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Configuration

Examples of the configuration data of SMS gateway providers

Documentation references

SIMATIC NET
Industrial Remote Communication
TeleService
TS Gateway

Operating Instructions

Version V3

09/2014
C79000-G8976-C380-01
Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent
damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert
symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are
graded according to the degree of danger.

<table>
<thead>
<tr>
<th><strong>DANGER</strong></th>
<th>indicates that death or severe personal injury will result if proper precautions are not taken.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WARNING</strong></td>
<td>Indicates that death or severe personal injury may result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>indicates that minor personal injury can result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>indicates that property damage can result if proper precautions are not taken.</td>
</tr>
</tbody>
</table>

If more than one degree of danger is present, the warning notice representing the highest degree of danger will
be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to
property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific
task in accordance with the relevant documentation, in particular its warning notices and safety instructions.
Qualified personnel are those who, based on their training and experience, are capable of identifying risks and
avoiding potential hazards when working with these products/systems.

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| **WARNING**       | Siemens products may only be used for the applications described in the catalog and in the relevant technical
documentation. If products and components from other manufacturers are used, these must be recommended
or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and
maintenance are required to ensure that the products operate safely and without any problems. The permissible
ambient conditions must be complied with. The information in the relevant documentation must be observed. |

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software
described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the
information in this publication is reviewed regularly and any necessary corrections are included in subsequent
ditions.
Preface

Purpose of the manual
This manual supports you during the configuration, installation, commissioning and operation of the TS Gateway application.

Validity of this manual
This manual applies to the following software versions:
TS Gateway - Version V3.0

Abbreviations/acronyms
- Mobile wireless CP
  CPs to connect the S7-1200 to a mobile wireless network, for example CP 1242-7
- TCSB
  TeleControl Server Basic as of Version V3
- CMT
  Configuration and Monitoring Tool: Program user interface of TS Gateway

New in this release
First issue
TS Gateway (version V3) is the successor to TS Gateway (version V2).
TS Gateway V3 supports 2 connection resources to a TeleService server at the same time per station. In an existing TeleService session, a second connection resource of the engineering station is used to load the project data.
You will find detailed information about the functions in the section Application and properties (Page 9).

Replaced documentation
None

Required experience
To be able to configure and operate the system described in this document, you require experience of the following products, systems and technologies:
- SIMATIC S7
- SIMATIC NET / TeleControl
• STEP 7 Basic / Professional
• IP-based communication

You will find further reading in the References in this manual.

Further information on the Internet

You will find further information on the Siemens telecontrol products such as the latest information, manuals, FAQs or software updates on the Internet on the pages of Siemens Industry Online Support under the following entry ID:

There select the required information under "Entry type" (for example "Updates", "Manuals", "FAQs" etc.)

TeleService example of an application on the Internet

An example of an application for TeleService access from an engineering station via the Internet to an S7 station with a mobile wireless CP can be found on the Internet on the pages of Siemens Automation Customer Support under the following entry ID:

License conditions

Note
Open source software
Read the license conditions for open source software carefully before using the product.

You will find license conditions in the following documents on the supplied data medium:
• DOC_OSS-S7CMCP_74.pdf
• DOC_OSS-TSGW-V3_76.pdf

SIMATIC NET glossary

Explanations of many of the specialist terms used in this documentation can be found in the SIMATIC NET glossary.

You will find the SIMATIC NET glossary here:
• SIMATIC NET Manual Collection or product DVD
  The DVD ships with certain SIMATIC NET products.
• On the Internet under the following entry ID:
  50305045 (http://support.automation.siemens.com/WW/view/en/50305045)
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Training, Service & Support

You will find information on Training, Service & Support in the multi-language document "DC_support_99.pdf" on the data medium supplied with the documentation.
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TS Gateway
Operating Instructions, 09/2014, C79000-G8976-C380-01
Application and properties

1.1 Properties

Use of TS Gateway

TS Gateway is an application used for TeleService connections via the mobile wireless network with remote SIMATIC stations of the type S7-1200 with a mobile wireless CP.

What is a TeleService gateway?

A TeleService gateway is a PC on which the "TS Gateway" software is installed.

The TeleService gateway is not configured in STEP 7.

What functions does the TeleService gateway provide?

The TeleService gateway has the following functions:

- Switching station

  The TeleService gateway is a PC in the network that serves as the intermediary between the engineering station and remote S7 station.

  Since a firewall is normally closed for connection requests from the outside, a switching station between the remote station and the engineering station is required. This switching station can be a telecontrol server or, if there is no telecontrol server in the configuration, a TeleService gateway. The switching station directs the messages via a tunnel through the firewall. This allows access by the engineering station connected to a LAN to the S7-1200 via a router and via the APN of the network provider.

- Configuration of the SMS gateway provider

  With the help of TS Gateway, SMS gateway providers are configured that are necessary for the sending of an SMS message to the remote S7 stations.
Configuration with TeleService gateway

A TeleService gateway is intended for the following telecontrol systems in which TeleService is used via a mobile wireless network:

- Configurations without a telecontrol server
  
  In configurations without a telecontrol server, a TeleService gateway is required for TeleService via the mobile wireless network.

- Configurations with telecontrol server
  
  In configurations in which a second path needs to be established for TeleService via the mobile wireless network alongside the telecontrol server, a TeleService gateway can be used.

  This can, for example, be the case when certain people, groups or companies should not operate TeleService via the telecontrol server or when access to the stations for TeleService needs to be set up independent of the telecontrol server.

Range of performance of a TS Gateway

- Number of simultaneous TeleService connections in total: 1

Note

TS Gateway only for TeleService

TS Gateway is used only for the “TeleService” function via the mobile wireless network. No connections to the remote stations can be monitored and no process data can be transferred.

First and second TeleService gateway

If the requirements for availability are higher, you can install TS Gateway on two independent computers. If the connection cannot be established via the first gateway, you can establish the TeleService connection via the second TeleService gateway. The two systems are independent of each other and in terms of the range of functions identical.
Requirements for TeleService with the TeleService gateway

The following requirements must be met for TeleService via a TeleService gateway:

- Engineering station connected to a LAN or with Internet access
  
  TeleService using the mobile wireless network is possible on an engineering station with the STEP 7 project that contains the remote station with the mobile wireless CP.
  
  STEP 7 version required for TeleService via the mobile wireless network: V13.x

- PC for the TeleService gateway with:
  - DVD drive
  - Connection to LAN or Internet access for connecting to the engineering station
  - Internet access for connecting to the remote S7 station
  - Installation of the "TS Gateway" application
    
    The software ships with the mobile wireless CP (see product DVD).

TeleService for S7-1200 with mobile wireless CP

The TeleService functions for the mobile wireless CP are described in the manual of the CP, refer to /2/ (Page 44), and in the online help of STEP 7.

TCSB or a TeleService gateway automatically makes 1 access point available for TeleService per project. This means that up to 1 TeleService user can access the stations of a project.

An engineering station is required for each TeleService connection.

Per station, 1 TeleService session is possible. In an existing TeleService session, a second connection resource of the engineering station is used to load the project data.

Monitoring times when establishing TeleService connections

When a TeleService connection is established, the following monitoring times are used:

- Establish TeleService connection but no online connection: An interrupted connection is detected after 1 minute.

- Disconnection of a TeleService connection:
  - Follow-up time of approx. 5 minutes
    
    Within the follow-up time, the connection between the telecontrol server / TeleService gateway and CP is maintained.
    
    If a new TeleService connection is established during the follow-up time, no new wake-up SMS is sent to the station.

    If a TeleService connection aborts, a new TeleService connection is not established automatically.
1.2 Subcomponents of TS Gateway

Main components of the application

TS Gateway is made up of the following main components:

- **Telecontrol Manager (TCM)**
  
The Telecontrol Manager manages the connections with communications partners. This is the communications center of all connected software components in the PC side and the process side. It controls the frames between the sender and destination address and has the logical connection information and configuration information.

  The Telecontrol Manager is not visible to the user. The configuration of the access data is created using the CMT (see below).

- **Database**
  
The database stores the configuration data and system messages. The database is not visible to the user. The user interface to the database is CMT (see below).

  The database has separate areas for the offline configuration data and for the online configuration data of the runtime system. With the Enable function in CMT, the configuration data is shifted from the offline to the online area of the runtime system.

- **Configuration and Monitoring Tool (CMT)**
  
The CMT is the program user interface for setting up and configuring the system.

1.3 Configuration examples

With an S7-1200 with a mobile wireless CP, a TeleService connection runs via the Internet and the mobile wireless network.

The following figures show the typical configurations for the use of the TeleService gateway.
1.3 Configuration examples

Installation of TS Gateway on the computer of the engineering station

Figure 1-1 Installation of TS Gateway on the computer of the engineering station

In this case, the "TS Gateway" application is installed on the engineering Station.

Installation of TS Gateway on a separate computer

Figure 1-2 Installation of TS Gateway on a separate computer
In this case, the "TS Gateway" application is not installed on the engineering Station but on a separate computer. The engineering station and TeleService gateway are connected via an Intranet.

**TeleService via a local or a remote engineering station**

As an alternative, TeleService can be operated from two engineering stations:

- A central engineering station connected to the TeleService gateway via an intranet.
  
  The connection between the engineering station and S7 station is via the TeleService gateway, the Internet and the mobile wireless network.

- A remote engineering station connected to the TeleService gateway via the Internet.
  
  The connection between the engineering station and S7 station is via the Internet to the TeleService gateway and from there further via the Internet and the mobile wireless network.

Simultaneous access by both engineering stations to the same mobile wireless CP is not possible.
Installation, commissioning and operation

2.1 Compatible operating systems for the application

Compatible operating systems

the application can run on a PC with one of the following operating systems:

- **Single installation**
  - Microsoft Windows 7 Professional 32/64-bit + Service Pack 1
  - Microsoft Windows 7 Enterprise 32/64-bit + Service Pack 1
  - Microsoft Windows Embedded 7 32-bit
  - Microsoft Windows Server 2008 32-bit + Service Pack 2
    
    For this operating system, you require Windows PowerShell.
  - Microsoft Windows Server 2008 R2 64-bit + Service Pack 1

2.2 Installation of the software

Firewall settings (ports)

Just as with any computer connected to the Internet or to another IP network, the TeleService gateway should be protected at least by the firewall of the operating system and/or the connected router against attacks from the connected network.

Remember that during installation of the system, several ports need to be opened and other changes need to be made in your system. These settings are displayed during installation. You can print these settings during the installation or save them in a log file.

---

**Note**

**Response to a deactivated firewall**

If the firewall is deactivated during installation, the necessary incoming and outgoing rules will not be created. In this case, no warning is output.
Commissioning the TeleService gateway

1. Set up the PC according to the documentation that ships with the PC.
2. Connect up the following connectors on the PC:
   - Monitor, keyboard, mouse
   - Power supply
   - Local area network if the engineering station is connected via a LAN.
   - Internet
     Note the information from the network provider and the manufacturer of the router
3. Turn on the PC.
4. Set up the following access:
   - Local LAN connection
   - Internet access
5. Insert the product DVD that ships with the CP in the DVD drive.
6. In the file management of the PC, open the DVD root directory > folder "TS Gateway".
7. Start the installation by double clicking on the "setup.exe" file.
   The installation of the software begins automatically. A wizard guides you through the remaining steps in installation.

   ![Gateway]

   [Gateway]
   [TeleService Gateway V3.x]
   [Tools]
   [SQL Server 2008 Express]

   Figure 2-1 Section of the window of the installation wizard of TS Gateway

8. Enable the two options "TeleService Gateway V3.x" and "SQL Server 2008 Express" and click "Next".
   During the installation, the "Database settings and certificates" dialog opens in which you make the settings for the database, refer to the following section.

"Database settings and certificates" dialog

In this dialog, you configure the following:

- Database password
- Use of an existing database of TS Gateway V2 / TCSB V2 if available
  If an older version V2 is installed on your computer, you have the option of using your previous data.
2.2 Installation of the software

Figure 2-2 "Database settings and certificates" dialog

Database password

In the "Assign a password for your database:" box, Assign the database password for later access to the database of TS Gateway to be installed.

Note

Note down the database password

You only require this password if you want to access the database using Microsoft tools. You do not require the password for any activities in the system.

Import a TCSB V2 database

If there is already a version V2 of the gateway on your computer, you have the option of continuing to use the data of your existing system. To do this, continue to use the database of the TeleService gateway V2. You control this during the installation in the "Import a TCSB database V2" box.
In the "Import a TCSB V2 database" box, specify the use of the database using the following options:

- **Do not import database**

  When the option is selected, you install the new database of the TS Gateway V3 / TCSB V3 system. By doing this you specify that a new empty system will be created. Existing data of an older system can no longer be used.

- **Select the storage location of the file "Smsc.sqlite".**

  If the option is selected, you continue to use your previous SQLITE database of the V2 system.

  The preset path of the database in the file directory is displayed in the input box. If you have moved your database to another location, you will need to enter the correct path in the input box.

When all the options in the dialog are correctly set, confirm the dialog with OK. The installation is continued and completed.

### 2.3 Changing port and network settings

#### Network settings

To ensure that the system operates correctly, the following settings must be made:

1. Open the following dialog in the Control Panel of the TS Gateway computer:

   "Network and Internet" > "Network and Sharing Center" > "Advanced sharing settings"

2. Turn on "Network discovery" for both networks "Home or Work" and "Public".

#### Opening changed ports

If you change port numbers, you will need to open the ports used in the router or using the functions of the operating system.

Below you will find the ports of TS Gateway along with their significance and the default numbers:

- **Listener port for stations of the type S7-1200 + mobile wireless CP**

  The port must be opened for communication with the engineering station and with remote stations of the type S7-1200 with a mobile wireless CP.

  Default port number: 55097

- **Port of the database server**

  Port of the database server for TCP connections with CMT client PCs

  Default port number: 26865

You can change the default port numbers in the CMT, refer to section TCSB system (Page 33) > "Listener ports".
2.4 Installation of two TeleService gateways

Installation of two TeleService gateways

If you install TS Gateway on two computers, two parallel systems of TS Gateway are installed that are independent of each other. In terms of the range of functions, both systems are identical and do not monitor each other.

Configuration

Make sure that the configuration of both systems is consistent, especially the configuration of the projects.

2.5 Wake-up SMS for the CP 1242-7 (firmware V1.x)

Wake-up SMS

Waking the station by a TeleService gateway is achieved by sending an e-mail. The e-mail is sent to an SMS gateway via an SMTP server. The SMS gateway converts the e-mail into an SMS message and transfers this to the station.

The SMS gateway is configured in the CMT of the TeleService gateway, refer to the section Configuring SMS gateway providers (Page 37).

If the wake-up SMS message is sent from a phone, the number of the phone must be authorized in the STEP 7 configuration of the receiving CP (refer to "Authorized phone numbers"). The telephone must support the CLIP function (transfer of its own call number) and the sending of SMS messages.

The wake-up SMS message is not send extra when a TeleService connection is established, it is generated automatically by the TeleService gateway.

Depending on the switching TeleService gateway, the following text must be transferred in the wake-up SMS:

- Text for the wake-up SMS message for establishing a connection via the first TeleService gateway (TeleService server):

  \texttt{TELESERVICE}

  or

  \texttt{TELESERVICE 1}

- Text for the wake-up SMS message for establishing a connection via the second TeleService gateway (TeleService server) - if it exists:

  \texttt{TELESERVICE 2}

You configure the TeleService server in STEP 7 in the "TeleService settings" parameter group of the mobile wireless CP.
2.6 Overview of the passwords

Overview of the passwords used during operation

Below, you will find an overview of the passwords used on the TeleService gateway.

<table>
<thead>
<tr>
<th>No.</th>
<th>Password</th>
<th>Password configuration in ...</th>
<th>Password entry in ...</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Administrator password</td>
<td>CMT of the TeleService gateway</td>
<td>CMT (at startup)</td>
<td>Protection of the TeleService gateway from unauthorized access</td>
</tr>
<tr>
<td>②</td>
<td>TeleService password</td>
<td>CP (per station in STEP 7)</td>
<td>STEP 7 (TeleService startup)</td>
<td>Protection from access to the CP in TeleService</td>
</tr>
<tr>
<td>③</td>
<td>Server password</td>
<td>Per project in CMT (TCSB only)</td>
<td>STEP 7 (TeleService startup)</td>
<td>Protection from access to the TeleService gateway in TeleService</td>
</tr>
</tbody>
</table>

Other passwords required by the mobile wireless, SMTP server or SMS gateway providers or when installing the database are not listed here.
3.1 The Configuration and Monitoring Tool (CMT)

The Configuration and Monitoring Tool (CMT)

The Configuration and Monitoring Tool (CMT) is the program user interface of TS Gateway and is used to configure the following parameters and settings:

- System of the TeleService gateway
  - Address data of the gateway and port numbers
  - Authorized phone number for connections to the CPs
- Projects (optional)
  If you have configured different projects with different server passwords for the telecontrol server, you must create projects with the same name in the CMT of the gateway.
- SMS gateway provider
- SMTP server

Functions not supported

The CMT of TS Gateway is a special form of the CMT of the "TeleControl Server Basic" (TCSB) software. This contains several functions that are not supported by the CMT of the TS Gateway application.
3.2 Windows and buttons of the CMT

3.2.1 Window layout and Editing

Layout of the user interface

The program user interface of the CMT is divided into the following areas:

Figure 3-1 Window layout of the CMT

The subareas have the following functions:

<table>
<thead>
<tr>
<th>No.</th>
<th>Area / subarea</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Title bar</td>
<td>Display of the name of the program</td>
</tr>
<tr>
<td>2</td>
<td>Menu bar</td>
<td>Contains the menus</td>
</tr>
<tr>
<td>3</td>
<td>System navigation</td>
<td>Shows the structure of the parameter groups: Projects, users (administrator), system, SMS gateway provider, SMTP server The individual objects of the selected parameter group are displayed in the object area.</td>
</tr>
</tbody>
</table>
### Parameter area - Editing objects

The parameter area shows the parameters of the object selected in the object area. The individual parameters are described in the sections that follow.

The following applies generally:

- The displayed parameters depend on the object selected in the object area.
- As default, all the parameter boxes are grayed out and cannot be edited.
  
  To be able to edit permitted boxes, prior to editing, the "Edit" button (see below) must be enabled.
- The configuration must be consistent (for example the SMS number of a station must not be assigned more than once).
- If an input box is intended only for certain types of character, other types of character will be rejected.
  
  Example: Letters cannot be entered in input boxes for phone numbers.
- While they are being entered and prior to being transferred to the runtime system, parameters are checked for plausibility.
- Invalid parameters
  
  Incomplete input boxes and input boxes containing forbidden characters are declared invalid during the plausibility check and shown on a red background (see figure).

![GSM: ct-xyz.com](image)

Figure 3-2 Marking of input boxes with forbidden content

- Objects with bad parameters are given the configuration status "invalid".

![object](image)

Figure 3-3 Marking of objects with invalid parameters

Invalid parameters are not stored in the database.

---

<table>
<thead>
<tr>
<th>No.</th>
<th>Area / subarea</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>④</td>
<td>Object area</td>
<td>Depending on the entry selected in the system navigation, the following content is displayed:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Projects and their parameters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Administrator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• System parameters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SMS gateway provider, SMTP server</td>
</tr>
<tr>
<td>⑤</td>
<td>Command bar</td>
<td>Contains buttons for functions in the context of the particular object area</td>
</tr>
<tr>
<td>⑥</td>
<td>Parameter area</td>
<td>Shows the parameters of the object selected in the object area.</td>
</tr>
<tr>
<td>⑦</td>
<td>Message window</td>
<td>Displays the accumulated system messages. The window is opened using the &quot;View&quot; &gt; &quot;Messages&quot; menu and is closed again using the 'X' icon at the top right.</td>
</tr>
<tr>
<td>⑧</td>
<td>Status bar</td>
<td>Shows the connection status of CMT and the logged in users.</td>
</tr>
</tbody>
</table>
Configuration

3.2 Windows and buttons of the CMT

Editing objects

Before boxes can be edited, an object must first be enabled using the "Edit" button. After editing has been enabled, the editing icon (✓) appears in the left-hand column in the object area. After saving, edited boxes are grayed out again and the editing icon (✓) disappears.

3.2.2 The buttons of the CMT

The most important buttons in the CMT

After starting the CMT, all the input boxes in the program user interface are locked. Configuration is only possible and other buttons can only be selected after clicking the "Edit" button. The buttons described below can be found in most views of the CMT.

- **Edit**
  Enables the objects or parameters displayed in the object or parameter area for configuration.

- **Add**
  Generates a new object in the particular view.

- **Delete**
  Deletes the selected object

- **Discard**
  Discards all the changes made in the current view and restores the status as it was after the last save.

- **Save**
  To avoid changed data being lost when you exit a view, you need to save any changes you have made.
  In some views, you can only "Save & activate"; this means that the changed data is transferred to the runtime system when you save.

- **Save & activate**
  Relevant for connection and project data
  Before the configured data of connections takes effect in the runtime system, the relevant project must be activated. The configured data can only be transferred to the runtime system for entire projects.
  If you have not yet saved the configuration data, the configuration data is saved first in the database prior to activation.
3.2.3 Menu bar

The menu bar contains the following menus:

"File" menu

<table>
<thead>
<tr>
<th>Menu command</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit</td>
<td>Closes the CMT.</td>
</tr>
</tbody>
</table>

"View" menu

<table>
<thead>
<tr>
<th>Menu command</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages</td>
<td>Shows the messages of the system below the parameter area.</td>
</tr>
</tbody>
</table>

"Options" menu

<table>
<thead>
<tr>
<th>Menu command</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Opens a drop-down list for setting the language used by the CMT.</td>
</tr>
</tbody>
</table>

"Help" menu

<table>
<thead>
<tr>
<th>Menu command</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help</td>
<td>Opens the online help of the CMT.</td>
</tr>
<tr>
<td>About</td>
<td>Shows version information of the program.</td>
</tr>
</tbody>
</table>

3.2.4 Individual adaptation of the window

Adapting the view

The following options are available for adapting the program user interface:

- Changing the size of areas
  By moving the dividing line between the individual areas, you can change the size of the areas in the window.

- Changing the column width in the object area
  By moving the dividing lines in the table header with the mouse, you can change the width of the columns in the object area.
3.3 Starting CMT - changing passwords

- Sorting entries in the object area
  If you click on a column header, you can sort the entries in the table in ascending or descending order according to this column.

- Changing the column order
  By selecting a column header and moving it while holding down the mouse button, you can move the column to the right or left.

  *) This also applies the system variables in the parameter area.

3.2.5 Online help

Opening online help

You open the online help of CMT with the menu "Help" > "Online help".

3.3 Starting CMT - changing passwords

Starting the CMT

To start the CMT, select the following program:
Windows Start menu > Siemens Automation > SIMATIC > TCS Basic > Config and Monitoring Tool

Logging on

After the program has started, the logon window of the CMT is displayed.

![Logon window of the CMT](Image)

Figure 3-4 Logon window of the CMT
1. Enter a configured user name or leave the default user name. You will find information on the first login in the next section.

2. Enter the corresponding password. You will find information on the first login in the next section.

3. Click the "Logon" button.

   When you log on for the first time, you need to change the password immediately. Make sure you read the notes below.

   During all subsequent logons, the same window of the CMT opens.

**Initial logon: User name and password**

The following user data is set in the factory:

<table>
<thead>
<tr>
<th>User data</th>
<th>Default values set in the factory</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name</td>
<td>administrator</td>
</tr>
<tr>
<td>Password</td>
<td>0000</td>
</tr>
</tbody>
</table>

**Entering the wrong user name or password**

If you enter a user name that is not configured, an error message is displayed regardless of the password entered. One or a variety of incorrect user names can be entered any number of times without the system being locked.

---

**Note**

**Loss of the administrator password**

Note down a newly assigned or modified administrator password and keep this in a safe place.

If only one administrator is set up, the loss of the administrator password means that no more administrator tasks can be performed.

**There is no way in which the system can be reset to the factory-set administrator password.**
3.3 Starting CMT - changing passwords

Note

Incorrect entry of the password
• When entering the default user name:
  If you enter an incorrect password with the default user name (see above) an error message is displayed. You can attempt to enter the factory-set password any number of times to log on with the system.
  If you enter an incorrect password, a lock out time begins that is extended with each attempt to logon with an incorrect password.
• When entering a configured user name:
  If you enter an incorrect password along with a configured user name, an error message is displayed.
  If you enter an incorrect password, a lock out time begins that is extended with each attempt to logon with an incorrect password.

Formats and lengths for user names and passwords
• User names
  Length (characters): Minimum 1, maximum 32
  The following ASCII characters are permitted (digits, lowercase letters, uppercase letters, many special characters):
  – 0x20 ... 0x7e
  – 0x80 ... 0xff

• Passwords
  Length (characters): Minimum 8, maximum 32
  The following ASCII characters are permitted (digits, lowercase letters, uppercase letters, many special characters):
  – 0x20 ... 0x7e
  – 0x80 ... 0xff
3.4 Creating and configuring projects

View when the "Projects" entry is selected in the navigation area

With this selection, the CMT displays the following screen:

![Image of the CMT configuration and monitoring tool with the Projects tab selected]

**Figure 3-5** Object area when the "Projects" entry is selected in the navigation area

The "Projects" tab displays the configuration data of the individual projects in the form of a table.

**Purpose of creating projects**

To use the functions of the TeleService gateway, it is not absolutely essential to create projects. If you do not create a project, the provider listed first in the drop-down list will be used as the SMS gateway provider.

In larger systems, in which all stations are not accessed via the same SMS gateway provider, you can create various projects that are then assigned to a specific SMS gateway provider. The stations to be accessed via a specific SMS gateway provider are grouped together in a project. This means that you do not need to change the provider data each time.
A unique project number must be assigned to each CMT project that matches the project number of the CPs in the STEP 7 project.

---

**Note**

**Consistency with the STEP 7 project**

Make sure that the project number in the CMT is consistent with the project number of the mobile wireless CP in the STEP 7 project.

---

The SMS gateway provider is assigned to the project in the parameter area (see below).

---

**Parameters of projects**

The mandatory parameters "Project name" and "Project number" of the project must be completed by the administrator.

- **Project name**
  
  Assign a project name.
  
  The mandatory parameter is checked for consistency when it is entered.
  
  If the entry is inconsistent, the input box is shown with a red frame.

- **Project number**
  
  Assign the project number.
  
  The mandatory parameter is checked for consistency when it is entered.
  
  If the entry is inconsistent, the input box is shown with a red frame.
  
  As long as no project number has been entered, the input box has a red frame and the configuration cannot be saved.
  
---

**Note**

**Consistency with the STEP 7 project**

The project number assigned here must be identical to the project number of the mobile wireless CP in STEP 7 because it forms part of the address of the connections.

Check and agree the project number with the configuration engineer of the STEP 7 project.
3.4 Creating and configuring projects

- **SMS gateway provider**
  
  From the drop-down list, select the SMS gateway provider via which you want to send a wake-up SMS message to the remote stations.

- **Comment**
  
  Optional: If necessary, enter a comment (max. 200 characters).

---

### Note

#### Saving configuration data

Following configuration, save the project otherwise the configuration data is lost.

When you save, the configuration data is saved in the database but is not transferred to the runtime system.

---

### Creating projects

Create new projects as follows:

1. Select the "Projects" entry in the navigation panel.
2. Click the "Add" button.
   
   The new project appears in the navigation area and in the object area.
3. Click the "Create" button.

### Activating projects

Once you have completed the configuration in the CMT, you need to transfer the modified data to the runtime system using the "Save & activate" button so that the configuration data becomes effective for the connection establishment. Configuration data can only be transferred for entire projects not for individual stations.

### Deleting projects

- **Deleting inactive projects**
  
  If the project to be deleted contains no or only new data records (the project has not yet been activated), it is deleted immediately.

- **Deleting projects that have already been activated**
  
  If the project to be deleted already contains activated data records, deleting initially changes it to the "To delete" status. To delete the configuration data from the runtime system, it must then be activated. Only then is the entire delete procedure completed.

To delete a project, follow the steps outlined below:

1. Select the "Projects" entry.
2. Select the project in the object area.
3. Click the "Delete" button.
   - The project disappears if it contains no or only new data records.
     In this case, deleting is completed.
   - The project changes to the "To delete" status if it was previously activated
     (configuration data in the runtime system).

4. Activate the project that has the "To delete" status.
   The project is finally deleted.

3.5 Setting up an administrator

Configuration of the administrator

With the "Users" entry in the navigation area, you can edit the user properties of the
administrator:

- "General" parameter group
  The following data must be entered when they are created.
  - User name
    User name of the administrator, is used to log in to CMT.
  - Password
    Password of the administrator, is used to log in to CMT.

  Note
  **Loss of the administrator password**
  Note down a newly assigned or modified administrator password and keep this in a
  safe place.

  Once the administrator has been set up, the loss of the administrator password means
  that the system can no longer be configured or operated.

  There is no way in which the system can be reset to the factory-set administrator
  password.

  - First and last name of the administrator are optional.

- "Contact information" parameter group
  All contact information is optional and can be entered and modified by the administrator.
  - E-mail address
  - Call number
  - Mobile phone number
  - Address
3.6 TCSB system

Selection of the navigation entry "TCSB system"

Under this entry, you will find the parameters to make settings for the following system components:

- TCM
- Database

Only administrators can make the settings for the system.

If you expand the "TCSB system" entry, the following further entries will be visible and these are described in the following sections:

- SMTP gateway provider
- SMTP server

TCSB system, "TCM" tab

"General" box

Here, you configure the address data of the TeleService gateway and, if it exists, the second gateway.

![Image of TCSB system dialog]

Figure 3-6 The "TCSB system" > "TCM" dialog
Here, the IP address and the ports of the TeleService gateway are configured.

Note

Consistency with the STEP 7 project or block configuration

The address data to be configured here is also configured in the STEP 7 project of the mobile wireless CP.

The configuration of an IPv4 address is mandatory. IPv4 addresses are given preference by the gateway. The configuration of an IPv6 address is necessary if stations that use the IPv6 standard are connected to the gateway.

As default the computer name of the relevant PC is entered in the input box of the IPv6 address of TCM 1.

The relevant port numbers are preassigned. If necessary you can change these.

The following applies to all ports: The port number must be between 1 025 and 65 535.

- Address TCM 1 or TCM 2
  IP address of the TeleService gateway
  Select one of the following entries:
  - The valid IP address of the computer
  - "localhost" entry
  - Entry "127.0.0.1" for the first gateway
  - Entry "127.0.0.2" for the second gateway

In addition to the addresses in IPv4 format, you can also specify the addresses in IPv6 format.

"Listener ports" box

If necessary, you can change the default numbers of listener ports of the system here.

Note

Port numbers used

If you change port numbers, note the information in the section Changing port settings (Page 37).

- MSC listener port
  Not relevant for TeleService gateway
  Default port number: 26862

- ITP listener port
  Listener port for stations of the type S7-1200
  The port must be opened for communication with the engineering station and with remote stations of the type S7-1200 with a mobile wireless CP.
  Default port number: 55097
• **Control port**
  Not relevant for TeleService gateway
  Default port number: 26861

• **Data port**
  Not relevant for TeleService gateway
  Default port number: 26860

• **TCSB port**
  The port must be opened for the TCM to communicate with the CMT.
  Default port number: 26864

---

**Note**
After changing and saving the port numbers, a restart is necessary for the changes to take effect.
### TCSB system, "Database" tab

#### Authorized phone number

Here, enter the string of numbers of the phone number that authorizes the TeleService gateway to establish a connection with the mobile wireless CP.

This number configured for the CP is transferred to the CP with the SMS message.

The phone number entered here must be configured in the STEP 7 project of the CPs in the list of phone numbers under the "Authorized phone number" parameter.

---

**Note**

**Permitted character set**

Keep to the permitted ASCII character set for the parameter: 0x20...0x7e and 0x80...0xff.

The hash '#' (0x23) must not be used.

---

#### Regular backup

For archiving purposes or if you want to transfer the configuration to another computer, you can use this function to make regular copies of the entire database.

So as not to reduce the storage capacity of your hard disk too much, if you have short backup intervals, you should delete older backup copies from time to time or move them to a different data storage medium.

Select the interval at which backup copies of the database will be created.

The backup copies are saved as *.bak* files in the following directory:

<Drive>:\Microsoft SQL Server\MSSQL10_50.TCSB\MSSQL\Backup

Backup copies are always created at 00:00h.

**Restart:**

When TS Gateway is restarted, the counter for the time of creation of the backup copies is reset and the period is counted starting from the time of the restart. This changes the time at which the backup copies are made. If you have configured the creation of backup copies and restart the gateway computer, the backup copies will be created at the configured intervals again starting from the day of the restart.
3.7 Changing port settings

Changing and opening ports

Changing port numbers
If you change port numbers, select ports only from the number range 1024 ... 65535. Select free ports that are not otherwise being used.

Ports 0 ... 1023 are standardized (well known ports). Of the registered ports as of 1024, no. 1024 is reserved.

Opening a port automatically
Port 587 used for the SSL authentication of TS Gateway with the SMTP server or SMS gateway provider is opened by TS Gateway during installation.

Preset numbers of the listener ports of the Telecontrol Manager (TCM)
For the internal communication of the components of TS Gateway and TCM with the stations, various ports are used whose numbers are preset by the system.

You can change the default port numbers in the CMT. The function of the ports and the presets are described in the following section: TCSB system (Page 33), "TCM" tab

3.8 Configuring SMS gateway providers

Only an administrator can setup and configure SMS gateway providers.

Function
The SMS gateway provider forwards an SMS message to the remote stations. The sequence of transmission is as follows:
1. The TeleService gateway sends an e-mail.
2. The e-mail is sent to an SMS gateway via an SMTP server.
3. The SMS gateway converts the e-mail into an SMS message and transfers this to the station.
3.8 Configuring SMS gateway providers

View

Select the "SMS gateway provider" entry in the navigation area.

![Dialog box for configuring an SMS gateway provider](image)

The name and e-mail address of the SMS gateway providers that have already been created are displayed in the object area.

The data of the provider selected above is configured in the parameter area.

Identification: Authorized phone number

To allow the mobile wireless CP to identify the TeleService gateway as the sender of an SMS message, a computer ID is transferred in the e-mail. This ID must be configured in the system settings as an "authorized phone number" before the sender of the SMS will be accepted by the CP. The "authorized phone number" is configured in the system settings, refer to the section TCSB system (Page 33).
3.8 Configuring SMS gateway providers

Configuring the parameters of the SMS gateway provider

Note
Parameters and placeholders

Remember that the SMS gateway providers have different requirements for the parameters of the e-mail. You will find examples in appendix Examples of the configuration data of SMS gateway providers (Page 41). There, you will also find the significance of the following placeholders:

- <SMS-NO>
  Placeholder for the phone number of the mobile wireless CP
- <MSG>
  Placeholder for the content of "Re" and "Text" of the e-mail that is automatically entered in the e-mail by TS Gateway.

The data of the providers is entered in the parameter area:

- Name
  Here, enter the name of the SMS gateway provider (can be selected freely).

- Address
  E-mail address of the SMS gateway provider.
  You will find the address in the agreement documents of your provider.

- Re
  Enter a suitable reference here.
  With some providers, the text field contains the information indicating to the recipient what needs to be done. The field can also include further job-specific information to allow use of special services of a provider.
  With some providers, the "authorized phone number" is entered here.
  Ask your provider about the reference.

- text
  Enter a suitable text here.
  Ask your provider about the text.
3.9 SMTP server

SMTP server

An SMS message of the TeleService gateway is sent as an e-mail. The SMTP server forwards the e-mail to the SMS gateway.

In this dialog, you can configure up to two SMTP servers:

- **Server 1**
  
  Main server to which all e-mails are sent.

- **Server 2**
  
  Substitute server to which the e-mails are sent if the main server is not obtainable.

The following parameters must be configured:

- **Mail server**
  
  SMTP address of the SMTP server
  
  Take the data from the agreement documents of your SMTP server provider.

- **Port number**
  
  Port number of the SMTP server
  
  Take the data from the agreement documents of your SMTP server provider.

- **User name**
  
  Take the data from the agreement documents of your SMTP server provider.

- **Password**
  
  Take the data from the agreement documents of your SMTP server provider.

- **E-mail address**
  
  E-mail address of the TeleService gateway.
  
  Take the data from the agreement documents of your SMTP server provider.
Examples of the configuration data of SMS gateway providers

The following table contains several examples of the configuration of the SMS gateway providers on the CMT. See also section Configuring SMS gateway providers (Page 37).

You can find out from your SMS gateway provider how to configure the e-mail for the wake-up SMS message.

Table A-1  SMS gateway provider-related e-mail structures

<table>
<thead>
<tr>
<th>SMS network provider</th>
<th>E-mail address of the SMS gateway provider *</th>
<th>Re **</th>
<th>Text **</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Plus</td>
<td>&lt;SMS-NO&gt;@smsmail.eplus.de</td>
<td>&lt;MSG&gt; *</td>
<td>&lt;MSG&gt; *</td>
</tr>
<tr>
<td>O2</td>
<td>&lt;SMS-NO&gt;@o2online.de ***</td>
<td>&lt;MSG&gt; *</td>
<td>&lt;MSG&gt; *</td>
</tr>
</tbody>
</table>
| Smstrade             | <SMS-NO>@email2sms.smstrade.de              | <MSG> * | #Identifikationkey  
#Sendroute  
#Sender# |
| T-Mobile             | <SMS-NO>@t-mobile-sms.de                    | <MSG> * | <MSG> * |
| Vodafone             | <SMS-NO>@vodafone-sms.de                    | <MSG> * | <MSG> * |

* <SMS-NO>
When configuring the e-mail address of the SMS gateway provider in the "Address" box, enter the placeholder "<SMS-NO>". TCSB then automatically enters the call number of the SIM card of the CP that originates from the CP configuration in STEP 7 and is transferred in the frame of the engineering station.

** All cells of the table with the entry "<MSG>"
Enter the placeholder "<MSG>" in the "Re" or "Text" box. TCSB then automatically enters the correct message that is stored in the system and understood by the CP 1242-7. (This is the same text that is transferred in a wake-up SMS as the message text.) Wake-up SMS for the CP 1242-7 (firmware V1.x) (Page 19)

*** The call number of the SIM card may only be entered in STEP 7 without the international country dialing code.

Activating the e-mail address

To receive the e-mail, a personal mobile e-mail address needs to be activated with some network providers. To do this, send an activation SMS with a short number to your SMS network provider that you will find in the table below "Activation and deactivation SMS". You will receive a personal e-mail address via SMS that is normally made up of the phone number and the gateway name.

To activate your personal mobile e-mail address, send the special activation text to a short number of your SMS network provider.
Examples of the configuration data of SMS gateway providers

You will receive a reply SMS with your personal mobile e-mail address that is made up of your phone number and the gateway name of your SMS network provider, for example: 0123412345678@providersonms.com

You will find examples of activation texts and short numbers of SMS network providers in the following table.

---

**Note**

Check with your network provider whether or not it is necessary to send activation and deactivation SMS messages. Your network provider will inform you of the texts and short number.

---

Table A-2  Activation and deactivation SMS (examples)

<table>
<thead>
<tr>
<th>Gateway name</th>
<th>E-Plus</th>
<th>O₂ Germany</th>
<th>T-Mobile</th>
<th>Vodafone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enabling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Send SMS with text to short number</td>
<td>Text: START Short number: 7676245</td>
<td>Text: OPEN Short number: 6245</td>
<td>Text: OPEN Short number: 8000</td>
<td>Text: OPEN Short number: 3400</td>
</tr>
<tr>
<td><strong>Deactivating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Send SMS with text to short number</td>
<td>Text: STOP Short number: 7676245</td>
<td>Text: STOP Short number: 6245</td>
<td>Text: CLOSE Short number: 8000</td>
<td>Text: CLOSE Short number: 3400</td>
</tr>
</tbody>
</table>
Where to find Siemens documentation

- You will find the article numbers for the Siemens products of relevance here in the following catalogs:
  - SIMATIC NET Industrial Communication / Industrial Identification, catalog IK PI
  - SIMATIC Products for Totally Integrated Automation and Micro Automation, catalog ST 70

You can request the catalogs and additional information from your Siemens representative.

- You will find SIMATIC NET manuals on the Internet pages of Siemens Automation Customer Support:
  (http://support.automation.siemens.com/WW/view/en)

Enter the entry ID of the relevant manual as the search item. The ID is listed below some of the reference entries in brackets.

As an alternative, you will find the SIMATIC NET documentation on the pages of Product Support:


Go to the required product group and make the following settings:

"Entry list" tab, Entry type "Manuals / Operating Instructions"

- You will find the documentation for the SIMATIC NET products relevant here on the data medium that ships with some products:
  - Product CD / product DVD or
  - SIMATIC NET Manual Collection

B.1 /1/

SIMATIC NET
TS Gateway (Version V3)
Operating Instructions
Siemens AG
B.2  /2/
SIMATIC NET
CP 1242-7
Operating Instructions
Siemens AG

B.3  /3/
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TeleControl Server Basic (Version V3)
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