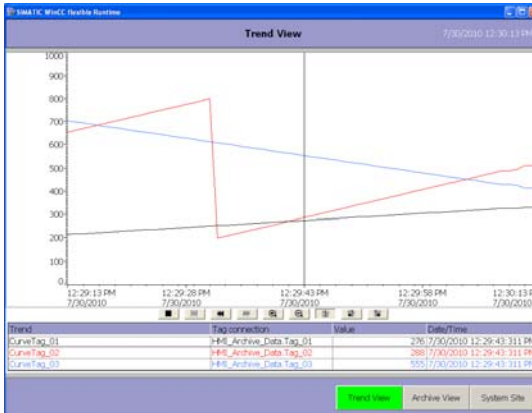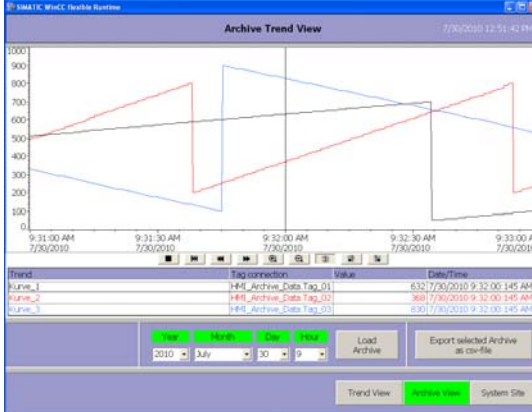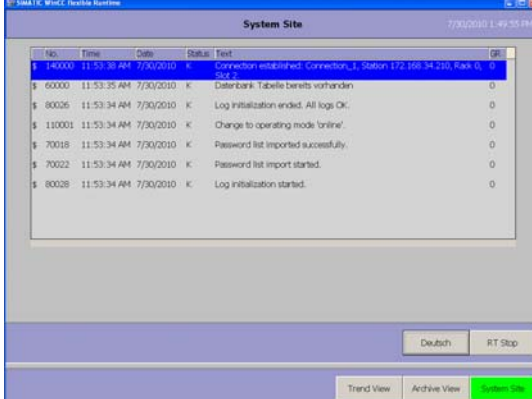| No.	Description	Picture
3.	**Update values in a table** Tags continue to be logged even in an opened table. To update the values in the table you close and then reopen the table.	
4.	**Update the database table** Click on the "**Tables**" folder and press the "F5" key on the PC keyboard. Alternatively you select the menu item "View > Refresh".	

4.2 Operate the WinCC flexible Runtime screens

Requirements

You must start the SQL server before starting WinCC flexible Runtime (see link).
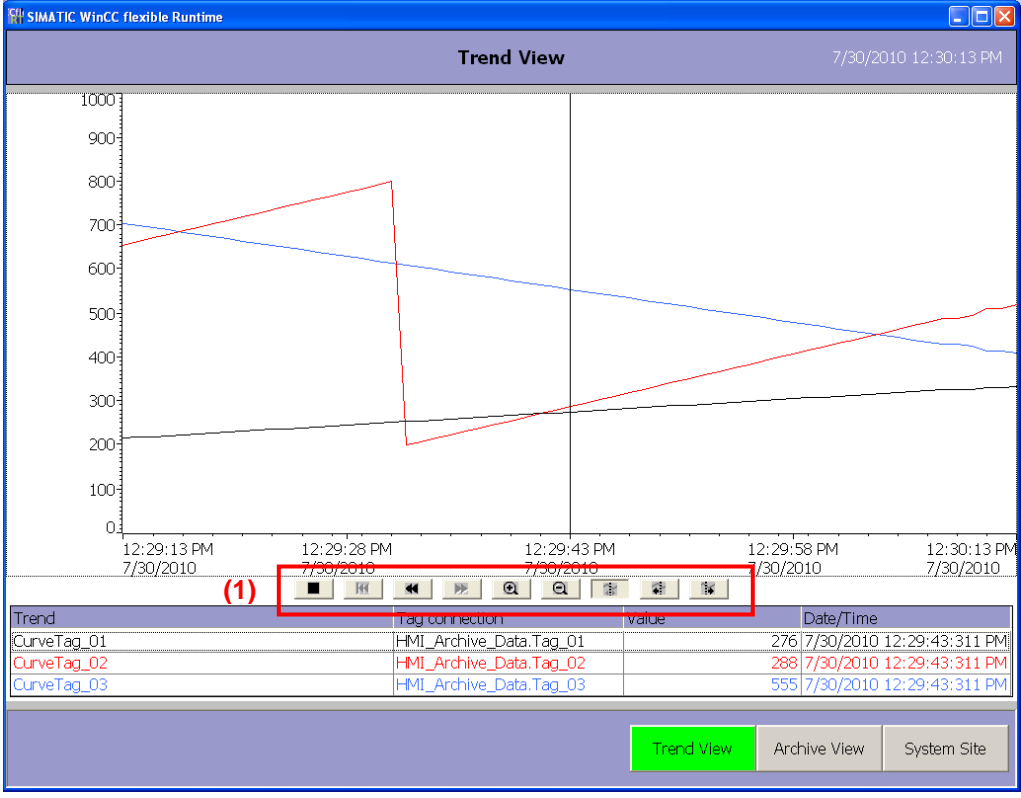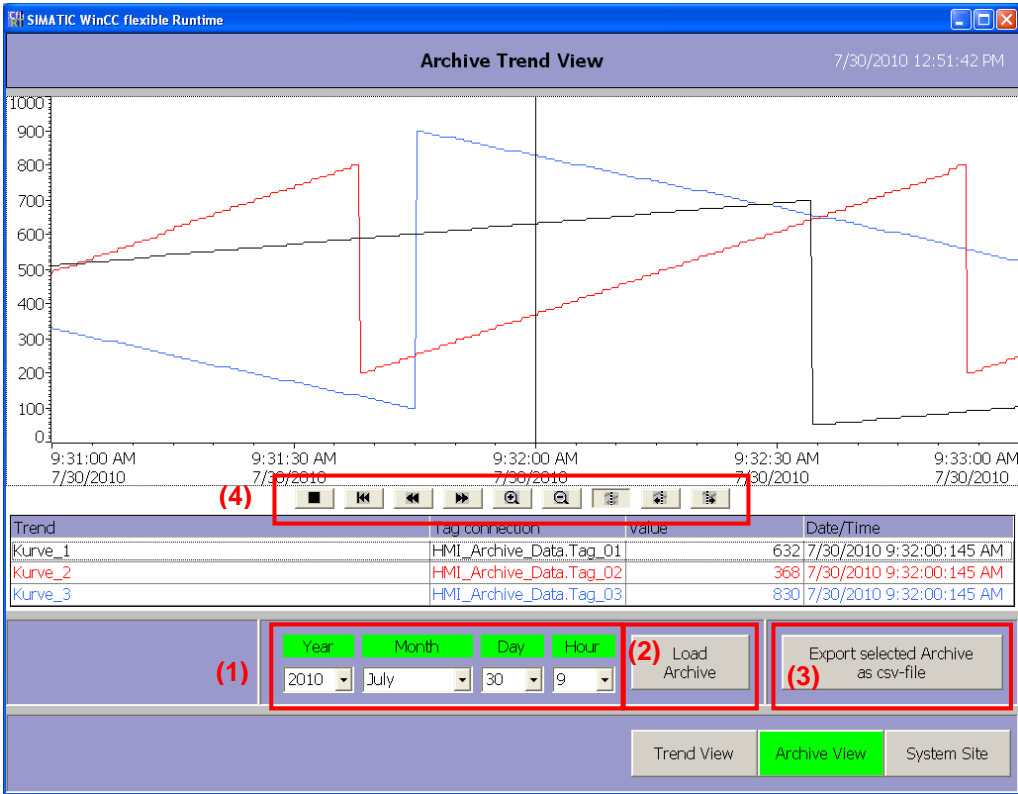
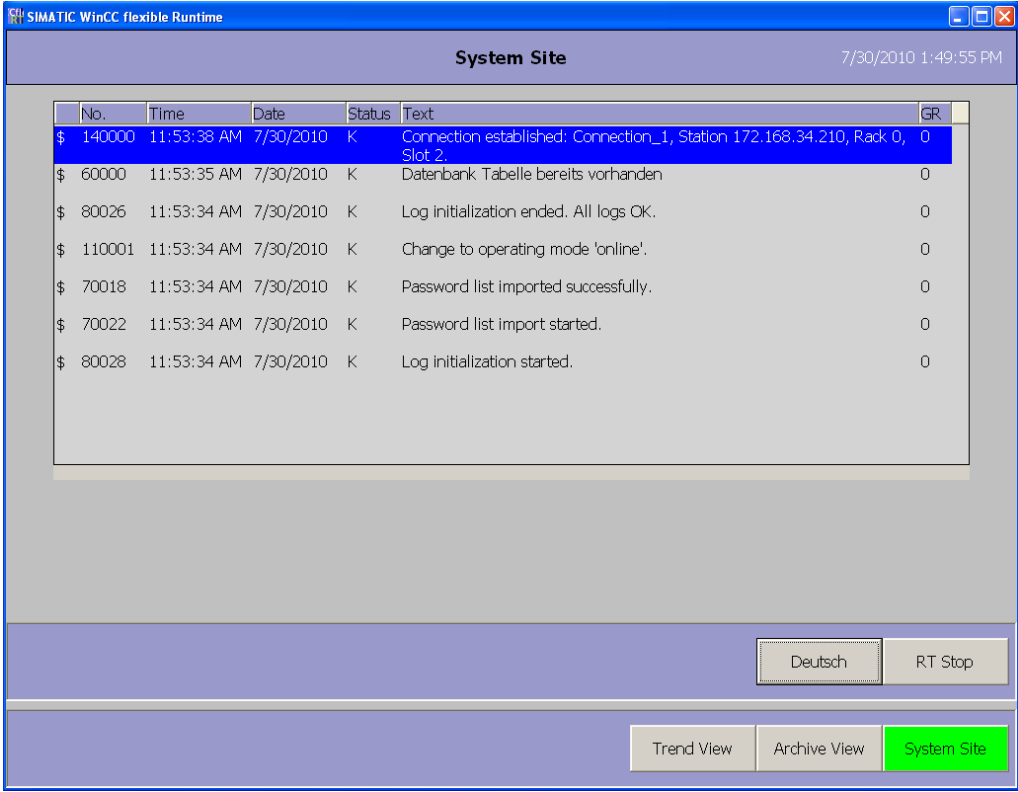The WinCC flexible Runtime consists of three screens.

Table 4-2

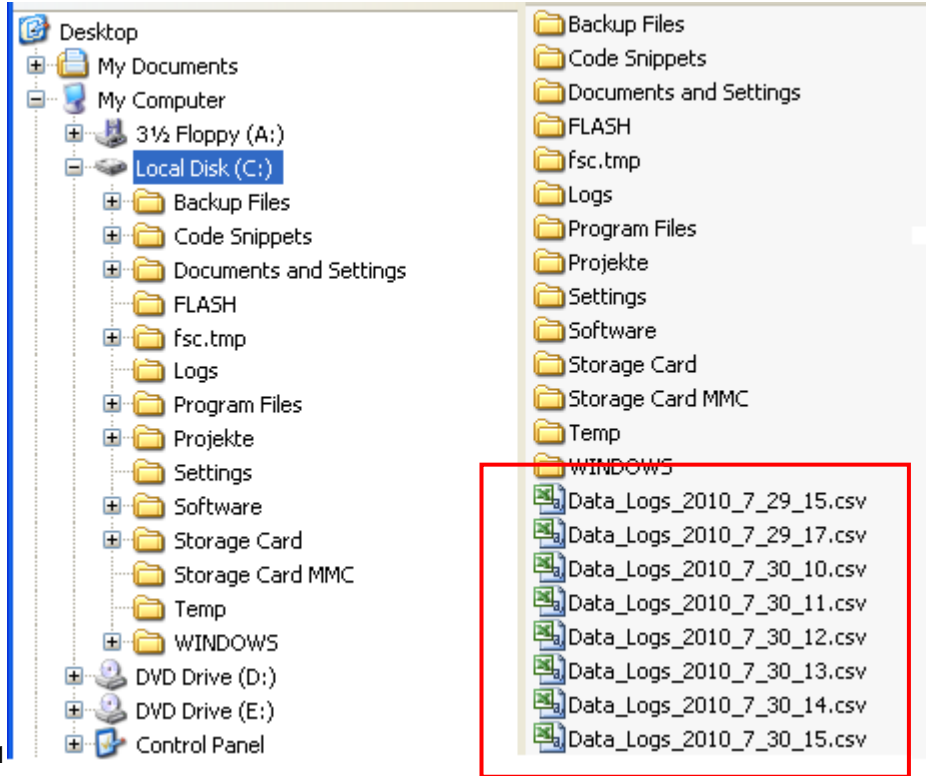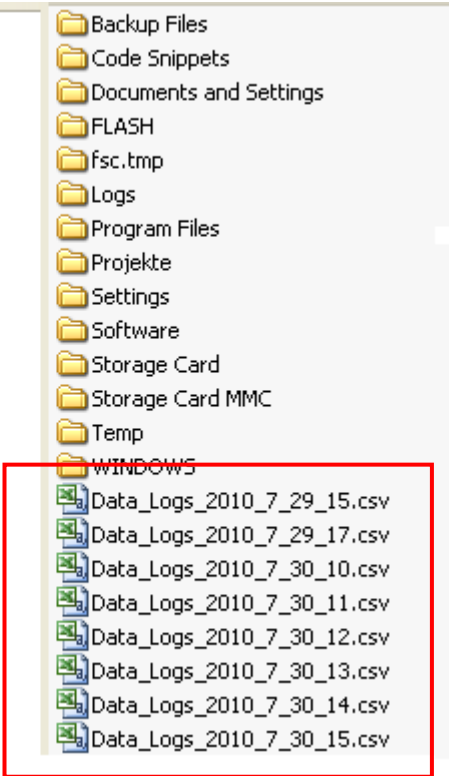| No.	Description	Picture
1.	**Screen 01:** "Trend View" The trend display is for the graphical representation of tag values from the current process. The values of the tags below are displayed. - HMI_Archive_Data.Tag_01 - HMI_Archive_Data.Tag_02 - HMI_Archive_Data.Tag_03 The values are also archived in an SQL database.	
2.	**Screen 02:** "Archive Trend View" Via this screen you can call the archived values from the SQL database. Furthermore, you can export the data from the selected archive into a CSV file.	
3.	**Screen 03:** "System Site" Via this screen you can change the language (Deutsch/English) and end Runtime. Alarm events are output via the alarm display.	

How to operate the separate screens is described in detail below.

Table 4-3

	Description	Picture
1.	**Screen 01:** "Trend View" You press the "Trend View" button to call the "Trend View" screen. The Trend View shows the current process values of three tags. Using the Trend View buttons (1) you can execute the functions shown.	

	Description	Picture
2.	**Screen 02:**"Archive Trend View"	

You press the "Archive View" button to call the "Archive Trend View" screen.

Via this screen you can graphically output the archived values from the SQL database.
- Specify a date via the drop-down list boxes (1).
- Then press the "Load Archive" button (2).
  The archived values are output via the trend display.
  - **Notes:**
    - If there is no archive available in the SQL database for the date selected, you get a system message.
    - If no values are displayed in the trend view, navigate to the left and right with the buttons of the trend view (4). The archived values might not be in the time range currently displayed.

You can export the archived data from the SQL database into a CSV file.
- Specify a date via the drop-down list boxes (1).
- Then press the "Export selected archive as CSV file" button.
  The archived values are stored on drive "C:\" as a CSV file.
  - **Notes:**
    - If there are no values available in the SQL database for the date selected, you get a system message.

Sample view see link.

	Description	Picture
3.	**Screen 03:** "System Site" You press the "System Site" button to call the "System Site" screen. On this screen you can make the settings below. • Via the "Deutsch" (English) button you can select the language of the Runtime user interface. • You press the "RT Stop" button to end Runtime. Alarm events are output via the alarm display.	
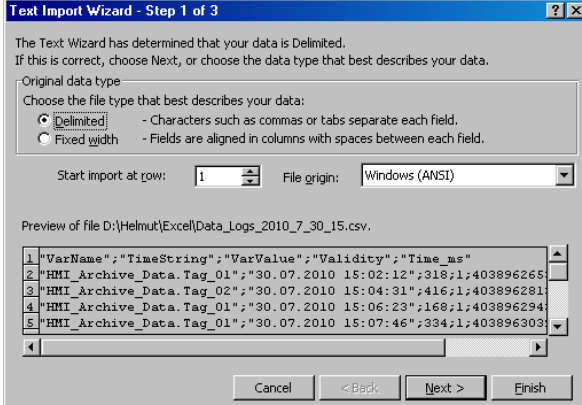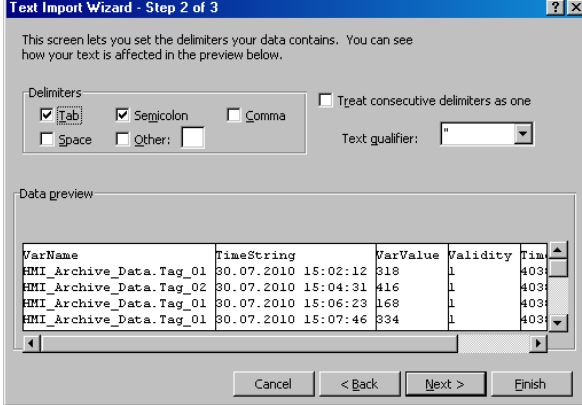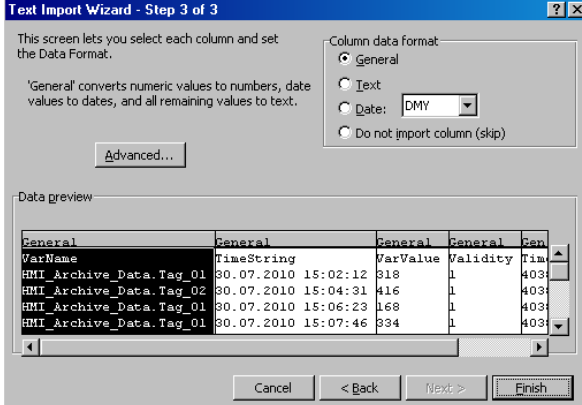
	Description	Picture
4.	**Sample view of exported archive files** 4-1 The names of the archive files are composed of the elements below: - "Archive name_year_month_day_time"	
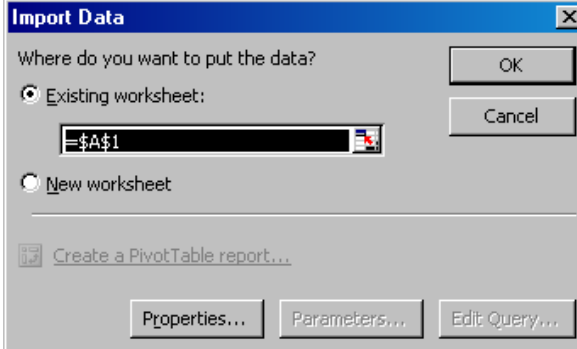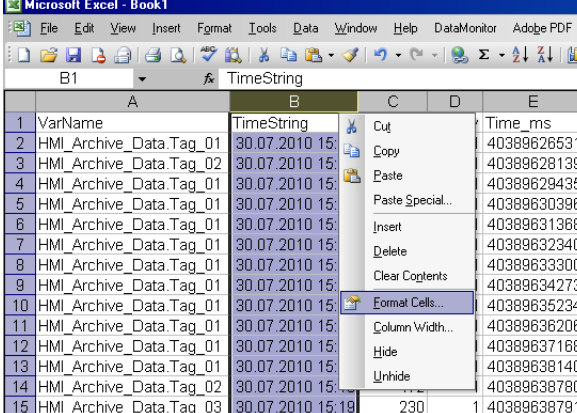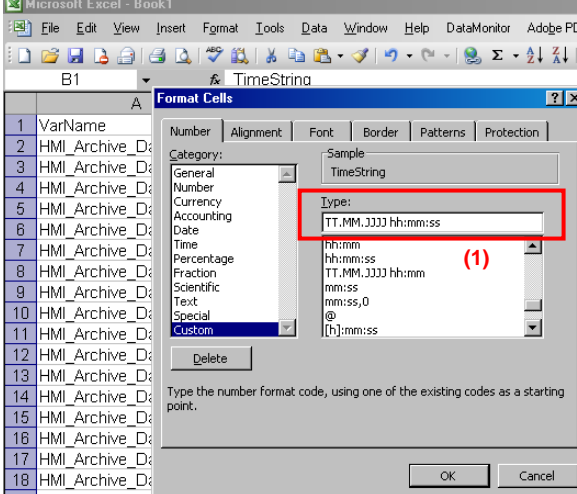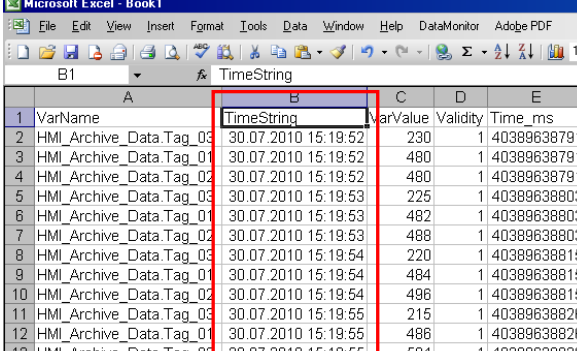
4.2.1 Open exported CSV file with Excel

You should follow the instructions below to open the exported CSV.

Table 4-4

No.	Description	Picture
1.	**Open the CSV file with Excel** If you open the exported CSV file directly with a double-click, then the values might not be displayed correctly in the columns. In the adjacent figure, for example, in the "**TimeString**" column does not show the "seconds" (only date + hour + minute) even though seconds are given in the "original" CSV file. (To check you can open the CSV file with a text editor).	
2.	**Open CSV file with Excel** There are different ways of open a CSV file with Excel. Below we take an example to show how to open a CSV file with Excel 2003.	
3.	**Create empty workbook** Create a new workbook in Excel.	
4.	**Import data** Select the menu command "**Data > Import External data > Import Data…**". A window opens in which you can navigate to the desired CSV file. Select the desired CSV file and click on the "**Open**" button. The "Text Import Wizard" opens.	

No.	Description	Picture
5.	**Text Import Wizard** Step 1 of 3. Select the options shown. **In this example:** Original data type: **Delimited** Start import at row **1** File origin **Windows (ANSI)** Then click on the "**Next >**" button.	
6.	**Text Import Wizard** Step 2 of 3. Select the options shown. **In this example:** Delimiters **Tab** **Semicolon** Text qualifier --"-- Then click on the "**Next >**" button. **Note:** Delimiters are "country-specific" and can also be a "comma", for example. If you open the CSV file with a text editor, you can see which "Delimiters" are used.	
7.	**Text Import Wizard** Step 3 of 3. Now you can adapt the data format by selecting the individual columns. For this application it suffices to select the "**General**" option for all columns. Then click on the "**Finish >**" button.	

No.	Description	Picture
8.	**Import data** Now you specify whether the data to be imported is to be added to an existing worksheet or a new worksheet. **In this example:** "Existing worksheet" Then click the "**OK**" button.	
9.	**Format "TimeString" column** Once the data has been imported, you must change the format of the "**TimeString**" column. • Mark the "**B**" column. • Right-click on the marked column. A pop-up menu opens. • Select the pop-menu command "**Format Cells…**". The "**Format Cells**" dialog box opens.	
10.	**Format cells** In the dialog box you select the "**Number > Custom**" menu. Enter the format below in the input field (1). "**DD.MM.YYYY hh:mm:ss**" (pay attention to character cases!) Alternatively you can use the scroll bar to select the required format. (The complete format you require might not be available, in which case you must complete it as necessary manually). Then click the "**OK**" button.	
11.	**Finished Excel file** In the figure on the right you see the "finished" Excel file. The "**seconds**" are now displayed as well in the "**B**" column.	

4.2.2 Troubleshooting

If no data is logged in the SQL database, run through the points listed below.

Check IP address

If the SQL server and WinCC flexible Runtime are installed on different computers (Remote Access), then check the IP addresses used on the PCs. The IP addresses must be in the same IP band and subnetwork. If necessary, get in touch with your system administrator.

SQL server address

Check the SQL server address used (link).

Data source name

Check the data source name used. The name is used for parameterizing the logs and in the scripts (link).

Start the SQL server

Make sure that the SQL server has been started (link).

WinCC flexible Runtime

Make sure that the SQL server is started before starting the WinCC flexible Runtime and that the connection to the SQL server is not interrupted during operation.

Sample error messages

Figure 4-2

	No.	Time	Date	Status	Text	GR
$	80052	5:15:13 PM	7/30/2010	K	Error in case of read access to log file Data_Logs_Trend_View.	0
$	80052	5:15:02 PM	7/30/2010	K	Error in case of read access to log file Data_Logs_Trend_View.	0
$	20010	5:14:54 PM	7/30/2010	K	Error [Microsoft][ODBC SQL Server Driver][DBMSLPCN]SQL Server doe...	0
$	80029	5:14:45 PM	7/30/2010	K	Log initialization ended. 2 log reports error.	0
$	80015	5:14:45 PM	7/30/2010	K	Data_Logs0 - is corrupted	0
$	80006	5:14:45 PM	7/30/2010	K	ODBC(ADO) error: Cannot log to Data_Logs_Trend_View.	0
$	80015	5:14:45 PM	7/30/2010	K	Data_Logs_Trend_View0 - is corrupted	0
$	140000	5:14:32 PM	7/30/2010	K	Connection established: Connection_1, Station 172.168.34.210, Rack 0...	0
$	110001	5:14:28 PM	7/30/2010	K	Change to operating mode 'online'.	0
$	70018	5:14:28 PM	7/30/2010	K	Password list imported successfully.	0
$	70022	5:14:27 PM	7/30/2010	K	Password list import started.	0