CMe2100 (gen.3/LTE), CMi2110, CMi2130 Operations guide English v 1.1

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1 Document notes

All information in this manual, including product data, diagrams, charts, etc. represents information on products at the time of publication, and is subject to change without prior notice due to product improvements or other reasons. It is recommended that customers contact Elvaco AB for the latest product information before purchasing a CMe/CMi series product.

The documentation and product are provided on an “as is” basis only and may contain deficiencies or inadequacies. Elvaco AB takes no responsibility for damages, liabilities or other losses by using this product.

1.1 Copyright and trademark

The CMe Series and the CMi Series are trademarks of Elvaco AB, Sweden.

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2 Using this manual

2.1 Purpose and audience

This manual provides all information needed to mount, install, configure and use the CMe2100/CMi2110/CMi2130, and is intended for field engineers and developers. The document consists of two parts:

- The Operations guide, which presents some common product operations, as well as how and when they are used.
- The Administration reference, which lists all configurable product settings and their associated commands.

All information is based on software version 3.2.0. Please note that other versions may exhibit slight differences in appearance and/or functionality.

2.2 Online resources

To download the latest version of this manual, please visit http://www.elvaco.com. There, you will also find information about other Elvaco products and services, and how they can help you to achieve successful metering.

2.3 Notation

2.3.1 Command parameters and values

In the Operations guide, square brackets are used to illustrate configurable fields of a command.

Example 1: To set the meter readout schedule, send the command *sch storevalue [timeinterval]* to the phone number registered on the SIM-card.

In the Administration reference, parameters and values used in commands are enclosed in <>. Optional fields are enclosed in square brackets [].

Example 2: Execute command: *Momreport [<template id> [<meter list>]]*.

2.4 Symbols

The following symbols are used throughout the document to emphasize important information and useful tips:

The Note symbol is used to mark information that is important to take into consideration for safety reasons or to assure correct operation of the CMe2100/CMi2110/CMi2130.

The Tip symbol is used to mark information intended to help you get the most out of your product. It can for example be used to highlight a possible customization option related to the current section.

3 Introduction

3.1 Purpose

This chapter provides a description of how the CMe2100/CMi2110/CMi2130 is configured and how to quickly get the product started using its default settings.

3.2 Configure the product via commands

The CMe2100/CMi2110/CMi2130 has a built-in command parser, which analyses all incoming commands, executed by SMS or Telnet mode. By default, all commands will create a response from the product. If the command completed successfully, the product would respond with “OK”. If not, the product will respond with “Error: [error description]”

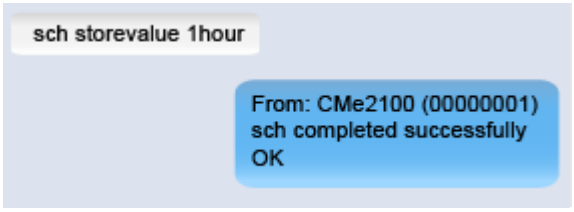
Each command of the CMe2100/CMi2110/CMi2130 corresponds to a security level. Depending on that level, a security code may be needed to execute certain commands. It is important to note that the security functionality is by default set to off and needs to be enabled. To learn more about how to configure the security settings of the CMe2100/CMi2110/CMi2130, please see section 4.20 (Enable security features).

3.3 Administration of the product

3.3.1 Administration using SMS

The CMe2100/CMi2110/CMi2130 is normally configured using a mobile phone. Each operation is then executed by sending an SMS to the phone number registered on the SIM card installed in the product. If the security functionality is enabled, the SMS must start with the correct security code, separated with a semicolon or a line break from the rest of the SMS. For example: *2222;qset email*.

By default, each SMS response from the CMe2100/CMi2110/CMi2130 will start with a line presenting the name and the serial number of the product. The picture below illustrates what a command sent by SMS and a product response may look like.



3.3.2 Administration using Telnet

The CMe2100/CMi2110/CMi2130 can be administrated by Telnet using any type of Telnet software. If the security functionality is enabled, the user will have to login on the product, using the *login* command, before any other command can be executed.

3.4 Quick start-up using default settings

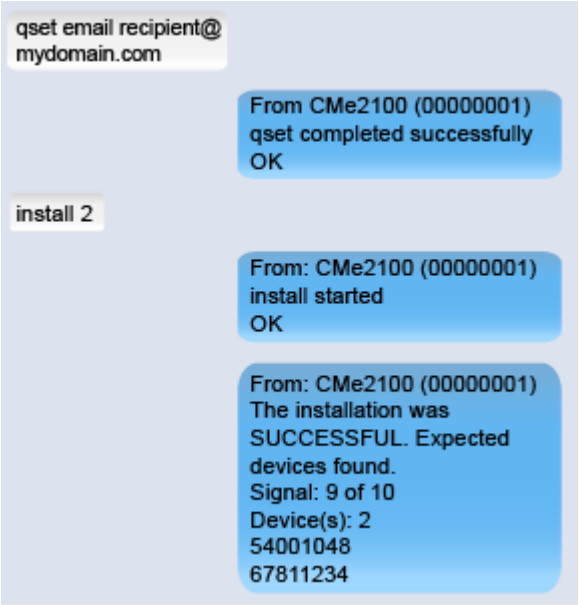
As soon as the CMe2100/CMi2110/CMi2130 has been mounted, powered up, and meters have been connected, you can quickly get the product started by running the *install* command and setting an e-mail Push Report recipient. After doing so, the CMe2100/CMi2110/CMi2130 will:

- Read all installed meters once every hour, using a baud rate of 2400 bit/s.
- Deliver an e-mail Push Report at 00:00 each day.

To get the product started, using these default settings:

- Send the command *qset email [recipient]* to the CMe2100/CMi2110/CMi2130 to set the e-mail recipient of the daily Push Report. The product will respond with an SMS confirming that the recipient has been set.
- Send the command *install [expected number of meters]* to the CMe2100/CMi2110/CMi2130 to start the installation of the meters. The product will respond with an SMS confirming that the installation has started, and an additional one when it has completed.

Variable	Explanation	Settings
Recipient	The e-mail address of the intended recipient of the daily Push Report.	Valid e-mail address
Expected number of meters	The number of meters the CMe2100/CMi2110/CMi2130 should expect to find in the installation process.	Arbitrary integer



4 Operations guide

Basic operations

4.1 Purpose

This chapter provides instructions on how to configure the most basic settings of the CMe2100/CMi2110/CMi2130. After executing each step of this chapter, the product will be performing scheduled meter readouts and deliver customized Push Reports with meter values. Please read through each section carefully.

4.2 Install meters

Purpose

Before the CMe2100/CMi2110/CMi2130 can be able to read meters, meters will have to be installed. As part of the installation process, the CMe2100/CMi2110/CMi2130 will synchronize its time with a public time server. The product is set to use the NTP server se.pool.ntp.org for time synchronization as a default option.

The CMe2100/CMi2110/CMi2130 supports three different ways of addressing meters on the M-Bus: primary addressing, secondary addressing and enhanced secondary addressing. A description of each mode is provided in Table 1.

Addressing mode	Explanation
Primary addressing	The CMe2100/CMi2110/CMi2130 uses the primary address of the meter, set by the end-user, when addressing meters on the M-Bus. Only applicable for wired M-Bus.
Secondary addressing	The CMe2100/CMi2110/CMi2130 uses the secondary address of the meter, set by the manufacturer, when addressing meters on the M-Bus. The secondary addressing mode will be used by default, and is the recommended option, since it will assure that each meter is addressed in a unique way. Only applicable for wired M-Bus.
Enhanced secondary addressing	The CMe2100/CMi2110/CMi2130 combines the enhanced address of a Wireless M-Bus Receiver and the secondary address of a meter when addressing meters on the M-Bus. Only applicable for wireless M-Bus.

Table 1: Addressing modes of the CMe2100

After the installation has completed, the CMe2100/CMi2110/CMi2130 will automatically read all installed meters once every hour and deliver a Push Report to all default e-mail recipients at 00:00 every day. For information on how to configure these default settings, please see section 4.3 (Schedule meter readouts) and section 4.4 (Configure Push report default settings)

4.2.1 Install Wired M-Bus meters

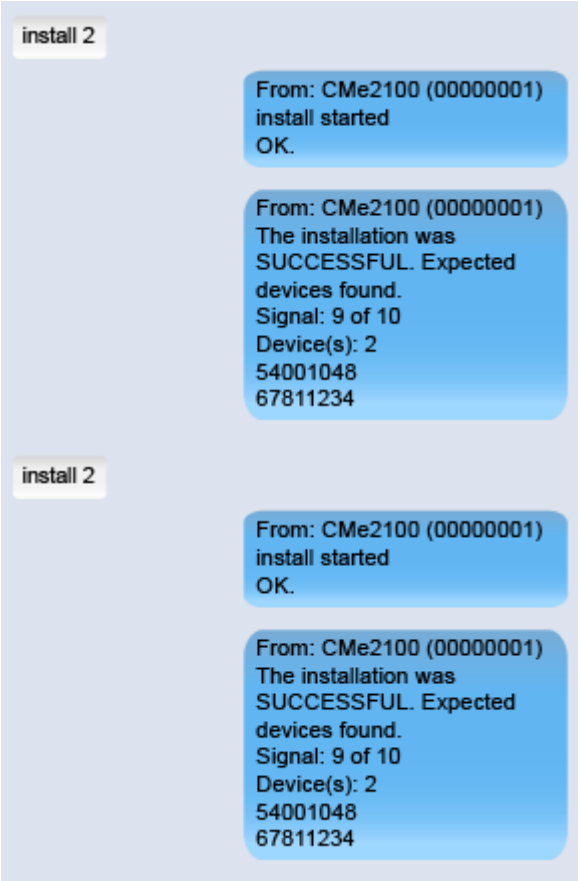
To install Wired M-Bus meters:

- Send the command *install [expected numbers of meters]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the installation has started.
- When the installation has finished, the product will send an additional SMS, informing about the number of meters that were installed and their addresses. The installation may take up to 20 minutes to complete, depending on the number of meters.

- As part of the installation process, the CMe2100/CMi2110/CMi2130 will synchronize the time with a public time server.

Variable	Explanation	Settings
Expected number of meters	This variable is optional to include. It sets the number of meters the CMe2100/CMi2110/CMi2130 should expect to find in the installation process. Including this variable might speed up the installation, by letting the product know when all meters have been found and the searching for more meters should stop.	Arbitrary integer

Table 2: M-Bus meter installation



4.2.2 Install Wireless M-Bus meters

CMe2100/CMi2110/CMi2130 communicates with Wireless M-Bus meters through one or several Wireless M-Bus Receivers by using an enhanced secondary address. The enhanced secondary address is made up of a combination of the meter secondary address and the M-Bus Receiver enhanced address, and thereby defines the complete communication chain.

To install Wireless M-Bus meters, the addressing mode needs to be set to “esecondary”. Besides from that, the installation is identical to that of Wired M-Bus meters.

The CMe2100/CMi2110/CMi2130 will automatically use the Wireless M-Bus Receiver that has managed to establish the best connection with each specific meter.

To perform an installation of Wireless M-Bus meters:

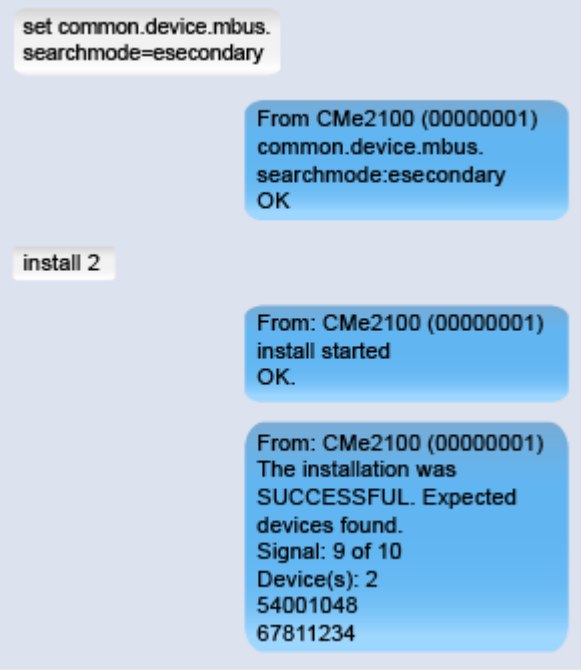
- Send the command *set common.device.mbus.searchmode=esecondary* to the

CMe2100/CMi2110/CMi2130 to set its addressing mode to “enhanced secondary”**.** The product will respond with an SMS confirming that the addressing mode has been set.

- Send the command *install [expected number of meters]* to the CMe2100/CMi2110/CMi2130 to start the installation. The product will respond with an SMS confirming that the installation has started.
- When the installation has finished, the product will send an additional SMS, informing about the number of meters installed and their addresses. The installation may take up to 20 minutes to complete.
- As part of the installation, the CMe2100/CMi2110/CMi2130 will synchronize the time with a public time server.

Variable	Explanation	Settings
Expected number of meters	This variable is optional to include. It sets the number of meters the CMe2100/CMi2110/CMi2130 should expect to find in the installation process. Including this variable might speed up the installation, by letting the product know when all meters have been found and the searching for more meters should stop.	Arbitrary integer

Table 3: Wireless M-Bus meter installation



4.2.3 Perform an installation by using a Settings Command File

A meter installation can be performed by running a Settings Command File. The CMe2100/CMi2110/ CMi2130 will then connect to Elvaco’s server, download a CAD file and synchronize its settings with it. In this way, a customized installation, including what settings to use and which meters to install, can easily be configured. Contact Elvaco for more information.

To perform an installation using a settings command file:

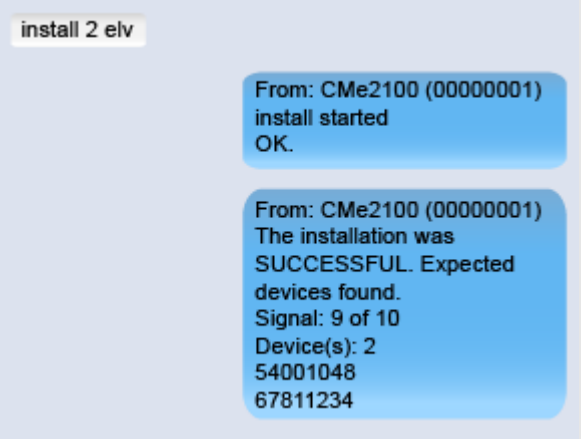
- Send the command *install [expected number of meters] [cad file]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the installation has started.
- When the installation has finished, the product will send an additional SMS, informing about the

number of meters installed and their addresses. The installation may take up to 20 minutes to complete.

- As part of the meter installation, the CMe2100/CMi2110/CMi2130 will synchronize the time with a public time server.

Variable	Explanation	Settings
Expected number of meters	The maximum number of meters the CMe2100/CMi2110/CMi2130 should expect to find in the installation process. This field needs to be included when performing an installation using a Settings Command File.	Arbitrary integer
CAD file	The name of the Settings Command File that the CMe2100/CMi2110/CMi2130100 will download and synchronize with. Contact Elvaco for more information.	Name of a valid CAD file

Table 4: Settings command file installation



4.3 Schedule meter readouts

Purpose

After the meter installation has completed, the CMe2100/CMi2110/CMi2130 will by default read all meters once every hour. This default option can be configured by setting a new meter readout schedule.

A meter readout schedule can be selected from Table 5 or arbitrary set using cron patterns. To learn more about cron patterns, see section 4.30.1 (Specify schedules using cron patterns).

Time interval	Explanation
5min	A meter readout is performed every 5th minute.
15min	A meter readout is performed every 15th minute.
1hour	A meter readout is performed every hour.
12hour	A meter readout is performed every 12th hour.
1day	A meter readout is performed every day at 00:00.
1week	A meter readout is performed every Monday at 00:00.
1month	A meter readout is performed the first day of every month at 00:00.

Table 5: Readout schedule options

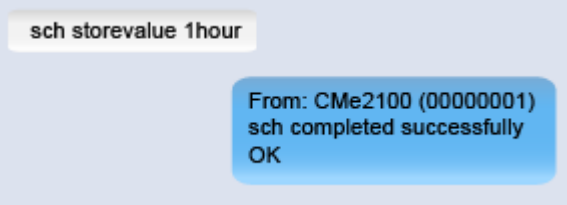
4.3.1 Set a meter readout schedule

To set a meter readout schedule:

- Send the command *sch storevalue [time interval]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the readout schedule has been set.

Variable	Explanation	Settings
Time interval	The schedule by which the CMe2100/CMi2110/CMi2130 will perform meter readouts.	5min,15min, 1hour, 12hour, 1day, 1week, 1month

Table 6: Set a readout schedule



4.4 Configure Push Report default settings

Purpose

Push Reports are used to deliver data from meter readouts to selected recipients by a chosen time schedule and report template. Push Reports can be delivered by e-mail, SMS, uploaded as a downloadable file on an FTP server or to a server running a HTTP web service. The first step is to set the default recipient option for each of the alternatives that will be used. A complete list of the configurable settings for each type of recipient can be found in section 5.4 (Configurable settings).

4.4.1 Configure e-mail Push Report default settings

To configure e-mail Push Report default settings:

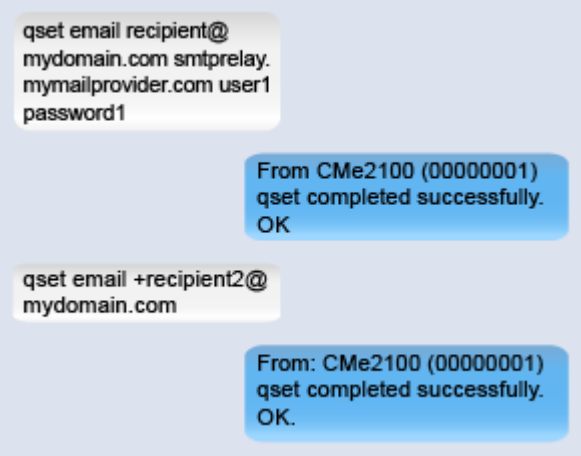
- Send the command *qset email [recipient]l [e-mail server] [username] [password]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the e-mail default settings have been configured.

Additional e-mail recipients can be added anytime by using the command *qset email +[recipient]*

By using the commands *set common.email.cc=[recipient]* and *set common.email.bcc=[recipient]*, copies and hidden copies can be added for a Push Report.

Variable	Explanation	Settings
Recipient	The e-mail addresses of all intended default recipients of Push Reports, separated by comma.	List of valid e-mail addresses.
E-mail server	The SMTP (e-mail) server used by the CMe2100/CMi2110/CMi2130 to deliver e-mail Push Reports. Elvaco provides an SMTP server, which is free to use, set by default for all CMe2100/CMi2110/CMi2130products. This field is therefore optional to include.	Valid SMTP (e-mail) server
Username	The username used by the CMe2100/CMi2110/CMi2130 to access the SMTP server.	Text
Password	The password used by the CMe2100/CMi2110/CMi2130 to access the SMTP server.	Text

Table 7: E-mail Push Report default settings



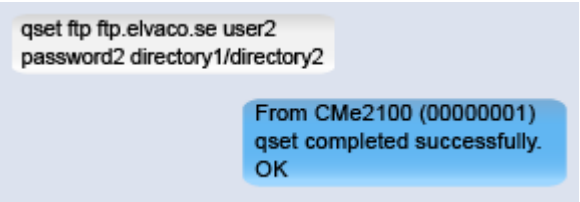
4.4.2 Configure FTP Push Report default settings

To configure FTP Push Report default settings:

- Send the command *qset ftp [ftp server][port] [username] [password] [remotedir]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the FTP default settings have been configured.

Variable	Explanation	Settings
FTP server	The FTP server where FTP Push Reports will be uploaded. Contact your IT administrator for more information about what FTP server your company is using.	Valid FTP server.
Port	FTP server port number.	Valid port number
Username	The username used by the CMe2100/CMi2110/CMi2130to access the FTP server.	Arbitrary text
Password	The password used by the CMe2100/CMi2110/CMi2130 to access the FTP server.	Arbitrary text
Remotedir	The directory where FTP Push Reports will be uploaded.	Valid directory on the FTP server.

Table 8: FTP Push Report default settings



4.4.3 Configure HTTP Push Report default settings

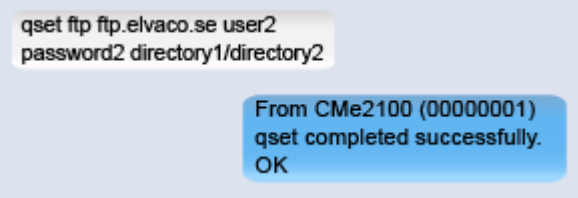
To configure HTTP Push Report default settings:

- Send the command *qset http [server url] [username] [password] [authmode]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the HTTP default settings have been configured.

Variable	Explanation	Settings
Server URL	The URL of the HTTP server where HTTP Push Reports will be uploaded. Contact your IT administrator for more information about what HTTP server your company is using.	URL of valid HTTP server.

Username	The username used by the CMe2100/CMi2110/CMi2130 to access the HTTP server.	Arbitrary text
Password	The password used by the CMe2100/CMi2110/CMi2130 to access the HTTP server.	Arbitrary text
Authmode	The authentication mode used when connecting to the HTTP server.	none, basic

Table 9: HTTP Push Report default settings



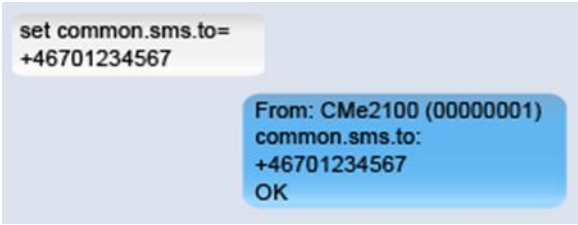
4.4.4 Configure SMS Push Report default settings

To configure the SMS Push Report default settings:

- Send the command *set common.sms.to [phone numbers]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the list of phone numbers has set.

Variable	Explanation	Settings
Phone numbers	A list of phone numbers, separated by comma, that will be the default recipients of SMS Push Reports.	A list of valid phone numbers.

Table 10: SMS Push Report default settings



4.5 Schedule Push Reports and Event Reports

Purpose

CMe2100/CMi2110/CMi2130 supports two different types of reports, Push Reports and Event Reports. The difference between the two is explained in Table 11. As mentioned, the CMe2100/CMi2110/CMi2130 supports four different report delivery protocols: HTTP, FTP, e-mail and SMS. Each delivery protocol has several predefined report templates available, which will set by which protocol the report will be delivered. For example, by selecting an e-mail report template, the corresponding report will be delivered by e-mail.

Report template numbers always start with “1” for e-mail, a “2” for FTP and “3” for HTTP. For example, selecting the e-mail report template 1101 (2101 for FTP, 3101 for HTTP) will structure all meter values in one single post while template, 1112 (2112 for FTP, 3112 for HTTP) will deliver the meter values in an Excel file. All FTP, HTTP, e-mail and SMS report templates are listed in chapter 5.13 (Report templates).

To learn more about the different report templates, please visit http://www.elvaco.com and go to **Downloads**.

Type of report	Explanation

Push Report	Push Reports are used to deliver meter values by a selected report template and time schedule.
Event Reports	Event Reports are triggered by a certain event taking place in the CMe2100/CMi2110/CMi2130. A schedule can therefore not be set for this type of report.

Table 11: Types of reports

4.5.1 Schedule Push Reports

There are five different Push Reports available: report1-report5. Each one is easily enabled and disabled using the *set* command. A Push Report schedule is set using the predefined time interval values from Table 12 or by using cron patterns. To learn more about cron patterns, see section 4.30.1 (Specify schedules using cron patterns).

Recipient information added for individual Push Report will override default recipient settings. For example, if setting an e-mail recipient for report1, it will be used instead of the default e-mail recipient option.

Time interval	Explanation
1min	A Push report, containing all stored values from the last minute, is sent once every minute.
5min	A Push report, containing all stored values from the last five minutes, is sent once every 5th minute.
10min	A Push report, containing all stored values from the last ten minutes, is sent once every 10th minute.
15min	A Push report, containing all stored values from the last 15 minutes, is sent once every 15th minute.
20min	A Push report, containing all stored values from the last 20 minutes, is sent once every 20th minute.
30min	A Push report, containing all stored values from the last 30 minutes, is sent once every 30th minute.
1hour	A Push report, containing all stored values from the last hour, is sent once every hour.
12hour	A Push report, containing all stored values from the last 12 hours, is sent once every 12th hour.
1day	A Push report, containing all stored values from the last day, is sent at 00:00 each day.
1week	A Push report, containing all stored values from the last week, is sent every Monday at 00:00.
1month	A Push report, containing all stored values from the last month, is sent the first day of each month at 00:00.

Table 12: Push Report schedule options

To schedule a Push Report:

- Send the command *sch [report] [schedule] [template]* to the CMe2100/CMi2110/CMi2130to have the Push Report delivered to the default recipients by the set schedule and template.
- By extending the command to *sch [report] [schedule] [template] [type of recipient]= [recipient]*, the default recipients will be overridden by the new recipient information added for the specific Push Report.
- The product will respond with an SMS confirming that the Push Report schedule has been set.

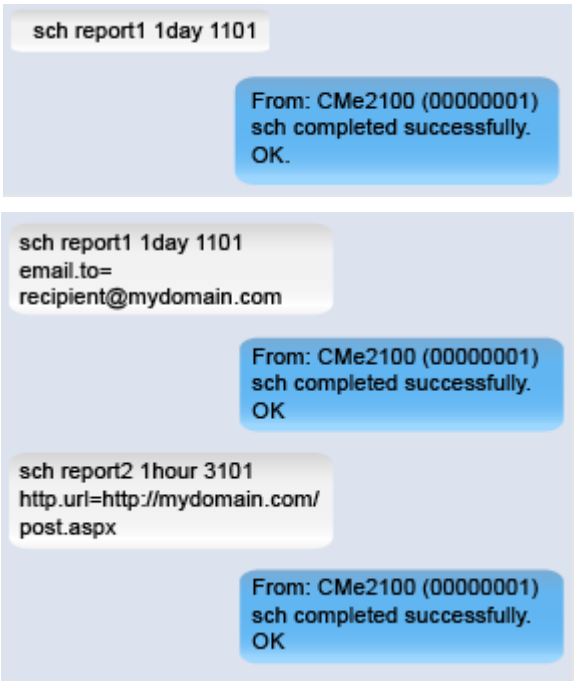
Variable	Explanation	Settings

Report	The report to be configured. There are five different Push Reports available.	report1, report2, report3, report4, report5
Schedule	The schedule by which the Push Report will be delivered.	A selected value from Table 12.
Template	The number of a report template. The selected template will determine to what type of recipients the Push Report will be delivered. For example, setting the template to 1101 (e-mail template) will deliver the Push report to e-mail recipients only. All report templates are available on the Elvaco website, http://www.elvaco.com	Valid report template number.
Type of recipient	The type of recipient the Push Report will be delivered to. See Table 14 for more information.	email.to, ftp.server, http.url, sms.to
Recipient	The addresses of the Push Report recipients.	Valid e-mail addresses, phone numbers or server address.

Table 13: Scheduling Push Reports

Field	Explanation
email.to	Used to set a list of e-mail addresses that will receive the Push Report.
ftp.server	Used to set an FTP server where the Push Report will be uploaded as downloadable files.
http.url	Used to set a HTTP server, where Push Reports will be uploaded.
sms.to	Used to set a list of phone numbers that will receive the Push Reports by SMS.

Table 14: Push Report protocols



4.5.2 Enable Event Reports

There are five different events available for CMe2100/CMi2110/CMi2130, each one described in Table 16. If an event is triggered, an Event Report will be delivered to all e-mail default recipients.

To enable an Event Report:

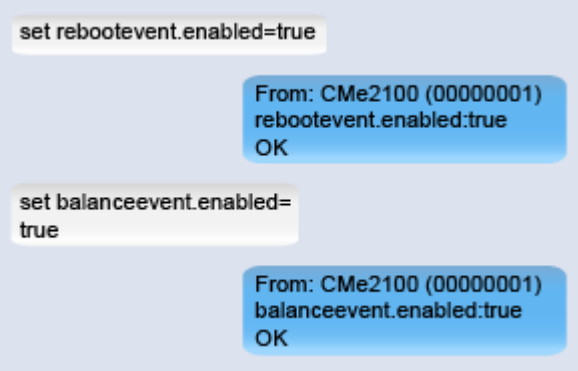
- Send the command *set [event].enabled=true*. The product will respond with an SMS confirming that the Event Report has been enabled.

Variable	Explanation	Settings
Event	The event that will trigger the Event Report.	An arbitrary command from Table 16

Table 15: Enable Event Reports

Variable	Explanation	Command
Reboot event	Triggered when the CMe2100/CMi2110/CMi2130 undergoes a reboot.	*rebootevent*
Balance event	Triggered when the credit balance of the SIM card falls below a set limit.	*balanceevent*
Firmware update	Triggered when the firmware is updated for the CMe2100/CMi2110/CMi2130.	*fwupdate*
Software update	Triggered when the software is updated for the CMe2100/CMi2110/CMi2130.	*swupdate*
Software update synchronization	Triggered when the CMe2100/CMi2110/CMi2130 perform a synchronization as part of the software update process.	*swupdatesynchandler*

Table 16: List of events

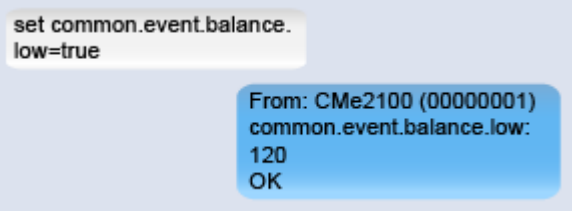


For the Balance Event, the credit limit of the SIM card that will trigger the report can be set. To set the Balance Event credit limit:

- Send the command *set common.event.balance.low=[credit limit]* to the CMe2100/CMi2110/CMi2130.The product will respond with an SMS confirming that the credit limit has been configured.

Variable	Explanation	Settings
Credit limit	The credit limit which will trigger the Balance Event Report.	An arbitrary number.

Table 17: Balance low credit limit



4.6 Download a Commission Report

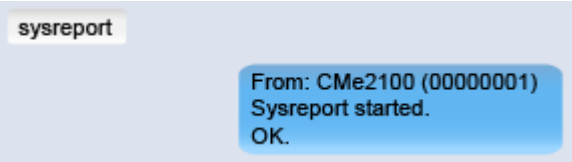
Purpose

After performing a meter installation and setting Push Report schedules, a Commission Report should always be downloaded. It contains information about all current settings, including installed meters and Push Report recipients. Upon request, the Commission Report will be delivered to all default e-mail recipients. For more information on the Commision Report, see section 5.7.5 (Sysreport – Execute a System Report).

4.6.1 Request a Commission Report

To request a Commission Report:

- Send an SMS with the command *sysreport* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the report has started, and the Commission Report will be delivered to all default e-mail recipients.



Common operations

4.7 Purpose

At this point you should have gotten started with your CMe2100/CMi2110/CMi2130 and receive recurrent Push Reports with meter values. This chapter will present some additional common features, which will help you enhance the operation of your product even further.

4.8 Configure settings by using a Settings Command File

Purpose

A Settings Command File can be used to very quickly configure all desired settings of your product. The CMe2100/CMi2110/CMi2130 will connect to Elvaco's server and download a CAD file to synchronize its settings with.

4.8.1 Perform a synchronization via a Settings Command File

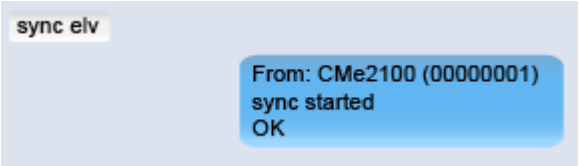
To configure product settings using a Settings Command File:

- Send the command *sync [cad file]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the synchronization was successful.

	Make sure to contact Elvaco before performing a synchronization to make sure that a CAD file customized to your wants can be created.

Variable	Explanation	Settings
CAD file	The name of the Settings Command File that CMe2100/CMi2110/CMi2130 will download and synchronize its settings with. Contact Elvaco for more information.	The name of a valid CAD file.

Table 18: Configure settings using a Settings Command File



4.9 Check product and meter settings

Purpose

There are several commands that can be used to check the current status and settings of the CMe2100/CMi2110/CMi2130. As main sources you may use:

- The Status Report which provides information about time and network settings as well as coverage for the product. For more information about the Status Report, see section 5.7.1 (Status – Request status information).
- The System Report, which provides information about product settings and current status, all installed meters and all configurable variables. For more information about the System Report, see section 5.7.5 (Sysreport – Execute a System Report).

4.9.1 Request a Status Report

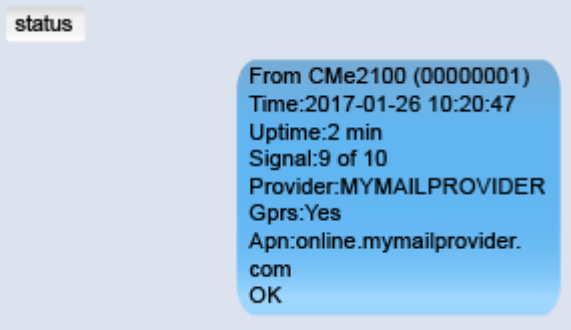
To request a Status Report:

- Send the command *status* to the CMe2100/CMi2110/CMi2130. The product will respond with a

Status Report. It is possible to customize the information that is included in the Status Report. See section 5.7.1 (Status – Request status information) for more information. For the default Status Report, the information of Table 19 will be included.

Field	Explanation
Time	The date and the time set for the product.
Uptime	The total time the product has been running since the last reboot.
Signal	A value between 1-10, describing the strength of the mobile network signal picked up by the product.
Provider	The name of the SIM card operator.
GPRS	Information about product GRPS coverage.
APN	The APN used to connect to the mobile network.

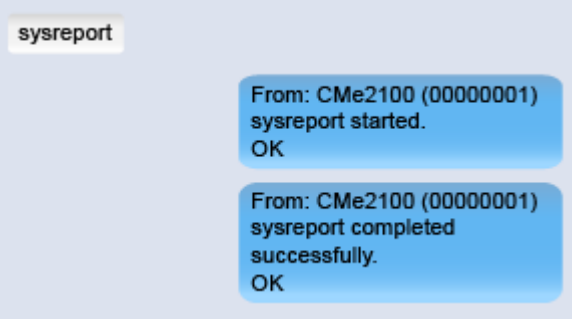
Table 19: Default Status Report



4.9.2 Request a System Report

To request a System Report from the CMe2100/CMi2110/CMi2130:

- Send the command *sysreport* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the System Report has started. An additional SMS will be sent when the System Report has been delivered to all default e-mail recipients.



4.9.3 Check current settings

By using the *get* command, individual settings of the CMe2100/CMi2110/CMi2130 can be easily checked, for example the e-mail default recipients. For more information about the *get* command, see section 5.5.2 (Get – Check configuration values).

To check individual current settings:

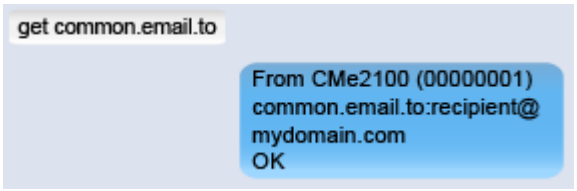
- Send the command *get common.[product setting]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS, displaying the configuration value currently used for the specific setting. A selection of settings that can be displayed with the *get* command is listed in Table 21.

Variable	Settings	Explanation
Product setting	The setting of the CMe2100/CMi2110/CMi2130 that you want to display.	An arbitrary command from Table 21.

Table 20: Getting product settings

Variable	Explanation	Command
E-mail recipients	The e-mail default recipients set to receive activated e-mail Push Reports.	*common.email.to*
E-mail server	The default e-mail server set.	*common.email.server*
FTP server	The FTP server set to receive activated FTP Push Reports.	*common.ftp.server*
HTTP server	The URL of the HTTP server set to receive activated HTTP Push Reports.	*common.http.url*
SMS recipients	The list of phone numbers set to receive activated Push Reports.	*common.sms.to*
Trusted phone numbers	The list of trusted phone numbers which are able access the CMe2100/CMi2110/CMi2130.	*common.security.nraccesslist*
Trusted IP addresses	The list of trusted IP addresses which are able access the CMe2100/CMi2110/CMi2130.	*common.security.ipaccesslist*
Search mode	The way meters are addressed on the M-Bus.	*common.device.mbus.searchmode*
Baud rate	The speed of communication at the M-Bus.	*common.device.mbus.searchbaud*
Product name	The name used by the CMe2100/CMi2110/CMi2130 to identify itself in Push Reports.	*common.product.name*

Table 21: Selection of configuration values



4.10 Check the operational status of the system

Purpose

CMe2100/CMi2110/CMi2130 uses a System Log to log events taking place on the M-Bus. Each log entry corresponds to a severity level, which makes it possible to adjust the content of the System Log by setting the minimum severity level of logged events. Table 22 provides a description of each level.

By for example setting the severity level to “0”, all system events with a severity level of zero or higher will be logged. For more information about the System Log, see section 5.7.4 (Logreport – Execute a System Log Report).

Value	Explanation
-2	Debug events
0	Info events
1	Warning events

2	Error events
3	Critical events
4	Exception events

Table 22: System Log severity levels

4.10.1 Set the minimum severity level of logged events

To change the minimum severity level of System Log entries:

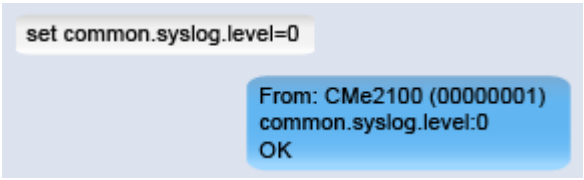
- Send the command *set common.syslog.level=[minimum severity level]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the minimum severity level has been set.

⚠	It is highly recommended that debug log entries -2 are only logged in case of troubleshooting. If not, the System Log will fill up very fast, and it might be hard to navigate. Logging debug log entries might also affect the performance of the CMe2100/CMi2110/CMi2130 in a negative way.

ℹ	To learn more about System Log entries, please visit http://www.elvaco.com/en/download.

Variable	Explanation	Settings
Minimum severity level	The lower limit of the events that will be logged.	-2, -1, 0, 1, 2, 3, 4

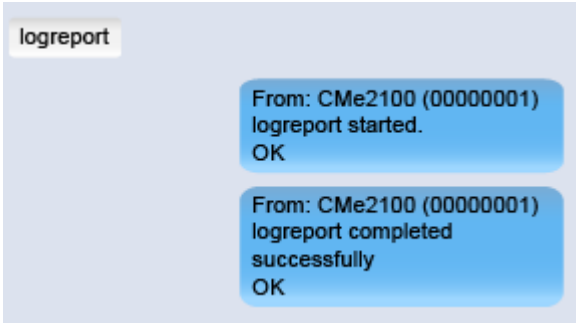
Table 23: Minimum severity level of logged events



4.10.2 Request a System Log Report

To request a System Log Report:

- Send the command *logreport* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the System Log Report has started. Another SMS will be sent when a System Log Report has been delivered to all default e-mail recipients set.



4.11 Install encryption keys for wireless meters

Purpose

The CMe2100/CMi2110/CMi2130 has a built-in management system for wireless encryption keys, where meter encryption key is registered in the product to enable decryption of incoming messages.

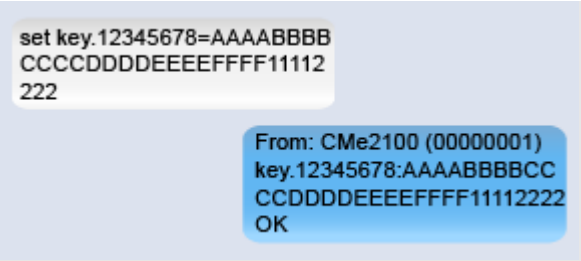
4.11.1 Link an encryption key to an individual meter

To add a meter encryption key:

- Send the command *set key.[secondary address]=[encryption key]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the encryption key will be used to decrypt information from the meter.

Variable	Settings	Explanation
Secondary address	The secondary address of the meter (set by the manufacturer and printed on the meter).	8-digit number
Encryption key	The 32-character hex format encryption key used by the meter to encrypt messages.	32 characters on hexadecimal format

Table 24: Adding encryption keys

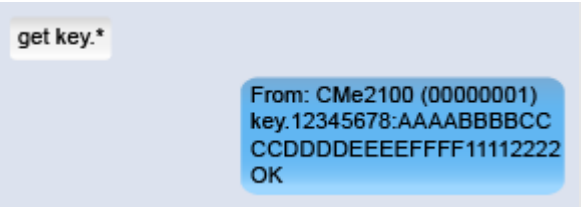


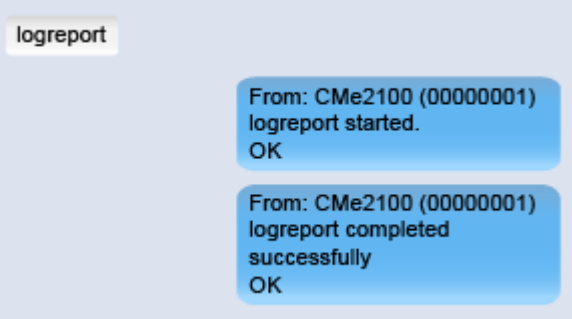
4.11.2 Display all registered encryption keys

To display all registered encryption keys the meters they correspond to:

- Send the command *get.key.** to the CMe2100/CMi2110/CMi2130. The product will respond with a list of all registered encryption keys and what meters are using them.

⚠	If the encryption key list is longer than 160 characters, it will not fit into an SMS. Therefore, if using many meters, the System Log may have to be used to display encryption keys. A System Log Report can be requested using the command *logreport* and will be sent to all e-mail default recipients. For more information, see section 4.10.2 (Request a System Log Report).





4.12 Configure meter installation settings

Purpose

The meter installation settings determine how the CMe2100/CMi2110/CMi2130 will perform meter installations. This includes handling of already-installed meters and the maximum number of meters the CMe2100/CMi2110/CMi2130 will install. For more information about meter installation settings, see section 5.9.1 (Install – Find and install connected meters).

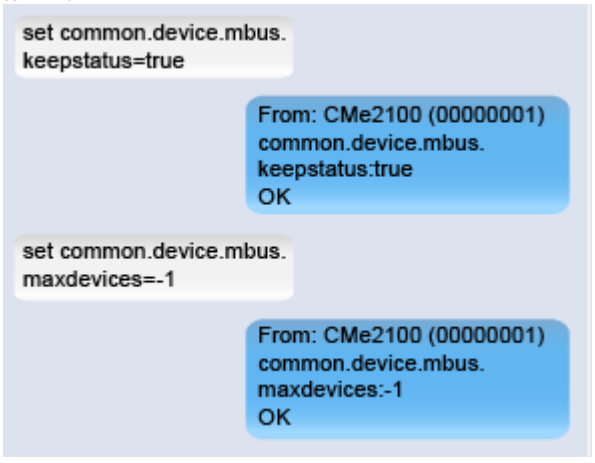
4.12.1 Set how to perform a meter installation

To set how a meter installation is performed:

- Send the command *set common.device.mbus.clean=true* to have the CMe2100/CMi2110/CMi2130delete already-installed meters before performing a new installation. Send the command *set common.device.mbus.keepstatus=true* to have the CMe2100/CMi2110/CMi2130 save the status of all installed meters before performing a new installation.
- Send the command *set common.device.mbus.maxdevices=[meter limit]* to determine the maximum number of meters the CMe2100/CMi2110/CMi2130 will install.
- The product will respond with an SMS confirming each command.

Variable	Explanation	Settings
Meter limit	The maximum number of meters the CMe2100/CMi2110/CMi2130 will be able to install.	Integer between 0 and 128 (CMe2100 gen.3, CMi2110, CMi2130)/between 0 and 256 (CMe2100 LTE). “-1” will disable the setting.

Table 25: Setting the meter limit



4.13 Configure common Push Report settings

Purpose

CMe2100/CMi2110/CMi2130 supports a set of common Push Report configuration options, which are presented in this chapter. These include:

- Making changes to a Push Report schedule, template and recipients without activating the Push Report.
- Set a header to identify the CMe2100/CMi2110/CMi2130 in HTTP Push Reports.
- Remove current Push Report recipients.
- Disable activated Push Reports.

4.13.1 Change the setting of an activated Push Report

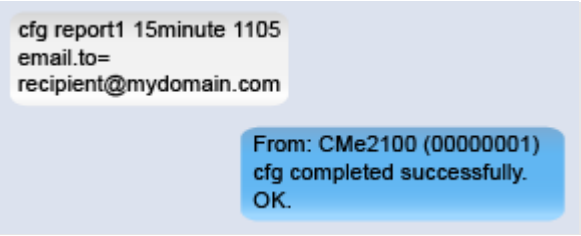
Push Report settings can be configured by using the *cfg* command. Contrary to the *sch* command, it enables changing of settings without activating a Push Report (whereas the *sch* command always activates the configured Push Report). For more information about the *cfg* command, see section 5.5.5 (Cfg – Change a command or an event configuration).

To configure the settings of a Push Report:

- Send the command *cfg [report] [schedule] [template] [recipient]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the settings of the Push Report have been changed.

Variable	Explanation	Settings
Report	The report to be configured. There are five different Push Reports available.	report1, report2, report3, report4, report5
Schedule	The time schedule by which the Push Report will be delivered.	A selected value from Table 12.
Template	The number of a desired report template. The template will determine the protocol of the Push Report. For example, if choosing 1101 (e-mail template), the Push Report will be sent to e-mail recipients only. All report templates are listed in section 5.13 (Report templates). For more information, please visit the Elvaco website, http://www.elvaco.com/download.	Valid template number.
Recipient	The addresses of the intended recipients of the Push Report.	List of valid e-mail addresses, phone numbers or a valid server address.

Table 26: Configure Push report settings



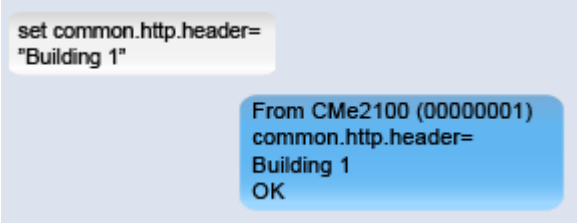
4.13.2 Set a HTTP Push Report header

A HTTP Push Report header can be used to identify the CMe2100/CMi2110/CMi2130 sending a Push Report. In this way, the end-user will not have to remember the secondary addresses of each

CMe2100/CMi2110/CMi2130. The information to be included in a HTTP header can be selected arbitrarily.

To set the HTTP header for a CMe2100/CMi2110/CMi2130:

- Send the command *set common.http.header="[header]".* The product will respond with an SMS, confirming that the header has been set.



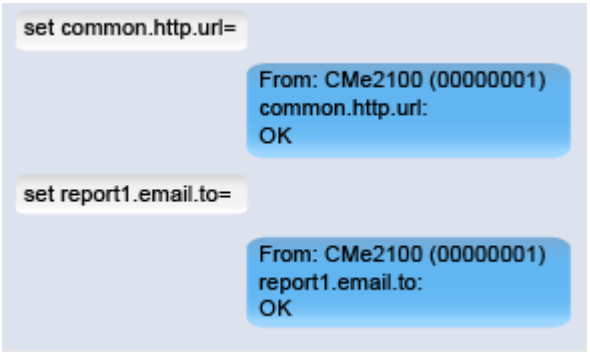
4.13.3 Remove all current Push Report recipients

To remove all current Push Report recipients for a selected protocol:

- Send the command *set common.[protocol]=* to the CMe2100/CMi2110/CMi2130. Use the command *set.[report].[protocol]=* to remove all recipient of a specific Push Report. The product will respond with an SMS confirming that the recipients have been removed.

Variable	Explanation	Settings
Report	The Push Report that will be configured. There are five different Push Reports available.	report1, report2, report3, report4, report5
Protocol	The recipient protocol that will be configured.	email.to, ftp.server, http.url, sms.to

Table 27: Remove recipients of Push Reports



4.13.4 Remove individual e-mail Push Report recipients

If more than one default recipient has been set for an e-mail Push Reports, individual recipients can be removed in the following way:

- Send the command *qset email=-[recipient]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the recipient was removed from the default recipient list.

Variable	Explanation	Settings

Recipient	The e-mail recipient that will be removed as default option.	E-mail address of a registered e-mail Push Report default recipient

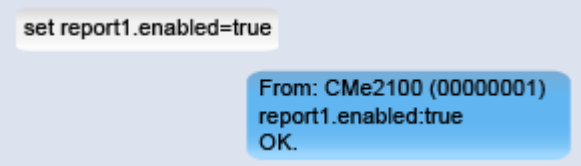
Table 28: Removing individual Push Report recipients

4.13.5 Disable an activated Push Report

To disable a Push Report:

- Send the command *set [report].enabled=false* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the report has been disabled.

Variable	Explanation	Settings
Report	The report that will be disabled. There are five different Push Reports available.	report1, report2, report3, report4, report5



4.14 Configure settings for an individual meter

Purpose

In some cases, it might be desirable to use individual settings for a specific meter. It is done by using the *device* command. For more information about the *device* command, please see section 5.11.1 (Device – Send a command directly to a meter).

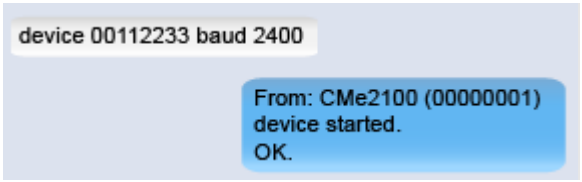
4.14.1 Set the baud rate for communication with a specific meter

To set the baud rate used to communicate with a specific meter:

- Send the command *device [secondary address] [baud rate]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the baud rate has been set.

Variable	Settings	Explanation
Secondary address	The secondary address of the meter (printed on the meter).	8-digit number
Baud rate	The baud rate that should be used by the CMe2100/CMi2110/CMi2130 to communicate with the meter.	baud2400, baud9600

Table 29: Set the baud rate used to communicate with a meter



Special operations

4.15 Purpose

This chapter targets advanced users and contains instruction on how to perform operations that are generally less frequently used. Typically, these operations are needed to configure more complex setups of the CMe2100/CMi2110/CMi2130.

4.16 Configure time settings

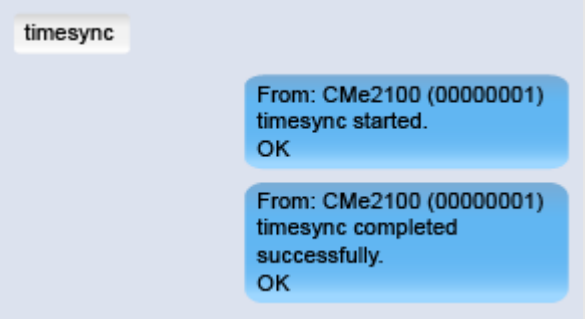
Purpose

In order for the CMe2100/CMi2110/CMi2130 to operate accurately, it is important that the clock stays synchronized. This is ensured by having the product check a public time server two times per day. The CMe2100/CMi2110/CMi2130 uses a maximum accepted time difference, set to zero seconds by default. Thus, if the time of the product differs from the time of the server by more than zero seconds, the CMe2100/CMi2110/CMi2130 will adjust its time. In rare cases it might be desirable to change the time server, the time synchronization schedule or the maximum accepted time difference. This section describes how that can be done. To learn more about the CMe2100/CMi2110/CMi2130 configurable time settings, see section 5.4.11 (Time settings).

4.16.1 Synchronize the time with the time server manually

To synchronize the time of the CMe2100/CMi2110/CMi2130 with the time server manually:

- Send the command *timesync* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the time synchronization has started. An additional SMS will be sent when the synchronization has completed.



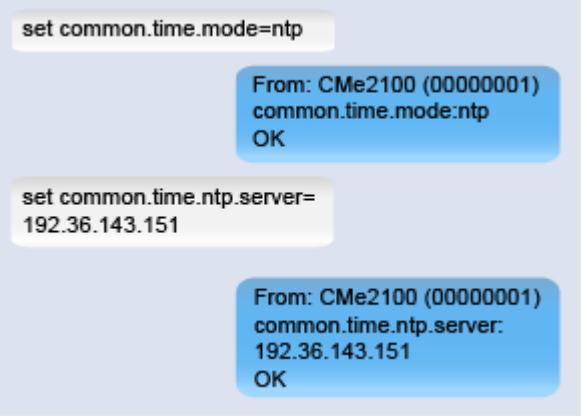
4.16.2 Change the time server

To change the time server used by the CMe2100/CMi2110/CMi2130 for time synchronizations:

- Send an SMS with the command *set common.time.mode=[server type]* to set the type of time server to use.
- Send an SMS with the command *set common.time.[server type].server=[IP address]* to set the IP address of the time server.
- The CMe2100/CMi2110/CMi2130 will respond by SMS confirming that the type of time server and the time server used have been set.

Variable	Explanation	Settings
Server type	The type of server used by the CMe2100/CMi2110/CMi2130 for time synchronization.	ntp, daytime
IP address	The IP address of the time server that the CMe2100/CMi2110/CMi2130 will use to synchronize the time.	Valid IP address

Table 30: Set a new time server



Elvaco strongly recommends only to use NTP which providing better accuracy, more robust and use less network bandwidth.

4.16.3 Change the time synchronization schedule

To configure the schedule used by the CMe2100/CMi2110/CMi2130 to check the time server:

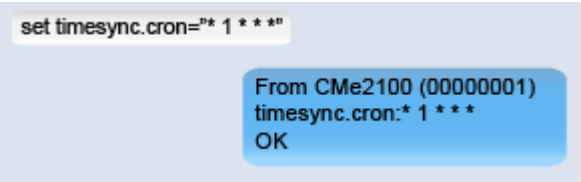
- Send the command *set timesync.cron="[cron pattern]"* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming the schedule has been set.

Variable	Explanation	Settings
Cron pattern	A cron pattern representing the schedule by which the CMe2100/CMi2110/CMi2130 will check the time server. Each star needs to be separated by a blank space.	Valid cron pattern

Table 31: Time server comparison schedule

A failed time synchronization attempt will act as a warning for the CMe2100/CMi2110/CMi2130 that the network is not reachable. The product will then perform a reboot to reinitialize the network link.

The time synchronization schedule that should be used depends on how tightly the clocks need to be synchronized. Assuming that the maximum accepted time drift is in the order of one minute per month, utilizing a schedule of every 12th hour should assure that the product has less than one second's time difference (31 days * 24 hours = 744 hours, 60 seconds / 744 hours * 12 hours = 0.97 seconds). The default value will work well in most cases and allow for an ample timeout.
If the radio link between the product and the time server is of poor quality, the value might have to be increased until reliable operation is obtained. It is important to note that a poor-quality link will negatively affect the performance of the time synchronization as it relies on low latency communication.



4.16.4 Set maximum accepted time difference

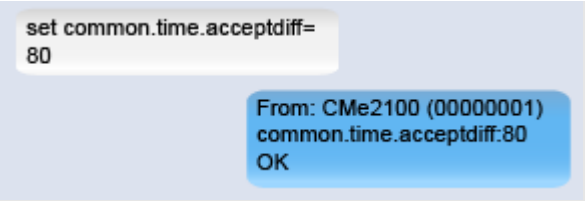
To set the maximum accepted time difference the CMe2100/CMi2110/CMi2130 is allowed to have without adjusting its time:

- Send an SMS with the command *set common.time.acceptdiff=[maximum accepted time*

difference] to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the maximum accepted time difference has been set.

Variable	Explanation	Settings
Maximum accepted time difference	The maximum number of seconds the time of the CMe2100/CMi2110/CMi2130 is allowed differ from the time server before performing a time synchronization.	0-86400

Table 32: Maximum accepted time difference



4.17 Configure network settings

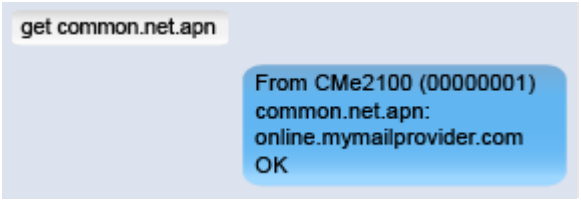
Purpose

For the product to be able to connect to the mobile network, an access point name (APN) is needed. The product is by default running auto APN settings, so it will be detected and configured automatically. If the CMe2100/CMi2110/CMi2130 is unable to use the mobile network, you should verify that an APN has been set. This section provides information on how to set the APN manually. To learn more about the product network settings, see section 5.4.5 (Network settings).

4.17.1 Check APN settings

To check the APN set for the CMe2100/CMi2110/CMi2130:

- Send an SMS with the command *get common.net.apn* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS presenting the APN set.

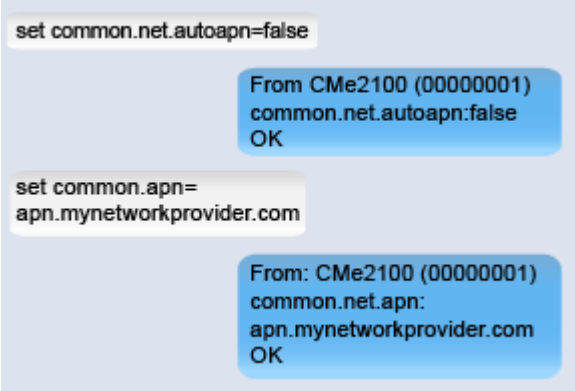


4.17.2 Set the APN manually

To set the APN manually:

- Send an SMS with the command *set common.net.autoapn=false* to disable automatic APN assignment. The product will respond with an SMS confirming the action.
- Send an SMS with the command *set common.net.apn=[APN]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the APN has been set.

Variable	Explanation	Settings
APN	APN information of your e-mail provider.	Valid APN



4.18 Change radio access technology (Only applicable for CMe2100 LTE)

Send the command set common.rat.mode=<param> to the CMe2100. The product will respond with an SMS confirming that the network mode has been changed.

Change radio access technology	There are different modes to be used, Elvaco recommend using ALL (default), then the module will use the best possible mode. In very special case, the CMe2100LTE can be locked to different radio access technologies. GSM = 2G UMTS = 3G LTE = 4G GSM_UMTS = 2G,3G GSM_LTE = 2G, 4G UMTS_LTE = 3G, 4G ALL = 2G,3G,4G	GSM,UMTS,GSM_UMTS,LTE, UMTS_LTE, GSM_UMTS, ALL

4.19 Request an On Demand Report

Purpose

The On Demand Report can be used to perform a meter readout and deliver a report instantaneously, without having to wait for the next scheduled readout cycle. The On Demand Report will contain the momentaneous values of all installed meter, and be sent to all default recipients of a selected protocol. It is also possible to request an On Demand Report for chosen meters only. For more information about the On-Demand Report, see section 5.7.3 (Momreport – Execute an On-Demand Report).

4.19.1 Request an On Demand Report for all meters

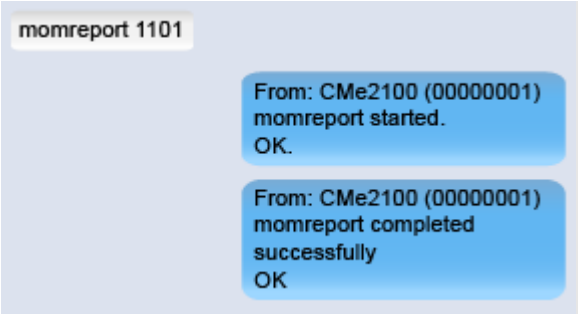
To request an On Demand Report for all installed meters:

- Send an SMS with the command *momreport [template]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the On Demand Report has started. An additional SMS will be sent when the report has been delivered.

Variable	Explanation	Settings

Template	The number of a selected report template. The template will determine the protocol by which the On Demand Report will be delivered. For example, choosing 1101 (e-mail template) will have the On Demand Report delivered by e-mail. All templates are listed in section 5.13 (Report templates). For more information, please visit the Elvaco website.	Valid report template number.

Table 33: On Demand Report for all meters



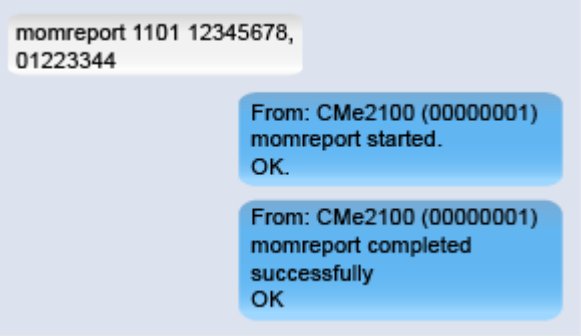
4.19.2 Request an On Demand Report for selected meters

To request an On Demand Report for selected meters only:

- Send an SMS with the command *momreport [template] [meter list]* to the product. The product will send an SMS confirming that the On Demand Report has started. An additional SMS will be sent when the report has been delivered.

Variable	Explanation	Settings
Template	The number of a selected report template. The template will determine the protocol by which the On Demand Report will be delivered. For example, choosing 1101 (e-mail template) will have the On Demand Report delivered by e-mail. All templates are listed in section 5.13 (Report templates). For more information, please visit the Elvaco website.	Valid template number
Meter list	The secondary addresses of all meters that will be included in the Moment Report.	8-digit numbers, separated by comma.

Table 34: On Demand Report for selected meters



4.20 Enable security features

Purpose

The CMe2100/CMi2110/CMi2130 offers a set of security features, including setting credentials to access different operations and adding lists of trusted clients that are able to access the product. For more

information about the product security settings, see section 5.4.4 (Security settings).

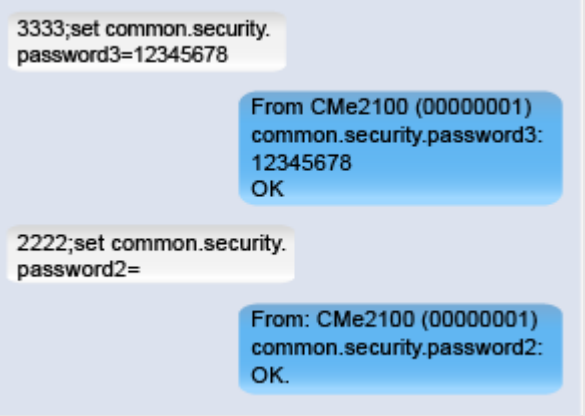
4.20.1 Set passwords for security levels

Each operation of the CMe2100/CMi2110/CMi2130 corresponds to a security level (listed in the Administration Reference). To set the credentials to perform an operation of a certain security level:

- Send the command *[current password];set common.security.password[level]=[new password]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that a new password has been set for that security level.

Variable	Explanation	Settings
Current password	The current password needs to be included in the command in order to set a new one. By default, the following passwords are used for the CMe2100/CMi2110/CMi2130: 1111 (level 1), 2222 (level 2) and 3333 (level 3).	Current password corresponding to the selected security level.
Level	The security level to be configured. There are three different security levels available.	1,2,3
New password	The password that will be used to access operations of the specific security level.	0-8 characters. By setting the password to blank, no password will be used for the corresponding security level.

Table 35: Credentials for different security levels



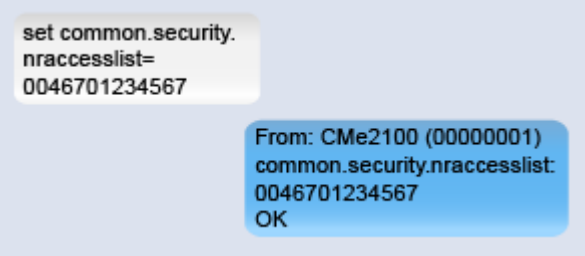
4.20.2 Add a list of trusted phone numbers

By adding a list of trusted phone numbers, the users that are allowed to access the CMe2100/CMi2110/CMi2130 can be limited to the ones represented on that list. To add a list of trusted phone numbers:

- Send the command *set common.security.nraccesslist=[phone numbers]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that a list of trusted phone numbers has been set.

Variable	Explanation	Settings
Phone numbers	Phone numbers able to access the CMe2100/CMi2110/CMi2130.	List of valid phone numbers, separated by comma. Leaving the field blank will remove all currently trusted phone numbers from the list.

Table 36: List of trusted phone numbers



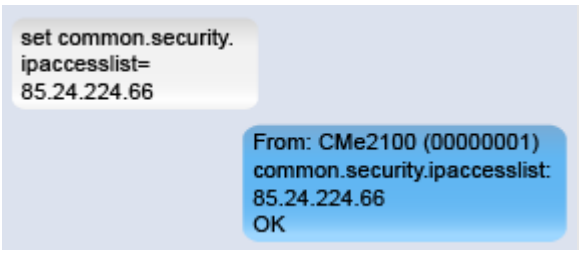
4.20.3 Add a list of trusted IP addresses

By adding a list of trusted IP addresses, the users that are allowed to access the CMe2100/CMi2110/CMi2130 can be limited to the ones represented on that list. To add a list of trusted IP addresses:

- Send the command *set common.security.ipaccesslist=[IP addresses]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that a list of trusted IP addresses has been set.

Variable	Explanation	Settings
IP addresses	IP addresses able to access the CMe2100/CMi2110/CMi2130.	A list of valid IP addresses, separated by comma. Leaving the field blank will remove all currently trusted IP addresses from the list.

Table 37: List of trusted IP addresses



4.21 Configure M-Bus settings

Purpose

When configuring the M-Bus settings used by the CMe2100/CMi2110/CMi2130, all the meters connected via M-Bus will be affected. Such settings for example include: the addressing mode, the baud rate and the way failed M-Bus requests are handled. To learn more about configurable M-Bus settings for the CMe2100/CMi2110/CMi2130, see section 5.4.6 (M-Bus settings).

4.21.1 Set the way meters are addressed

Setting the addressing mode will determine the way the CMe2100/CMi2110/CMi2130 addresses meters on the M-Bus. As previously mentioned, there are three different addressing modes available: primary addressing, secondary addressing and enhanced secondary addressing (for wireless meters only).

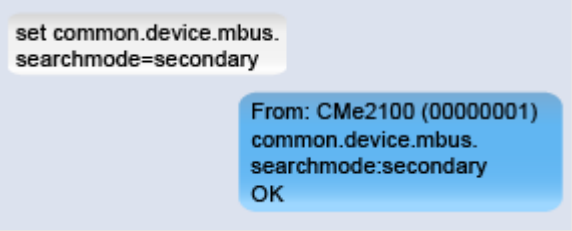
To set the M-Bus addressing mode:

- Send the command *set common.device.mbus.searchmode=[addressing mode]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the addressing mode has been set.

It is highly recommended that the secondary addressing mode is used for Wired M-Bus, since it will make sure that duplicated addresses avoided. The M-Bus addressing mode will be set to secondary by default for CMe2100/CMi2110/CMi2130.

Variable	Explanation	Settings
Addressing mode	The way meters are addressed on the M-Bus.	Primary, secondary, esecondary

Table 38: Set the addressing mode used on the M-Bus



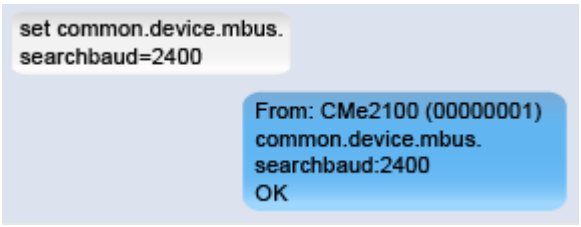
4.21.2 Set the baud rate used on the M-Bus

The baud rate determines the speed of communication used on the M-Bus. To set the M-Bus baud rate:

- Send the command *device.mbus.searchbaud=[baud rate]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming the operation.

Variable	Explanation	Settings
Baud rate	The speed of communication on the M-Bus.	2400,9600

Table 39: Set the baud rate used on the M-Bus



4.21.3 Configure M-Bus time and retry settings

The time and retry settings determine how the CMe2100/CMi2110/CMi2130 will act in different scenarios, for example when a collision has been detected on the M-Bus. The default settings will only have to be configured in very rare cases.

To configure a time and retry setting for CMe2100/CMi2110/CMi2130:

- Send the command *set common.[command]=[setting]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming the change of settings.

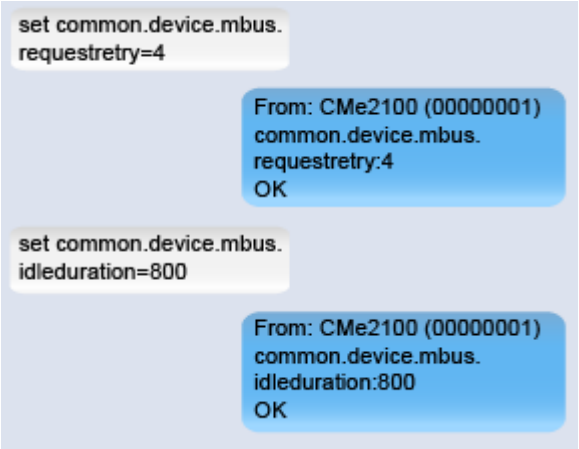
Variable	Explanation	Settings
Command	Select a command from Table 41, corresponding to the time/retry setting option you wish to configure.	Arbitrary command from Table 41.
Setting	Select a settings value from Table 41, corresponding to the command chosen.	An arbitrary setting from Table 41.

Table 40: Set the time and retry settings

Variable	Explanation	Settings	Command
Recovery time	The number of milliseconds the CMe2100/CMi2110/CMi2130 will wait after detecting a collision on the M-Bus before making another attempt.	A number between 0 and 15000	*device.mbus.busrecoverytime*
Request	The number of milliseconds the	A number between	*device.mbus.idleduration*

idle time	CMe2100/CMi2110/CMi2130 will wait between making two requests on the M-Bus.	500 and 15000	
Response timeout	The number of milliseconds the CMe2100/CMi2110/CMi2130 will wait for a response when making a request on the M-Bus. The variable is automatically set to match the baud rate used.	A number between 0 and 15000	*device.mbus.responsetimeout*
Request retry	The maximum number of retries the CMe2100/CMi2110/CMi2130 will perform when making a request on the M-Bus.	A number between 0 and 10	*device.mbus.requestretry*

Table 41: Time and retry variables



4.21.4 Configure M-Bus multi telegram settings

The M-Bus multi telegram settings determine the maximum amount of telegrams received by the CMe2100/CMi2110/CMi2130 for each meter readout. By setting a multi telegram read limit, the product will receive a maximum of that many telegrams, regardless of if a meter is trying to send additional ones. Is it also possible to have the CMe2100/CMi2110/CMi2130 to auto detect the amount of telegram the meter is about to send, and read all possible telegrams from the meter.

To configure the multi-telegram settings:

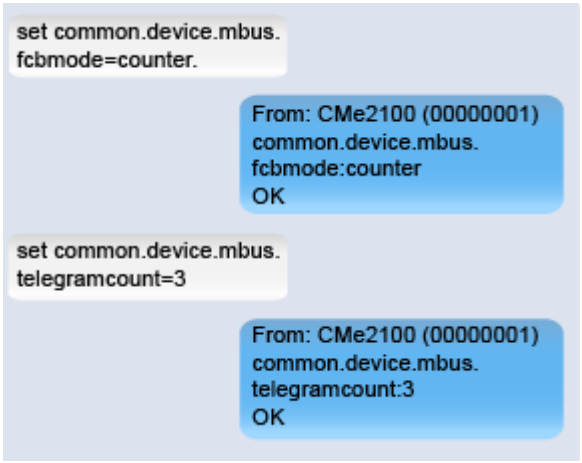
- By default, the CMe2100/CMi2110/CMi2130 will only read one telegram per readout. By setting the FCB bit, this value can be configured. It is done by sending the command *set common.device.mbus.fcbmode=[multi telegram mode]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the FCB bit has been set.
- Send the command *set common.device.mbus.telegramcount=[amount of telegrams]* to the CMe2100/ CMi21xx to set the multi telegram read limit. The product will respond with an SMS confirming that the multi telegram read limit has been set.

The FCB bit needs to be set to “counter” to be able to configure the multi telegram read limit.

Variable	Explanation	Settings
Multi telegram mode	The “off” setting will have the CMe2100/CMi2110/CMi2130 read one telegram (the first) per readout only. By setting the multi telegram mode to “auto”, all available telegrams will be read. To set a multi telegram read limit manually, set the mode to “counter”.	off, auto, counter

Amount of telegrams	The maximum amount of telegrams read for each meter. The settings only apply if the FCB bit is set to “counter”	A number between 0 and 255.

Table 42: Multi telegram settings



4.22 Access M-Bus from a master device

Purpose

The Transparent M-Bus service enables a master device to communicate directly with meters on the M-Bus. It might for example be used in case of a debug or software update purposes. There are two different transparent M-Bus service available, Transparent M-Bus over TCP/IP and Transparent M-Bus over GSM. To learn more about the Transparent M-Bus services, see sections 5.4.1 (Transparent M-Bus GSM and console GSM settings) and 5.4.2 (Transparent M-Bus TCP settings).

The SIM card used in the CMe2100/CMi2110/CMi2130 needs to have been assigned a public IP address for the Transparent M-Bus service to be able to connect to the product.

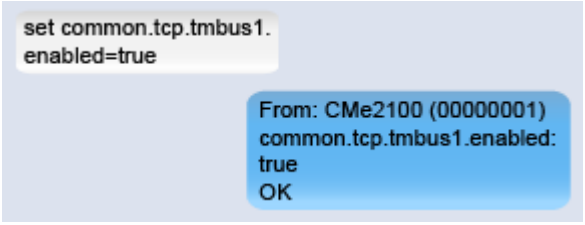
4.22.1 Enable the Transparent M-Bus TCP/IP services

To enable the Transparent M-Bus TCP/IP services:

- Send the command *set common.tcp.tmbus[id].enabled=true* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the Transparent M-Bus service has been enabled.

Variable	Explanation	Settings
Id	The Transparent M-Bus TCP/IP service to be enabled. There are two such services available.	1, 2

Table 43: Enable Transparent M-Bus over TCP/IP



4.22.2 Configure Transparent M-Bus TCP/IP settings

To configure the Transparent M-Bus TCP/IP settings:

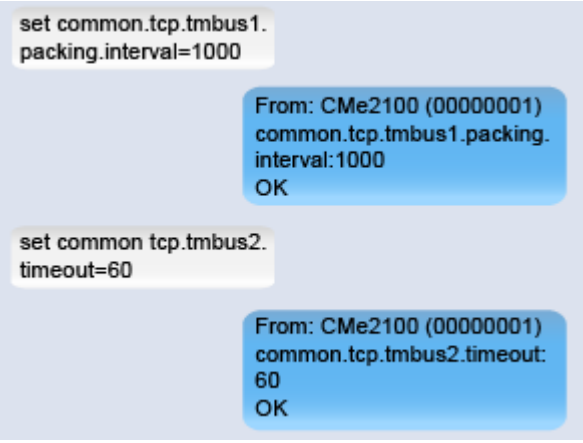
- Send the command *set common.[command]=[setting]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming the change of settings.

Variable	Explanation	Settings
Command	Select a command from Table 45, corresponding to the Transparent M-Bus over TCP/IP setting you wish to configure.	Arbitrary command from Table 45.
Setting	Select a valid value from Table 45, corresponding to the command chosen.	An arbitrary setting from Table 45

Table 44: Configure the Transparent M-Bus over TCP/IP settings

Variable	Explanation	Settings	Command
Baud rate	The speed of communication used for the Transparent M-Bus TCP/IP service	2400, 9600	*tcp.tmbus1.baud* *tcp.tmbus2.baud*
Packing interval	The number of milliseconds of inactivity that needs to pass on the M-Bus line before the Transparent M-Bus service will transfer data.	A number between 0 and 65535	*tcp.tmbus1.packing.interval* *tcp.tmbus2.packing.interval*
TCP/IP port	The port that will be used by the Transparent M-Bus service to connect to the CMe2100/CMi2110/CMi2130.	A number between 0 and 65535	*tcp.tmbus1.port* *tcp.tmbus2.port*
Idle timeout	The numbers of seconds of inactivity that needs to pass before the connection with the Transparent M-Bus TCP/IP service is closed.	A number between 0 and 86400	*tcp.tmbus1.timeout* *tcp.tmbus2.timeout*

Table 45: Transparent M-Bus over TCP/IP configuration options



4.22.3 Configure the Transparent M-Bus GSM service (Only applicable for CMe2100 gen.3, CMi2110, CMi2130)

The Transparent M-Bus GSM service will be enabled by default in the CMe2100/CMi21xx. To configure the Transparent M-Bus GSM settings:

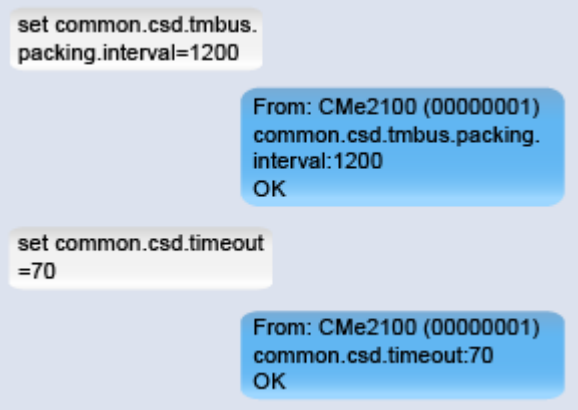
- Send the command *set common.[command]=[setting]* to the CMe2100/CMi21xx. The product will respond with an SMS confirming that the settings have been changed.

Variable	Explanation	Settings
Command	Select a command from Table 47, corresponding to the setting you wish to configure.	Arbitrary command from Table 47.
Setting	Select a valid value from Table 47, corresponding to the command chosen.	An arbitrary setting from Table 47

Table 46: Transparent M-Bus over GSM settings

Variable	Explanation	Settings	Command
Baud rate	The speed of communication used for the Transparent M-Bus GSM service	2400, 9600	*csd.tmbus.baud*
Packing interval	The number of milliseconds of inactivity that needs to pass on the M-Bus line before the Transparent M-Bus service will transfer data.	A number between 0 and 65535	*csd.tmbus.packing.interval*
Idle timeout	The numbers of seconds of inactivity that needs to pass on before the connection with the Transparent M-Bus GSM service is closed.	A number between 0 and 86400	*csd.timeout*

Table 47: Transparent M-Bus over GSM configuration options



4.23 Configure advanced Push Report settings

Purpose

There is a group of more advanced Push Report settings for the CMe2100/CMi2110/CMi2130. These include:

- The Value Period, which determines how far back in time the Metering Gateway will include values when compiling a Push Report.
- The Value Interval, which determines the time between each readout included in the Push Report.
- The timeout value, which, for each protocol, determines how long a Push Report transmit attempt may linger before timing out.

To learn more about configurable Push Report settings, go to section 5.7.2 (Report1,…,report5 – Report commands).

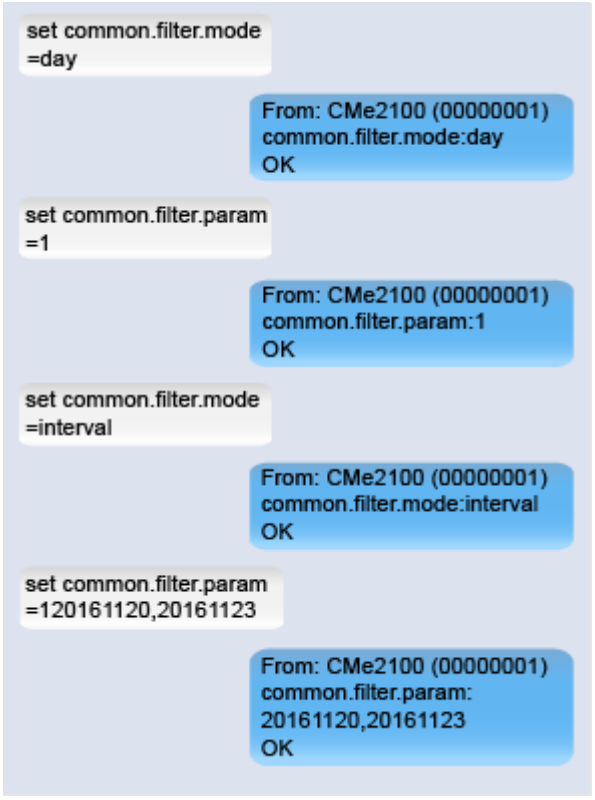
4.23.1 Configure the Value Period

The Value Period is used to set how far back in time the CMe2100/CMi2110/CMi2130 will look to include meter values in the Push Reports. It is configured by setting two variables, filter.mode and filter.param. To configure the Value Period of the CMe2100/CMi2110/CMi2130:

- Send the command *set common.filter.mode=[time unit]* to the CMe2100/CMi2110/CMi2130. This will set the time unit used by the product when determining how far back in time to include meter values in the Push Reports.
- Send the command *set common.filter.param=[time value]* to the CMe2100/CMi2110/CMi2130. This will set the number of time units (set by filter.mode) the product will go back in time to include meter values in the Push Reports.

Variable	Explanation	Settings
Time unit	The time unit used by the CMe2100/CMi2110/CMi2130 to determine how far back in time to include meter values in the Push Reports. By using the “auto” setting, all meter values read since the last Push Report will be included. Using “Interval” will let the user set a start date and an end date for meter values included in the Push Report.	minute, hour, day, month, interval, auto
Time value	The amount of time units (set by filter.mode) the CMe2100/CMi2110/CMi2130 will go back in time to include meter values in the Push Report. For example, setting filter.param to “1” when filter.mode is set to “hour” will include all meter values from the last hour in the Push Report. If filter.mode is set to “interval”, meter values from a specific time period, set by a start and an end date can be included in the Push Report.	An arbitrary number of time units or a start date and an end date.

Table 48: Set the Value Period



4.23.2 Configure the Value Interval

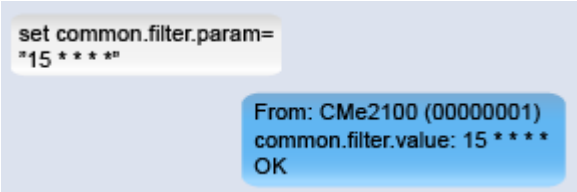
The Value Interval determines the time between each meter value included in the Push Reports and is set using cron patterns. To learn more about how to use cron patterns, see section 5.29 (Customize service and job schedules).

To configure the value interval of the CMe2100/CMi2110/CMi2130:

- Send the command *set common.filter.value="[cron pattern]"* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the value interval has been set.

Variable	Explanation	Settings
Cron pattern	Sets the time between each meter value included in the Push Reports.	A valid cron pattern. Each star needs to be separated by a blank space.

Table 49: Set the Value Interval



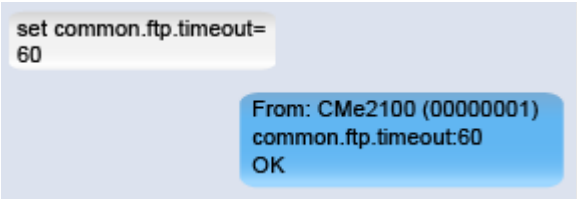
4.23.3 Configure the Push Report timeout settings

For FTP and e-mail Push Reports, a timeout value can be set. It determines how long a Push Report attempt may linger before marked as failed. To configure the Push Report timeout settings:

- Send the command *set common.ftp.timeout=[timeout value]* to the CMe2100/CMi2110/CMi2130 to set the timeout for FTP Push Reports. The product will respond with an SMS confirming that the timeout settings have been changed.
- Send the command *common.email.timeout=[timeout value]* to the CMe2100/CMi2110/CMi2130 to set the timeout for email Push Reports. The product will respond with an SMS confirming that the timeout settings have been changed.

Variable	Explanation	Settings
Timeout value	The maximum number of seconds a Push Report attempt may linger before interrupted.	A number between 0 and 86400

Table 50: Push Report timeout settings



4.24 Configure scheduled job retry settings

Purpose

The job retry settings determine how the CMe2100/CMi2110/CMi2130 will perform retries for scheduled jobs, for example a meter readout, if the first attempt should fail. These include the maximum number of times the product will attempt a job, and the time between each such attempt.

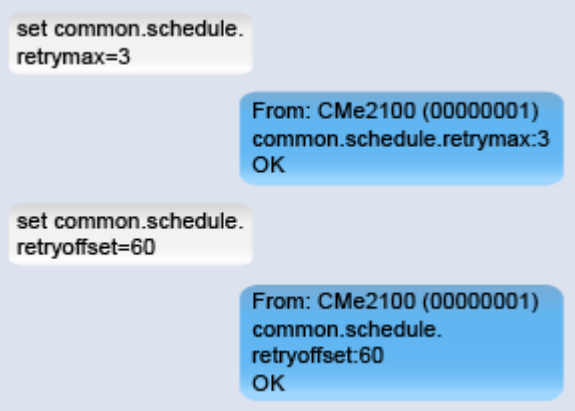
4.24.1 Configure retry settings for scheduled

To configure the retry settings for scheduled jobs:

- Send the command *set common.schedule.retrymax=[maximum number of retries]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the maximum number of retries has been set.
- Send the command *set common.schedule.retryoffset=[time between retries]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the time between retries has been set.

Variable	Explanation	Settings
Maximum number of retries	The maximum number of retries the CMe2100/CMi2110/CMi2130 will perform for a scheduled task.	An integer between 0 and 10.
Retry offset	The time in seconds between each retry attempt.	A number between 0 and 86400

Table 51: Scheduled job retry settings



4.25 Access the CMe2100/CMi2110/CMi2130 through a console application

Purpose

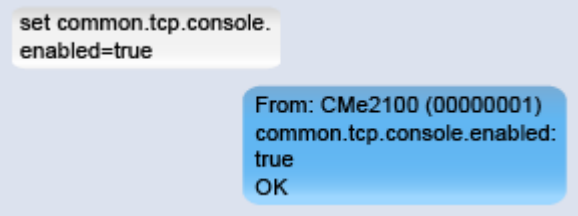
The CMe2100/CMi2110/CMi2130 can be accessed through a console application, i.e. by using a command-line interface. This service normally only used in case of troubleshooting or for advanced operations. To learn more about the console application service, see section 5.4.3 (Console TCP settings).

The SIM card used in the CMe2100/CMi2110/CMi2130 needs to have been assigned a public IP address in order for the console application to connect to the product.

4.25.1 Enable the console application

To enable the console application:

- Send the command *set common.console.enabled=true* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the console application has been activated.



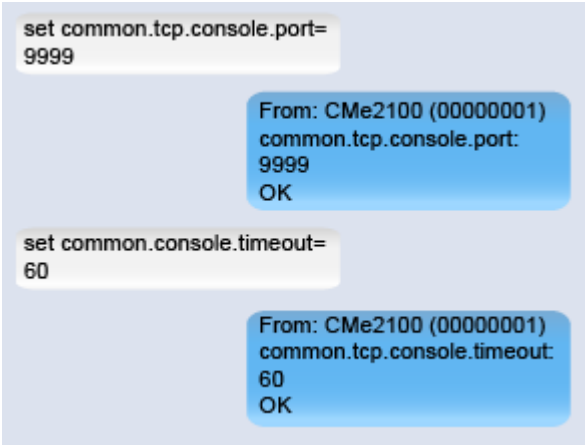
4.25.2 Configure the console application settings

To configure the console application settings:

- Send the command *set common.tcp.console.port=[port number]* to the CMe2100/CMi2110/CMi2130 to determine what port the console application will connect to. The product will respond with an SMS confirming that the port has been set.
- Send the command *set common.tcp.console.timeout=[timeout value]* to the CMe2100/CMi2110/CMi2130 to determine the timeout value for the console application. The product will respond with an SMS confirming that the timeout value has been set.

Variable	Explanation	Settings
Port number	The port number used by the console application to connect to the CMe2100/CMi2110/CMi2130.	An integer between 0 and 65635
Timeout value	The time in seconds of inactivity that needs to pass before a connection with the console application is closed.	A number between 0-86400

Table 52: TCP console application settings



4.26 Request a meter readout and Push Report manually

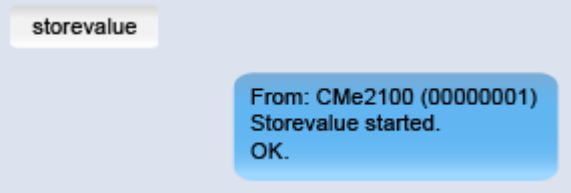
Purpose

With the *storevalue* and *report* commands, meter readouts can be performed and selected Push Reports can be executed manually.

4.26.1 Perform a manual meter readout

To perform a manual meter readout:

- Send the command *storevalue* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that all installed meters will be read.



4.26.2 Run a Push report manually

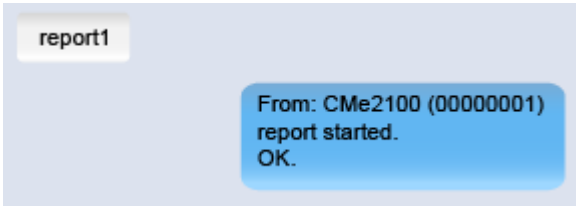
Through a manual request, a user can customize a single Push Report, without affecting the settings of future Push Reports. To learn more about configurable settings for Push Reports, see section 5.7.2 (Report1,…,report5 – Report commands).

To run a Push report manually:

- Send the command *report[report id] [schedule] [template id]* to the CMe2100/CMi2110/CMi2130. The product will send an SMS, confirming that the report has started.
- A Push Report will be delivered to the default recipients of the selected protocol.

Variable	Explanation	Settings
Report id	The id of the Push Report. There are five different Push Reports available.	1,2,3,4,5
Schedule	Setting this field will determine the values included in the Push Report. However, it will not make any changes actual Push report schedule.	An arbitrary value from Table 12
Template id	The desired template id for the requested Push Report. The template will determine by which protocol the Push Report will be delivered. For example, selecting 1101 (e-mail template) will have the Push Report delivered by e-mail. All available templates are listed in section 5.13 (Report templates). To learn more about the templates, please visit the Elvaco website, http://www.elvaco.com/download.	Valid template id number

Table 53: Manual Push Reports



4.27 Configure identity settings

Purpose

The identity set for the CMe2100/CMi2110/CMi2130 will be included in all Push Reports sent by the product and can be chosen arbitrarily. Similarly, branding settings are used to include various information in Push Reports, for example telephone number and address. The localization settings determine the language and the separator used for decimal numbers.

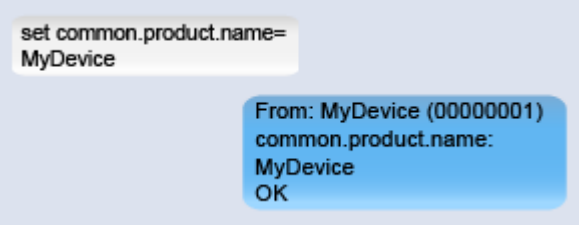
4.27.1 Customize the CMe2100/CMi2110/CMi2130 identity settings

To set the identity of the CMe2100/CMi2110/CMi2130:

- Send the command *set common.product.name=[product name]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS, confirming that its name has been changed.

Variable	Explanation	Settings
Product name	The product name of CMe2100/CMi2110/CMi2130, which will be included in all Push reports.	Arbitrary text.

Table 54: Product name



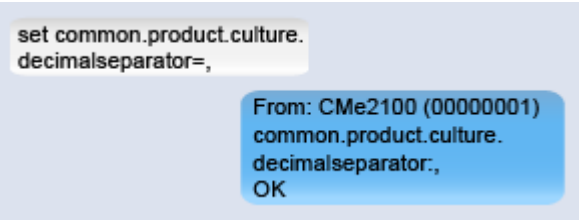
4.27.2 Configure localization settings for Push Reports

To set the localization settings of the CMe2100/CMi2110/CMi2130:

- Send the command *set common.product.culture=[language]* to set the language for the product. The product will respond with an SMS confirming that the language has been set.
- Send the command *set common.product.culture.decimalseparator=[decimal separator]* to set which character the CMe2100/CMi2110/CMi2130 should use for decimal numbers. The product will respond with an SMS confirming that the decimal separator has been set.

Variable	Explanation	Settings
Language	The language used by the CMe2100/CMi2110/CMi2130	en
Decimal separator	The separator used for decimal numbers.	Arbitrary character

Table 55: Localization settings of the product



4.27.3 Configure branding settings

The branding settings let the user include addressing information Push Reports, for example address and telephone number. To learn more about the branding settings of the CMe2100/CMi2110/CMi2130, see section 5.4.15 (Branding settings).

To set the branding information that will be included in Push Reports:

- Send the command *set common.[branding information]=[branding value]* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS confirming that the settings have been changed.

Variable	Explanation	Settings
Branding	The type of information to be included or configured	Arbitrary command from

information	for the Push Reports.	Table 58.
Branding value	The value that will be used for the selected branding information.	Arbitrary settings value of Table 58

Table 56: Configuration of branding settings

Variable	Explanation	Settings	Command
Company name	The name of the company.	Arbitrary text inside of quotation marks.	*branding.company*
Company address	The address of the company.	Arbitrary text inside of quotation marks.	*branding.address1* *branding.address2* *branding.address3* *branding.address4*
Company telephone number	The telephone number of the company.	Arbitrary telephone number.	*branding.tel1* *branding.tel2*
Company e-mail address	The e-mail address of the company.	Arbitrary e-mail address.	*branding.email*
Company logo	The logo used by the company.	URL to the company logo.	*branding.logourl*
Company website	The website of the company.	Link to company website.	*branding.web*

Table 57: Branding configuration options

4.28 Perform a reboot of the product

Purpose

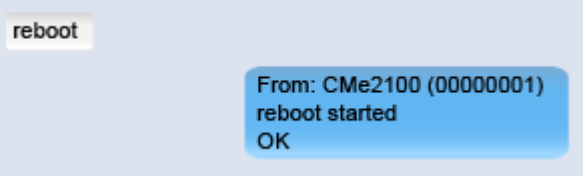
In rare cases, e.g. in case of troubleshooting, a reboot might have to be performed.

4.28.1 Reboot the product

To perform a reboot:

- Send the command *reboot* to the CMe2100/CMi2110/CMi2130. The product will respond with an

SMS, confirming that the reboot has started.



4.29 Reset the product to factory default settings

Purpose

When performing a factory reset of the CMe2100/CMi2110/CMi2130, all settings will be reset to factory default and the meter value database will be cleared.

4.29.1 Perform a factory reset

To perform a factory reset:

- Send the command 3333;*factoryreset* to the CMe2100/CMi2110/CMi2130. The product will respond with an SMS, confirming that the factory reset has started.

4.30 Customize service and job schedules

Purpose

For scheduled jobs, cron patterns can be used to set the time schedule. By setting up to five different time variables, each one represented by a star, the user can customize the frequency by which a job should be performed.

4.30.1 Specify schedules using cron patterns

Replace each star in the cron pattern with a number to set a specific job execution schedule. The meaning of each star is illustrated in Figure 1.

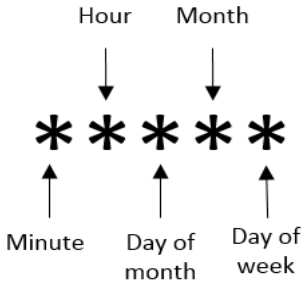


Figure 1: Cron pattern

The "/" character is used to set periodic values, i.e. schedule a job with a recurrent time interval. The "?" character is used to generate a random value. Lastly, using the "|" character allows to combine several cron patterns. An example list with selected cron patterns is presented in Table 58.

Cron pattern	Description
15 * * * *	Schedule a job 15 minutes past every hour, i.e. 00:15, 01:15, 02:15 etc.
*/15 * * * *	Schedule a job every 15th minute, i.e. 00:00, 00:15, 00:30, etc.

* * * * *	Schedule a job every minute, i.e. 00:01, 00:02, 00:03, etc.
* 12 * * mon	Schedule a job every minute during the 12th hour of every Monday.
* 12 16 * mon	Schedule a job every minute during the 12th hour of every Monday, if the day is the 16th of the month.
59 11 * * 1,2,3,4,5	Schedule a job 11:59 on Monday, Tuesday, Wednesday, Thursday and Friday.
59 11 * * 1-5	Schedule a job 11:59 on Monday, Tuesday, Wednesday, Thursday and Friday.
*/15 9-17 * * *	Schedule a job every 15th minute between the 9th and the 17th hour of the day, i.e. 09:00, 09:15, 09:30, etc.
* 12 10-16/2 * *	Schedule a job every minute during the 12th hour of the day, if the day is the 10th, the 12th, the 14th or the 16th of the month.
* 12 1-15,17,20-25 * *	Schedule a job every minute during the 12th hour of the day, if the day is between the 1st and the 15th, the 17th or between the 20th and 25th day of the month.
0 5 * * *|8 10 * * *|22 17 * * *	Schedule a job every day at 05:00, 10:08 and 17:22.
?1-30 0 * * *	Schedule a job at a random chosen minute during the first 30 minutes of every hour.

Table 58: Cron pattern examples

5 Administration reference

5.1 Purpose

Listed in this chapter are all the available commands and configuration option for CMe2100/CMi2110/CMi2130.

5.2 Complete command list

Below, all available product commands for CMe2100/CMi2110/CMi2130 are listed

Command	Description	Security level
cfg	Change configurations that have already been set.	1
device	Send command to connected meters	1
factoryreset	Restore all settings to factory default	3
fwupdate	Update product firmware	2
get	Read a configuration value	1
install	Search for and install meters	1
login	Login in through console or SMS mode	1
maintenance	Maintenance task	1
momreport	Read momentary values from installed meters and send report	1
qset	Quick set configuration	1
reboot	Reboot product	1
report	User definable report.	1
report1	User definable report 1	1
report2	User definable report 2	1
report3	User definable report 3	1
report4	User definable report 4	1
report5	User definable report 5	1
set	Set a configuration key	1
sch	Schedule a command	1
status	Get status information from the product	1
storevalue	Read and store values of installed meters	1
sysreport	Order a system report	1
logreport	Order a log report	1
sync	Synchronize configuration with server	2
timesync	Synchronize time settings with internet timeserver	1

5.3 Complete event list

Below, a complete list of all events that can be triggered in the product are listed. On occurrence, all events are saved and displayed in the system log.

Event	Description	Security level
fwupdateevent	Executed on product firmware update and sends report.	1
rebootevent	Executed on unexpected reboot and sends report.	1
swupdateevent	Executed on product software update and sends report.	1
swupdatesynchandler	Executed on product software update and starts configuration synchronization process.	1

5.4 Configurable settings

In this chapter, all configurable settings of the product are listed and described. The default value used for each setting is also listed.

5.4.1 Transparent M-Bus GSM and console GSM settings (Not applicable for CMe2100 LTE)

The following parameters are used to configure the GSM settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
csd.timeout	Idle timeout. Time in seconds before hanging up inactive call.	60	Numeric: 0-86400	1
csd.tmbus.baud	M-Bus baud rate for Transparent M-Bus service.	2400	Numeric: 2400, 9600	1
csd.tmbus.packing.interval	Packing interval. Time of inactivity in milliseconds that needs to pass on the M-Bus line before the product transmits information received to the mobile network.	1000	Numeric: 0-65535	1
csd.tmbus.packing.interval	By setting the packing mode to “mbus”, the CMe2100/CMi2110/CMi2130 will make sure that all data transmitted follows the M-Bus protocol. If setting the packing mode to “transparent” the data will be transmitted to the M-Bus without such a control.	mbus	Enumeration: mbus, transparent	1
csd.mode	GSM data service mode. The product supports Transparent M-Bus mode and console application mode.	Tmbus	Enumeration: tmbus, console	1
csd.enabled	Status of GSM data service. Can be activated or deactivated.	True	Boolean: true, false	1

csd.speed	GSM bearer control, i.e. the transmission speed on the GSM network. 0 = Autobauding 1 = 300 bps (V.21) 2 = 1200 bps (V.22) 4 = 2400 bps (V.22bis) 6 = 4800 bps (V.32) 7 = 9600 bps (V.32) 14 = 14400 bps (V.34) 65 = 300 bps (V.110) 66 = 1200 bps (V.110) 68 = 2400 bps (V.110) 70 = 4800 bps (V.110) 71 = 9600 bps (V.110) 75 = 14400 bps (V.110)	0	Numeric: 0, 1, 2, 4, 6, 7, 14, 65, 66, 68, 70, 71, 75	1

5.4.2 Transparent M-Bus TCP settings

The following parameters are used to configure the Transparent M-Bus TCP settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
tcp.tmbus1.enabled	Status of Transparent M-Bus TCP service 1.	False	Boolean: true, false	1
tcp.tmbus1.baud	Baud rate of Transparent M-Bus TCP service 1.	2400	Numeric: 2400, 9600	1
tcp.tmbus1.packing.interval	Packing interval for Transparent M-Bus TCP service 1. Time of inactivity in milliseconds that needs to pass on the M-Bus line before the product transmits information.	1000	Numeric: 0-65535	1
tcp.tmbus1.packing.mode	By setting the packing mode to “mbus”, the CMe2100/CMi2110/CMi2130 will make sure that all data transmitted follows the M-Bus protocol. If setting the packing mode to “transparent” the data will be transmitted to the M-Bus without such a control.	mbus	Enumeration: mbus, transparent	1
tcp.tmbus1.port	The port used for Transparent M-Bus TCP service 1.	300	Numeric: 0-65535	1
tcp.tmbus1.timeout	Idle timeout for Transparent M-Bus TCP service 1. The time of inactivity in seconds that needs to pass before the TCP connection is closed.	60	Numeric: 0-86400	1

tcp.tmbus2.enabled	Status of Transparent M-Bus TCP service 2. Can be activated or deactivated.	False	Boolean: true, false	1
tcp.tmbus2.baud	Baud rate of Transparent M-Bus TCP service 2.	2400	Numeric: 2400, 9600	1
tcp.tmbus2.packing.interval	Packing interval for Transparent M-Bus TCP service 2. Time of inactivity in milliseconds that needs to pass on the M-Bus line before the product transmits information received.	1000	Numeric: 0-65535	1
tcp.tmbus2.packing.mode	By setting the packing mode to “mbus”, the CMe2100/CMi2110/CMi2130 will make sure that all data transmitted follows the M-Bus protocol. If setting the packing mode to “transparent” the data will be transmitted to the M-Bus without such a control.	mbus	Enumeration: mbus, transparent	1
tcp.tmbus2.port	The port used for Transparent M-Bus TCP service 2.	2400	Numeric: 0-65535	1
tcp.tmbus2.timeout	Idle timeout for Transparent M-Bus TCP service 1. The time of inactivity in seconds that needs to pass before the TCP connection is closed.	60	Numeric: 0-86400	1

5.4.3 Console TCP settings

The following parameters are used to configure the console TCP settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
tcp.console.enabled	Status of TCP Console Service. Can be activated or deactivated.	False	Boolean: true, false	1
tcp.console.port	Port used for TCP Console Service.	9999	Numeric: 0-65535	1
tcp.console.timeout	Idle timeout for the TCP console service 1. The time of inactivity in seconds that needs to pass before the TCP connection is closed.	60	Numeric: 0-86400	1

5.4.4 Security settings

The following parameters are used to configure the security settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
security.nraccesslist	List of phone numbers that will be able to access the product via SMS and GSM.	Blank	Enumeration: List of phone numbers	1
security.ipaccesslist	List of IP addresses that will be able to access the product via the TCP services.	Blank	Enumeration: List of IP addresses	1
security.password1	Password to access level 1 features of the products.	Blank	Text: 0-8 characters	1
security.password2	Password to access level 2 features of the products.	2222	Text: 0-8 characters	2
security.password3	Password to access level 2 features of the products.	3333	Text: 0-8 characters	3

5.4.5 Network settings

The following parameters are used to configure the network settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
net.autosmtp	Auto detection of SMTP server.	true	Boolean: true, false	1
net.autoapn	Auto detection of APN settings to be used.	true	Boolean: true, false	1
net.apn	APN settings to be used by the CMe2100/CMi2110/CMi2130. Setting this parameter will disable the automatic detection of APN.	Blank	Text	1
net.user	APN user name. If APN auto detection is enabled, the username will be set automatically.	Blank	Text	1
net.password	APN password. If APN auto detection is enabled, the password will be set automatically.	Blank	Text	1
net.dns1	DNS server 1. If APN auto detection is enabled, it will be set automatically.	Blank	Text	1

net.dns2	DNS server 2. If APN auto detection is enabled, it will be set automatically.	Blank	Text	1
net.timeout	The time in seconds of inactivity before a network session is closed. Setting the parameter to zero will disable it. Only usable when running listening TCP services on public static IP addresses.	60	Numeric: 0-86400	1
net.cusd.enabled	Used to enable or disable unstructured network data. Must be enabled to be able to request SIM card credit balance information from the CMe2100/CMi2110/CMi2130.	false	Boolean: true, false	1

5.4.6 M-Bus settings

The following parameters are used to configure the M-Bus settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
device.mbus.searchmode	Sets the way meter are addressed on the M-Bus.	secondary, primary (second choice)	Enumeration: secondary, primary, esecondary	1
device.mbus.searchstart	The start address used by the CMe2100/CMi2110/CMi2130 when performing a primary meter search.	0	Numeric: 0-250	1
device.mbus.searchend	The end address used by the CMe2100/CMi2110/CMi2130 when performing a primary meter search.	250	Numeric: 0-250	1
device.mbus.searchidmask	Search identification mask when using the secondary addressing mode.	FFFFFFFF	8 character hex decimal format: 00000000-FFFFFFFF	2
device.mbus.esearchidmask	Search identification mask when using the enhanced secondary addressing mode.	FFFFFFFF	8 character hex decimal format: 00000000-FFFFFFFF	2
device.mbus.searchmanmask	Search manufacturer mask when using the secondary addressing mode	FFFF	4 character hex decimal format: 0000-FFFF	2

device.mbus.esearchmanmask	Search manufacturer mask when using the enhanced secondary addressing mode	FFFF	4 character hex decimal format: 0000-FFFF	2
device.mbus.searchgenmask	Search generation mask when using the secondary addressing mode	FF	2 character hex decimal format: 00-FF	2
device.mbus.esearchgenmask	Search generation mask when using the enhanced secondary addressing mode	FF	2 character hex decimal format: 00-FF	2
device.mbus.searchmedmask	Search medium mask when using the secondary addressing mode	FF	2 character hex decimal format: 00-FF	2
device.mbus.esearchmedmask	Search medium mask when using the enhanced secondary addressing mode	FF	2 character hex decimal format: 00-FF	2
device.mbus.searchbaud	The baud rate used when addressing meters on the M-Bus	2400	Enumeration: 2400, 9600	1
device.mbus.buswatch	Collision detection of meters	true	Boolean: true, false	2
device.mbus.recoverytime	Time in milliseconds before a reattempt after a collision has been detected on the M-Bus	3000	Numeric: 500-15000	2
device.mbus.idleduration	Time in milliseconds of inactivity that needs to pass on the M-Bus before a communication attempt is initiated.	700	Numeric: 500-15000	2
device.mbus.nkesleep	Time in milliseconds after SND_NKE has been sent that needs to pass before a new request	10000	Numeric: 500-15000	2
device.mbus.responsetimeout	Time in milliseconds that the CMe2100/CMi2110/CMi2130 will wait for a response after making a request on the M-Bus	300	Numeric: 0-15000	2
device.mbus.fcbmode	By enabling the FCB bit, meters will be read until no more data is found or the multi telegram read limit is reached	false	Boolean: true, false	2

device.mbus.telegramcount	Maximum number of telegrams that the CMe2100/CMi2110/CMi2130 will receive during a readout. Requires the FCB bit to be enabled	0	Numeric: 0-255	2
device.mbus.requestretry	Maximum number of retry attempts when making a request on the M-Bus	3	Numeric: 0-10	1
device.mbus.selectretry	Maximum number of retries when attempting to address a meter using the secondary addressing mode	3	Numeric: 0-10	1
device.mbus.maxdevices	Maximum number of meters that the CMe2100/CMi2110/CMi2130 will install. Setting the parameter to -1 will disable it	-1	Numeric: -1-250	1
device.mbus.clean	All previously installed meter will be cleared when performing a new meter installation	false	Boolean: True, false	1
device.mbus.keepstatus	No changes of status are made when running the installation command	false	Boolean: true, false	1
device.mbus.searchbusrecoverytime	Time in milliseconds of inactivity that needs to pass after a collision has been detected during a meter search before a new attempt is performed	700	Numeric: 500-15000	2
device.mbus.searchidleduration	The minimum number of milliseconds between two requests on the M-Bus when searching for meters	700	Numeric: 500-15000	2
device.mbus.searchnkesleep	Time in milliseconds after SNK_NKE has been sent before a new request is sent when searching for meters	10000	Numeric: 500-15000	2
device.mbus.searchresponsetimeout	The time in milliseconds the CMe2100/CMi2110/CMi2130 will wait for a response for a request when searching for meters	300	Numeric: 0-15000	2
device.mbus.searchrequestretry	Maximum number of retries when making a request on the M-Bus during the meter search process	0	Numeric: 0-10	1
device.mbus.searchselectretry	Maximum number of retries when selecting a meter during the meter search process	0	Numeric: 0-10	

device.command.runbeforesleep	Number of milliseconds the CMe2100/CMi2110/CMi2130 will wait before communicating on the M-Bus after performing a runbefore command	2500	Numeric: 0-15000	

5.4.7 SMS settings

The following parameters are used to configure the SMS settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
sms.response.mode	The response modes used by the CMe2100/CMi2110/CMi2130 inform about the status of requested actions	All	Enumeration: all, none, progress, error, success, login, source, invalid	1
sms.response	Makes the CMe2100/CMi2110/CMi2130 respond to commands sent by SMS	true	Boolean: true, false	1
sms.to	The SMS recipient list. The phone number on the list will receive all requested SMS Push Reports	Blank	List of phone numbers	1

5.4.8 E-mail settings

The following parameters are used to configure the e-mail settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
email.to	The e-mail recipient list. The addresses on the list will receive all requested e-mail Push Reports	Blank	List of e-mail addresses	1
email.cc	The e-mail copy recipient list. The addresses on the list will receive a copy of all requested e-mail Push Reports	Blank	List of e-mail addresses	1
email.bcc	The e-mail hidden copy recipient list. The addresses on the list will receive a hidden copy of all requested e-mail Push Reports	Blank	List of e-mail addresses	1
email.server	The SMTP server that will be used when sending e-mail Push Reports	Blank	Text	1

email.port	The port number that will be used when connecting to the SMTP server to send e-mail Push reports	25	0-65535	1
email.user	Username to be used when connecting to the SMTP server to send e-mail Push Reports	Blank	Text	1
email.password	Password to be used when connecting to the SMTP server to send e-mail Push Reports	Blank	Text	1
email.from	The e-mail address from which e-mail Push Reports will be sent.	Blank	Text	1
email.timeout	Time in milliseconds of inactivity that needs to pass before the connection with the SMTP server is closed. Setting the parameter to -1 will implement default settings	-1	Numeric: -1-86400	1
email.ssl	Enables SSL connection	False	Boolean: true, false	1

5.4.9 FTP settings

The following parameters are used to configure the FTP settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
ftp.server	The FTP server to which FTP Push Reports will be sent.	Blank	Text	1
ftp.port	The port used to connect to the FTP server when sending FTP Push Reports	21	Numeric: 0-65535	1
ftp.user	Username used when connecting to the FTP server to send FTP Push Reports	Blank	Text	1
ftp.password	Password used when connecting to the FTP server to send FTP Push Reports	Blank	Text	1
ftp.remotedir	Remote subdirectory to put files when delivering FTP Push Reports	Blank	Text. Front slash (/) used as separator of directories.	1

ftp.timeout	The time in milliseconds that needs to pass before connection with an FTP server is closed. Setting the parameter to -1 will use default settings	-1	Numeric: -1-86400	1
ftp.ssl	Enables SSL connection	False	Boolean: true, false	1
ftp.ssl.explicit	Enable explicit FTPS	False	Boolean: true, false	1

5.4.10 HTTP settings

The following parameters are used to configure the HTTP settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
http.url	The URL for the HTTP server where HTTP Push Reports will be sent	Blank	Text	1
http.user	The username used when connection to the HTTP server to send HTTP Push Reports	Blank	Text	1
http.password	The password used when connecting to the HTTP server to send HTTP Push Reports	Blank	Text	1
http.authmode	Enables HTTP server authentication mode, which will have the CMe2100/CMi2110/CMi2130 authenticate itself towards the server before sending a HTTP Push Report	None	Enumeration: none, basic	1
http.header	User definable headers to be sent along with HTTP requests. Each one must be separated by a comma	Blank	Text. <header name>=<header value>	1

5.4.11 Time settings

The following parameters are used to configure the time settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
time.mode	The type of time server to synchronize the product's time with.	NTP	Enumeration: NTP, daytime	1

time.utcoffset	The difference in hours from the Coordinated Universal Time	1	Numeric: -11-11	1
time.acceptdiff	The maximum number of seconds that the product is allowed to differ from the time synchronization server	60	0-86400	1
time.ntp.server	NTP server used by the CMe2100/CMi2110/CMi2130 to synchronize the time	Se.pool.ntp.org	Arbitrary server address	1
time.ntp.retry	The maximum number of retries the CMe2100/CMi2110/CMi2130 will perform when attempting to synchronize the time with the NTP server	3	Numeric: 0-10	1
time.ntp.port	The port used when connecting to the NTP server	123	Numeric: 0-65535	1
time.ntp.localport	The local port used when connecting to the NTP server	7000	Numeric: 0-65535	1
time.ntp.timeout	The number of seconds of inactivity that needs to pass before a connection with the NTP server is closed. Setting the parameter to -1 will disable it	10	Numeric: -1-60	1
time.daytime.server	Daytime server used by the CMe2100/CMi2110/CMi2130 to synchronize the time	64.236.96.53	Arbitrary server address	1
time.daytime.retry	The maximum number of retries the CMe2100/CMi2110/CMi2130 will perform when attempting to synchronize the time with the daytime server	3	Numeric: 0-10	1
time.daytime.port	The port used when connecting to the daytime server	13	Numeric: 0-65535	1
time.daytime.timeout	The number of seconds of inactivity that needs to pass before a connection with the daytime server is closed. Setting the parameter to -1 will disable it	60	Numeric: 1-60	1

5.4.12 Schedule settings

The following parameters are used to configure scheduled action settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
schedule.retrymax	The maximum number of retries that the CMe2100/CMi2110/CMi2130 will perform for a scheduled job	3	Numeric: 0-10	1
schedule.retryoffset	Time in seconds between each retry attempt for a scheduled job	60	Numeric: 0-86400	1

5.4.13 Meter-specific settings

The following parameters are used to configure product settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
syslog.level	The minimum severity level of the events that are saved in the System Log	0	Numeric: -1-4	1
product.name	The name used by the product to identify itself	Blank	Text	1
product.culture	The language of the product	en	Enumeration: en	1
product.culture.decimal separator	Character used as decimal separator in Push Reports.	,	Arbitrary character	1

5.4.14 Configuration synchronization settings

The following parameters are used to configure the configuration synchronization settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
system.cota.urlbase	Configuration synchronization server base URL. Internally detected if not set	Blank	Text	3
system.cota.url	Configuration synchronization server URL. Internally detected if not set	Blank	Text	1
system.cota.user	Configuration synchronization server used. Internally detected if not set	Blank	Text	1
system.cota.password	Configuration synchronization server password. Internally detected if not set	Blank	Text	1

System.cota.authmode	Configuration synchronization server authentication mode. Internally detected if not set	Blank	Enumeration: None, basic	1

5.4.15 Branding settings

The following parameters are used to configure the branding settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
branding.company	Company name	Blank	Text	2
branding.adress1	Address line 1	Blank	Text	2
branding.address2	Address line 2	Blank	Text	2
branding.address3	Address line 3	Blank	Text	2
branding.address4	Address line 4	Blank	Text	2
branding.tel1	Telephone number 1	Blank	Text	2
branding.tel2	Telephone number 2	Blank	Text	2
branding.fax1	Fax number	Blank	Text	2
branding.email	E-mail address	Blank	Text	2
branding.web	Web address	Blank	Text	2
branding.logourl	URL to logo	Blank	Text	2
branding.logoalt	Alternative text if logo is not found	Blank	Text	2
branding.supportinfo	Support information text	Blank	Text	2
branding.supporttel	Support telephone number	Blank	Text	2
branding.supportemail	Support e-mail address	Blank	Text	2

5.4.16 Monitor settings

The following parameters are used to configure the monitor settings of the CMe2100/CMi2110/CMi2130.

Configuration key	Description	Default value	Validation	Security level
monitor.enabled	Enables monitor handling	false	Boolean: true, false	1

5.4.17 Command and event configuration settings

The following parameters are combined with previous configurations to form specific commands for the CMe2100/CMi2110/CMi2130.

Command	Description	Default value	Validation	Security level
enabled	Enables a schedule or report	-	Boolean:	1

			true, false	
cron	Cron schedule for schedulable events	-	Cron pattern	1
runonerror	Runs when the specific command errors	-	Arbitrary command	1

5.5 Configuration commands

This section covers the commands used to configure the CMe2100/CMi2110/CMi2130 and can be viewed as an extension of the operations guide.

5.5.1 Qset - Quick configuration of the product

The qset command is used to be able to quickly configure the CMe2100/CMi2110/CMi2130 by setting several parameters in the same command.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: qset <section> [<param> [<param> [….]]]
<section> An arbitrary configuration parameter from one of the following: email, ftp, http, net, mbus, tmbus1, tmbus2, csd (not applicable for CMe2100 LTE), console.
<param> A parameter corresponding to the section chosen.

Qset email commands

Command: qset email [<additive> [<recipients> [<server> [<port> [<username> [<password>]]]]]] **Example:** qset email +recipient@mydomain.com smtprelay1.mymailprovider.com 25 user1 password1
<additive> Use a + sign to add recipient or a – sign to remove recipients.
<recipients> List of e-mail recipients, separated by comma.
<server> DNS or IP address of an SMTP server.
<port> The SMTP server port number used by the CMe2100/CMi2110/CMi2130.
<username> Username to connect to the SMTP server.
<password> Password to connect to the SMTP server.

Qset FTP commands

Command: qset ftp [<server> [<port> [<username> [<password> [<remotedir>]]]]] **Example:** qset ftp ftp.elvaco.se 21 user2 password2 map1/map2
<server> DNS or IP address of an FTP server.
<port> The FTP server port number used by the CMe2100/CMi2110/CMi2130.
<username> Username to connect to the FTP server.
<password> Password to connect to the FTP server.
<remotedir> FTP server remote directory where the files will be placed.

Qset HTTP commands

Command: qset http [<url> [<username> [<password> [<authmode>]]]] **Example:** qset http://www.elvaco.se/postdata.aspx user3 password3 basic
<url> URL of a HTTP server.
<username> Username to connect to the HTTP server.
<password> Password to connect to the HTTP server.
<authmode> The authentication mode used when connecting to the HTTP server.

Qset net commands

Command: qset net [<apn> [<username> [<password> [<dns1> [<dns2> [<timeout>]]]]]] **Example:** qset net online.mymailprovider.se user4 password4 8.8.8.8 60
<apn> The APN used by the CMe2100/CMi2110/CMi2130 when connecting to the network.
<username> APN username.
<password> APN password.
<dns1> Primary DNS used by the CMe2100/CMi2110/CMi2130.
<dns2> Secondary DNS used by the CMe2100/CMi2110/CMi2130.
<timeout> Time of inactivity in seconds that needs to pass before the network connection is closed. Setting this parameter to zero will disable the timeout functionality.

Qset mbus commands

Command: qset mbus [<searchmode> [<searchbaud> [<searchstart> [<searchend> [<retrymode>]]]]] **Example:** qset mbus secondary, primary 2400 0 250 simple
<searchmode> The mode used to address meters on the M-Bus. Can be primary, secondary or enhanced secondary (esecondary)
<searchbaud> The baud rate used to communicate with meters on the M-Bus.
<searchstart> The start address (0-250) used when searching for meters using the primary addressing mode.
<searchend> The end address (0-250) used when searching for meters using the primary addressing mode.
<retrymode> By setting the retry mode to “enhanced”, the amount of select retries and request retries will increase. Setting the retrymode to “simple” will use the default values.

Qset tmbus commands

Command: qset tmbus<id> [<run> [<baud> [<port>]]] **Example:** qset tmbus1 on 2400 2400
<id> The Transparent M-Bus service to be set (1 or 2).
<run> The status of the Transparent M-Bus service (on or off)
<baud> Local baud rate. Valid value are: 2400 and 9600.
<port> The port used by the Transparent M-Bus service to connect (0-65535).

Qset console commands

Command: qset console [<run> [<port>]] **Example:** qset console on 12000
<run> The status of the console application (on or off).
<port> The port used by the console application to connect to the CMe2100/CMi2110/CMi2130 (0-65535).

Qset csd commands (Not applicable for CMe2100 LTE)

Command: qset console [<run> [<port>]] **Example:** qset console on 12000
<run> The status of the console application (on or off).
<port> The port used by the console application to connect to the CMe2100/CMi2110/CMi2130 (0-65535).

5.5.2 Get - Check configuration values

The get command is used to check a set configuration value.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: get common.<key> [common.<key> […]] **Example:** get common.http.url common.email.to common.device.mbus.searchmode common.net.*
<key> A valid configuration key. All configuration keys are listed in section 6.4. By adding ".*" to a configuration key, all settings of that key will be listed, for example *get common.net.**

5.5.3 Set - Set configuration values

The set command is used to set a configuration value.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: set common.<key>=<value> [<key>=<value> […]] **Example:** set common.email.to=recipient@mydomain.com common.schedule.retrymax=3 common.sms.to=
<key> A valid configuration key. All configuration keys are listed in section 6.4.
<value> A valid value for the chosen configuration key. Leaving this field empty will remove previously set values for that specific configuration key.

5.5.4 Sch - Schedule commands

The sch command is used to set a schedule recurrent actions, for example a Push Report. It can be used to turn on or off a schedule for a chosen command. It can also be used to set a new schedule, change report templates and set command specific parameters. However, the schedule of command that is configured will always be enabled when using sch.

SMS	Telnet	Schedulable	Security level

Yes	Yes	No	1

Command: sch <command> <run> [<key>=<value [<key>=<value> […]]] sch <command> <schedule>[<template id>][<key>=<value>[<key>=<value>[…]]] **Example:** sch report1 on filter.param=2 sch report1 1day 1105 email.to=recipient@mydomain.com
<command> The command to be scheduled. Examples of schedulable commands include: report1,…, report5, storevalue and timesync.
<run> The status of the schedulable command (on or off).
<key> A valid configuration key. All configuration keys are listed in section 6.4.
<value> A valid value for the chosen configuration key.
<schedule> The schedule to be used for the chosen command. Valid values include: 1min, 5min, 10min, 15min, 20min, 30min, 1hour, 12hour, 1day, 1week and 1month.
<template id> The template id to be used if scheduling a report. See section 5.13 (Report templates) for all available template ids

5.5.5 Cfg - Change a command or an event configuration

Cfg is used to change the configuration of a chosen command, for example a Push Report. It differs from the sch command in the way that it does not activate the schedule of the command in the way that sch does. Because of that, cfg should be used when a command is to be configured but not activated or when the command is not schedulable.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: cfg <command/event> <schedule> [<template id>] [<key>=<value> [<key>=<value>[…]]] **Example:** cfg report1 1week 1105 email.to=recipient@mydomain.com filter.param=2
<command/event> The command or event to be configured. This might include schedulable ones like report1 or non-schedulable ones like momreport.
<schedule> The schedule to be used for the chosen command. Valid values include: 1min, 5min, 10min, 15min, 20min, 30min, 1hour, 12hour, 1day, 1week and 1month.
<template id> The template id to be used if scheduling a report. See section 5.13 (Report templates) for all available template ids
<key> A valid configuration key. All configuration keys are listed in section 6.4.
<value> A valid value for the chosen configuration key.

5.6 System commands

5.6.1 Factoryreset - Reset all product configurations to factory default

The factoryreset command will have the CMe2100/CMi2110/CMi2130 reboot and reset all settings to factory default.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	3

Command: factoryreset

5.6.2 Sync - Synchronize configurations with a HTTP server

The sync command is used to quickly configure and customize the CMe2100/CMi2110/CMi2130 by synchronizing the settings with an HTTP server. The product will then connect to the Elvaco server (set by default), download a settings command file, and synchronize its settings with it. If any changes are made to the product settings, a reboot will be performed.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: sync [<sync id>] [<sync id>] […] **Example:** sync elv
<sync id> The name of the command settings file that the CMe2100/CMi2110/CMi2130 will download and synchronize with.

5.6.3 Reboot - Perform a reboot of the product

The reboot command is used to perform a reboot of the product.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: reboot

5.7 Status commands

5.7.1 Status - Request status information

The status command is used to request status information from the product.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: status [<request>] **Example:** status prepaid
<request> The type of information to be added to the status update. Valid values include: common, prepaid, net, module or ver.

Request value	Information
common	Time:<date> Uptime:<time>Signal:<signal strength> of 10 Provider:<operator> Net: <band info> PSC Status: <PSC info> APN:<apn>

net	Operator:<operator> Net: <Band info> Cell:<cell identification> Signal:<GSM signal decibel milliwatt> dBm Ip: <ip address>
module	Imei:<international mobile equipment identity> SimId:<SIM identification> Imsi:<international mobile subscriber identity>
ver	Hw:<hardware version> Sw:<software version> Module:<module version> Production date:<date>
device	device: <meter 1 secondary address> <active/passive> <meter 2 secondary address> <active/passive> <meter 3 secondary address> <active/passive> ……

5.7.2 Report1, …, report5 - Report commands

Report1, report2, report3, report4 and report5 are user definable reports which can be delivered by a set schedule or manually. There is a wide range of report templates available for each type of report, each one is listed in section 5.13 (Report templates)

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: report[<report id>] [<data>] [<template id>] **Example** report1 1hour 1105
<report id> The id of the report to be configured.
<data> Determines how far back in time meter values will be included in the report. If left empty, the settings made with the sch or cfg command will be used. Valid values include: 1min, 5min, 10min, 15min, 20min, 30min, 1hour, 12hour, 1day, 1week, 1month.
<template id> The template of the report. If left empty, the settings made with the sch or cfg command will be used.

Configurations

Below, all settable configurations for the report1-report5 command are listed. To change the setting of a configuration, use the *set* command in the following way: *set report[report id].[configuration]=[value]*, for example *set report1.sms.enabled=true*.

Configuration	Default value
schedule.retrymax	5
schedule.retryoffset	300
sms.enabled	False
sms.response	Inherited from default settings.
sms.to	Inherited from default settings.

sms.template	Blank
email.enabled	False
email.to	Inherited from default settings.
email.cc	Inherited from default settings.
email.bcc	Inherited from default settings.
email.server	Inherited from default settings.
email.port	Inherited from default settings.
email.user	Inherited from default settings.
email.password	Inherited from default settings.
email.from	Inherited from default settings.
email.template	1004
ftp.enabled	False
ftp.server	Inherited from default settings.
ftp.port	Inherited from default settings.
ftp.user	Inherited from default settings.
ftp.password	Inherited from default settings.
ftp.remotedir	Inherited from default settings.
ftp.template	Blank
http.enabled	False
http.url	Inherited from default settings.
http.user	Inherited from default settings.
http.password	Inherited from default settings.
http.authmode	Inherited from default settings.
http.template	Blank
http.header	Inherited from default settings.
filter.device	Blank
filter.value	* * * * *
filter.mode	Day
filter.param	1

Data filtering of Push Reports

The configurations *filter.value*, *filter.mode* and *filter.param* can be used to filter out what meter values that will be included in the Push Reports.

Configuration	Explanation
filter.value	A cron pattern which is used to set the time between each meter value included in the Push Report. For example, using the cron pattern 15 * * * * will include all meter values that were read 15 minutes past an hour.

filter.mode	The unit used when determining how far back in time meter values should be included in the Push Reports. Possible settings include: *minute, hour, day, month, interval* or *auto*. Using “interval” lets the user specify a time interval (on the form YYYYMMDD,YYYYMMDD) where meter values will be included. Using “auto” automatically includes all meter values read since the last Push Report.
filter.param	Sets the value linked to the *filter.mode* parameter. For example, setting *filter.param* to “1” and *filter.mode* to “month” will include meter values from the last month which matches the cron pattern determined by *filter.value*.

5.7.3 Momreport - Execute an On Demand Report

The On Demand Report is used to manually trigger a meter readout and deliver a Push Report to the default recipients of each protocol.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: momreport [<template id> [<meter list>]] **Example** momreport 1101 12345678, 00112233, 98765432
<template id> The template of the On Demand Report. This parameter also sets by which protocols the report will be delivered. For example, choosing an e-mail template will have the report delivered by the e-mail protocol.
<meter list> The secondary address, separated by comma, of the meters, whose values will be included in the On Demand Report.

Configurations

Configurations	Default value
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	Blank
ftp.enabled	False

ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.enabled	False
http.url	Inherited from default settings
http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.template	Blank
filter.device	Blank
filter.value	* * * * *
filter.mode	Day
filter.param	1

5.7.4 Logreport - Execute a System Log Report

The System Log Report is used to provide information on all events stored in the System Log of the CMe2100/CMi2110/CMi2130 and is delivered to the default recipients set for all protocols.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: logreport

Configurations

Configurations	Default value
schedule.retrymax	5
schedule.retryoffset	300
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings

email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1004
ftp.enabled	False
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.enabled	False
http.url	Inherited from default settings
http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.template	Inherited from default settings

5.7.5 Sysreport - Execute a System Report

The System Report provides information on the system settings and is delivered to the default recipients of all protocols.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: sysreport

Configurations	Default value
schedule.retrymax	5
schedule.retryoffset	300
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings

email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1003
ftp.enabled	False
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.enabled	False
http.url	Inherited from default settings
http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.template	Inherited from default settings

5.8 Security commands

5.8.1 Login - Log in using a console application

When security access is enabled for CMe2100/CMi2110/CMi2130, the user will have to use the *login* command to access the product via a console application. The default password for each security level is blank (security level 1), 2222 (security level 2) and 3333 (security level 3).

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: login <password> **Example** login secretpassword
<password> The password of the security level corresponding with the desired command.

Configurations	Default value
security.password1	Inherited from default settings
schedule.retryoffset	Inherited from default settings
sms.enabled	Inherited from default settings

5.9 Installation and maintenance commands

5.9.1 Install - Find and install connected meters

The *install* command is used to create a Meter List, which the CMe2100/CMi2110/CMi2130 can use to perform meter readouts. The installation can be performed by having the product download a settings command file from the Elvaco server and synchronize with it. In such cases, the *sync* command will be

used.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: install [<number of meters> [<syncid> [<name> [<keep] [<clean>]]]] **Example** install 5 elv keep install 1 Heatmeter clean
<number of meters> The number of meters that the CMe2100/CMi2110/CMi2130 should expect to find in the installation process. Setting this parameter can speed up the installation.
<syncid> The name of the settings command file that the CMe2100/CMi2110/CMi2130 will download from the Elvaco server and synchronize its settings with.
<name> The name(s) that will be used for the meter(s) that will be installed.
<keep> By including this parameter, all previously installed meters will stay active even if not found during the new installation process.
<clean> By including this parameter, all previously installed meters will be deleted before starting the new installation.

Configuration	Default value
schedule.retrymax	5
schedule.retryoffset	300
sms.enabled	True
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	1
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1001
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.url	Inherited from default settings

http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.header	Inherited from default settings
http.template	Blank
device.mbus.searchmode	Inherited from default settings
device.mbus.searchstart	Inherited from default settings
device.mbus.searchend	Inherited from default settings
device.mbus.searchidmask	Inherited from default settings
device.mbus.searchmanmask	Inherited from default settings
device.mbus.searchgenmask	Inherited from default settings
device.mbus.searchmedmask	Inherited from default settings
device.mbus.searchbaud	Inherited from default settings
device.mbus.responsetimeout	Inherited from default settings
device.mbus.nkesleep	Inherited from default settings
device.mbus.busrecoverytime	Inherited from default settings
device.mbus.idleduration	Inherited from default settings
device.mbus.retry	Inherited from default settings
device.mbus.fcbmode	Inherited from default settings
device.mbus.telegramcount	Inherited from default settings
device.mbus.buswatch	Inherited from default settings
device.mbus.maxdevices	Inherited from default settings
device.mbus.clean	Inherited from default settings
device.mbus.keepstatus	Inherited from default settings
timesync.enabled	True

5.9.2 Maintenance - Surveillance and cleaning up old values

The *Maintenance* command will clean up old meter data and log information in the System Log.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: maintenance

5.10 Readout and synchronization commands

5.10.1 Timesync - Synchronize time with internet time server

The *Timesync* command is used to synchronize the time of the CMe2100/CMi2110/CMi2130 with an internet time server. If the time differs by more than the maximally accepted time difference, the time will be set. By default, the product checks the time of the server every 12th hour.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: timesync

Configuration	Default value
schedule.retrymax	5
schedule.retryoffset	300
time.ntp.server	Inherited from default settings
time.ntp.port	Inherited from default settings
time.ntp.localport	Inherited from default settings
time.ntp.timeout	Inherited from default settings
time.acceptdiff	Inherited from default settings
time.daytime.server	Inherited from default settings
time.daytime.port	Inherited from default settings
time.utcoffset	Inherited from default settings
time.mode	Inherited from default settings
runonerror	Reboot

5.10.2 Storevalue - Perform a meter readout

The *storevalue* command is used to read and store values for all installed meters. All installed and active meters will be read when executing the command.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: storevalue

Configuration	Default value
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings
device.mbus.responsetimeout	Inherited from default settings
device.mbus.nkesleep	Inherited from default settings
device.mbus.busrecoverytime	Inherited from default settings
device.mbus.idleduration	Inherited from default settings
device.mbus.retry	Inherited from default settings
device.mbus.fcbmode	Inherited from default settings
device.mbus.telegramcount	Inherited from default settings
device.mbus.buswatch	Inherited from default settings

device.mbus.maxdevices	Inherited from default settings
device.mbus.clean	Inherited from default settings
device.mbus.keepstatus	Inherited from default settings
device.includelist	Blank
device.command.runbefore	Inherited from default settings
device.command.runbeforesleep	Inherited from default settings

5.11 Meter commands

5.11.1 Device-Send a command directly to a meter

The *device* command is used to send a command directly to a meter on the M-Bus.

SMS	Telnet	Schedulable	Security level
Yes	Yes	Yes	1

Command: device <meter list> <command> **Example:** device 01234567,00112233 read
<meter list> The secondary addresses of the meters that the command should be sent to. Keep addresses separated by comma.
<command> The command that should be sent to the meters. All available commands are listed in the table below.

Command	Explanation	M-Bus data (starting at C field)
auxoff	Turn auxiliary relay off	0x73aa518140fd1a80
auxon	Turn auxiliary relay on	0x73aa518140fd1a40
broff	Turn breaker relay off	0x73aa5101FD1A80
bron	Turn breaker relay on	0x73aa5101FD1A40
read	Read meter user data	0x7Baa

Configuration	Default value
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings
device.mbus.responsetimeout	Inherited from default settings
device.mbus.nkesleep	Inherited from default settings
device.mbus.busrecoverytime	Inherited from default settings
device.mbus.idleduration	Inherited from default settings
device.mbus.selectretry	Inherited from default settings
device.mbus.requestretry	Inherited from default settings
device.mbus.fcbmode	Inherited from default settings
device.mbus.telegramcount	Inherited from default settings
device.mbus.buswatch	Inherited from default settings

device.mbus.maxdevices	Inherited from default settings
device.mbus.clean	Inherited from default settings
device.keepstatus	Inherited from default settings
device.includelist	Blank

5.12 Event commands

5.12.1 Rebootevent - Unexpected reboot of the CMe2100/CMi2110/CMi2130

If the CMe2100/CMi2110/CMi2130 reboots unexpectedly, the *rebootevent* will be triggered if enabled. A report will then be sent to all default recipients informing about the event.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Configuration	Default value
enabled	False
command	Report
event	Rebootunexpected
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1005
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.url	Inherited from default settings

http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.header	Inherited from default settings
http.template	Blank

5.12.2 Fwupdate - Updating of firmware

This event is triggered when the firmware of the CMe2100/CMi2110/CMi2130 has been updated. A report will then be sent to all default recipients informing about the event.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Configuration	Default value
enabled	False
command	Report
event	Fwupdate
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1005
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.url	Inherited from default settings

http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.header	Inherited from default settings
http.template	Blank

5.12.3 Swupdate - Updating of software

This event is triggered when the software of the CMe2100/CMi2110/CMi2130 has been updated. A report will then be sent to all default recipients informing about the event.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Configuration	Default value
enabled	False
command	Report
event	Swupdate
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings
sms.enabled	False
sms.response	Inherited from default settings
sms.to	Inherited from default settings
sms.template	Blank
email.enabled	True
email.to	Inherited from default settings
email.cc	Inherited from default settings
email.bcc	Inherited from default settings
email.server	Inherited from default settings
email.port	Inherited from default settings
email.user	Inherited from default settings
email.password	Inherited from default settings
email.from	Inherited from default settings
email.template	1005
ftp.server	Inherited from default settings
ftp.port	Inherited from default settings
ftp.user	Inherited from default settings
ftp.password	Inherited from default settings
ftp.remotedir	Inherited from default settings
ftp.template	Blank
http.url	Inherited from default settings

http.user	Inherited from default settings
http.password	Inherited from default settings
http.authmode	Inherited from default settings
http.header	Inherited from default settings
http.template	Blank

5.12.4 - Swupdatesynchandler - Software update synchronization

After the software of the CMe2100/CMi2110/CMi2130 has been updated, the product will perform a synchronization with the server. This will trigger the *swupdatesynchandler* event and sent a report to all default recipients.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Configuration	Default value
enabled	False
command	Sync
event	Swupdate
schedule.retrymax	Inherited from default settings
schedule.retryoffset	Inherited from default settings

5.13 Report templates

The following table contains all available report templates for each protocol. For more information about each report template, please visit the Elvaco website.

Template number	Explanation
SMS Reports	
1	SMS Installation Report
2	SMS Monitor Event Report
101	SMS Value Report
E-mail Reports	
1001	E-mail Installation Report, HTML format
1002	E-mail Installation Report, plain text format
1003	E-mail System Report, HTML format
1004	E-mail System Log Report, HTML format
1005	E-mail Event Report, HTML format
1006	E-mail Log Report, HTML format
1007	E-mail Monitor Event Report, HTML format
1101	E-mail Value Report, HTML format (readable data format)
1102	E-mail Value Report, HTML format (raw data format)

1103	E-mail Value Report, HTML format (Attached CSV file per meter in raw data format)
1104	E-mail Value Report, HTML format (Attached CSV file per meter in readable data format)
1105	E-mail Value Report, HTML format (Attached CSV file per meter in readable data format with extra header information)
1106	E-mail Value Report, HTML format (Attached zip file per meter in readable data format with extra header information)
1107	E-mail Value Report energy consumption, HTML format (Attached CSV file per meter in readable data format with extra header information)
1108	E-mail Value Report extended, HTML format (Attached CSV file in readable data format with extra header information)
1109	E-mail Value Report extended plus, HTML format (Attached CSV file per meter in readable data format with extra header information and M-Bus header information)
1110	E-mail Value Report extended plus, HTML format (Attached CSV file in readable data format with extra header information and M-Bus header information
FTP Reports	
2001	FTP Installation Report, raw M-Bus format
2002	FTP installation Report, plain text format
2005	FTP Event Report, plain text format
2006	FTP Log Report, (Attached CSV file in plain text format)
2007	FTP Status Report, plain text format
2101	FTP Value Report (Values structured in a single CSV file in readable data format)
2102	FTP Value Report (Values structured in a single CSV file in raw data format)
2103	FTP Value Report (Values structured in one CSV file per meter in raw data format)
2104	FTP Value Report (Values structured in one CSV file per meter in readable data format)
2105	FTP Value Report extended (Values structured in one CSV file per meter in readable data format with extra header information)
2108	FTP Value Report extended, plain text format (Values structured in a single CSV file in readable data format with extra header information)
2109	FTP Value Report extended plus, plain text format (Values structured in one CSV file per meter in readable data format with extra header information and M-Bus header information)
2110	FTP Value Report extended plus, plain text format (Values structured in a single CSV file in readable data format with extra header information and M-Bus header information)
HTTP Reports	
3001	HTTP Installation Report (Values structured as one post in raw data format)
3002	HTTP Installation Report (Values structured as one post in readable data format)
3005	HTTP Event Report (Values structured as one post in readable data format)
3006	HTTP Log Report (Values structured as one post in readable data format)

3007	HTTP Status Report (Values structured as one post in readable data format)
3101	HTTP Value Report (Values structured as one post in readable data format)
3102	HTTP Value Report (Values structured as one post in raw data format)
3103	HTTP Value Report (Values structured as one post per meter in raw data format)
3104	HTTP Value Report (Values structured as one post per meter in readable data format)
3105	HTTP Value Report extended (Values structured as one post per meter in readable data format with extra header information)
3106	HTTP Value Report extended (Values structured as one post per meter in raw data format)
3108	HTTP Value Report extended (Values structured as one post in readable data format with extra header information)
3109	HTTP Value Report extended plus (Values structured as one post per meter in readable data format with extra header information and M-Bus header information)
3110	HTTP Value Report extended plus (Values structured as one post in readable data format with extra header information and M-Bus header information)

5.14 Product specific commands, CMe2100

This section lists commands that are only applicable to CMe2100.

5.14.1 USB commands

The following commands are used to configure the USB port of the CMe2100.

SMS	Telnet	Schedulable	Security level
Yes	Yes	No	1

Command: usb <status> **Example** usb on	
<status>	The status to be set for the USB port. Valid values include: on, off anf restart.

6 Document history

6.1 Update

Version	Date	Description	Author
1.0	2020-04	Merged document for CMe2100 (gen.3/LTE) /CMi2110/ CMi2130. First version.	David Svensson
1.1	2021-02	Updated version for software 3.2.5	David Svensson

6.2 Document software and hardware appliance

Type	Version	Date	Comments
Hardware	1B		
Software	3.2.5		

7 References

7.1 Terms and abbreviations

Abbreviation	Description
DHCP	Dynamic Host Configuration Protocol
FTP	File Transfer Protocol
HTTP	Hypertext Transfer Protocol
NTP	Network Time Protocol
SMTP	Simple Mail Transfer Protocol

7.2 Number representation

- Decimal numbers are represented as normal number, i.e. 10 (ten).
- Hexadecimal numbers are represented with prefix 0x, i.e. 0x0A (ten)
- Binary numbers are represented with prefix 0b, i.e. 0b00001010 (ten)