SMS Center, ver. 2.23, Dec 13 2002

Reference manual

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1. SMS Center

1.1 Concept

Qnet SMS Center is a program meant to process and route GSM short messages across different services. SMS Center receives messages from **Message sources**, processes them using some **Dispatching rules** and then routes them to **Output queues**. All of these must be installed by the user, but three of them already exist and don't need to be installed: these are the **TERMINAL** message source, the **SCREEN** output queue and the **NULL** output queue. Moreover, the **GSM** message source and output queue need a **GSM module** to be installed.

1.2 Message sources

Message sources are installed pressing the **New** button in the **Settings** dialog box. They can be edited by double clicking their name in the list. Every message source has always an associated name. Message sources can be **Enabled** or not. Messages will be routed forward to the dispatching engine only when the source will be enabled. Some message sources (intended as software modules of SMS Center) will refuse messages from the network, if they won't be enabled.

1.2.1 TERMINAL message source

This type of message source doesn't need to be installed. It is always present and it receives messages from the operator. The operator can write a message pressing the **Send** button in the program. The messages typed by the operator using this function will be considered to be generated by the **TERMINAL** message source. **TERMINAL** is both the type and the name of this message source.

1.2.2 FILE message source

This type of source continuously monitors a folder in the computer for messages (written in the standard format used by SMS Center). A standard wildcard (e.g. *.SMS) can be given optionally. When such a file will be found in the given folder, it will be read and sent to the dispatcher. Then it will be deleted.

1.2.3 GSM message source

Messages from a connected GSM terminal will be received and sent to the dispatcher. The GSM module has to be installed first. Messages can be received by the module (intended as the software module of SMS Center) in two ways: messages can be received by the GSM terminal and stored in the SIM; in this case SMS Center will periodically read them, delete them from the SIM and pass them to the dispatcher; otherwise they can be directly routed from the terminal to SMS Center. For this second behavior **Direct routing** has to be checked.

GSM modules must be installed by pressing the **New** button in the **Settings**. Parameters such as **COM port** to use and **Baud rate** have to be entered. The **PIN** has to be entered only for terminals that don't have a keyboard and that have a SIM that requires PIN. When the terminals need a virtual modem driver to be installed in order to operate, the COM port installed by this virtual driver has to be chosen for the COM port and not the hardware port.

1.2.4 SMTP message source

This option installs a SMTP e-mail server on the computer. This server will accept incoming e-mails and convert them to SMS messages. The **Domain name** of the server has to be entered and optionally a list of authorized senders (their complete e-mail addresses or their domain names preceded by the '@' symbol). The domain name is the part after the '@' symbol in an e-mail address. If the name part of the e-mail address of the sender is a valid GSM number, it will be considered the GSM number of the sender of the message. The destination e-mail address can be in the form *number@domain* or *sms@domain*, where "sms" has to be written literally. When the first form is used, *number* will be intended as the destination GSM number of the message and the e-mail will contain the message itself. Optionally, if the e-mail subject is *"SMS w/report"*, the delivery report request flag will be set for that message, and if the e-mail subject is *"SMS report"*, that message will be considered a delivery report. When the second form is used, a file written using the standard format of SMS Center has to be present in the e-mail text or attachment.

1.2.5 POP3 message source

This option installs a POP3 e-mail client on the computer. The client will check periodically an e-mail account on a POP3 server. The messages present on the server will be checked, retrieved and deleted. They will be accepted only if the sender will be among the **authorized users** (if this field hasn't been entered, no check will be performed) and the e-mail subject will be one of these: *"SMS"*, *"SMS w/report"* or *"SMS report"*. Not mattering what the subject will be, the e-mail text or an e-mail attachment will have to contain a file in the standard format of SMS Center.

1.2.6 MAILSLOT message source

This option receives messages sent by other SMS Centers present in the network via the MAILSLOT output queue. Messages are always broadcast over the network to all the computers present, but the receiving SMS Center will have the option to accept only the messages coming from a specified host.

1.2.7 HTTP/Mobitel message source

This option installs a Web server, which accepts messages sent to it via a proprietary protocol used by Mobitel Slovenija. A linked virtual output queue will be also created for responses.

1.3 Output queues

Output queues are installed pressing the **New** button in the **Settings** dialog box. They can be edited by double clicking their name in the list. Every output queue has always an associated name and most of them have an associated folder where to store messages. The dispatcher will store the messages in that folder in the standard format used by SMS Center and the folder will be continuously analyzed for sending. Output queues can be **Enabled** or not. The queue will be processed and the messages sent only when the queue will be enabled. Every queue unless the **SCREEN** and **NULL** queues can put a limit on the maximum number of characters that can be present in the message text. This limit is 160 characters by default. When messages cannot be sent for various reasons (GSM faulty, network faulty, etc.), the messages in the queue will be scheduled for retransmission. The retransmission will occur after a predetermined interval of time **(Retry interval)**, which can be specified for every queue independently. These messages will be present in the associated folder with the *".delayed"* extensions. Bad messages, which cannot be sent, will be renamed to have a *".bad"* extension.

1.3.1 SCREEN output queue

This queue is installed by default and hasn't an associated folder. Messages sent to this queue are sent directly to the screen. It has some associated settings present in the Settings dialog box: if **Show last messages as received** is checked, the list of received messages is scrolled to the end on reception of a new message to be sure that the new message is visible. **Large fonts** shows the messages with larger fonts. **Screen output text file** is an optional file, where all the screen output can be written. The format of the file is:

D/M/Y [tab] h:mm:ss [tab] sender phone number [tab] day [tab] week [tab] month [tab] total [tab] message text

Where day, week, month and total are the number of messages received in the current day, in the last week, in the last month and the total number of messages received from that number, respectively. This is also the information shown on the screen.

1.3.2 NULL output queue

This queue is installed by default and hasn't an associated folder. Messages sent to this queue are simply deleted.

1.3.3 FILE output queue

This queue isn't really a queue, since it doesn't transmit anything. It behaves like any other queue, which is not enabled. The messages remain there for archiving purposes.

1.3.4 GSM output queue

Messages in this queue will be sent via a connected GSM terminal (see **GSM message source)**.

1.3.5 SMTP output queue

Messages in this queue will be sent via e-mail directly using an internal e-mail client. The name of the SMTP server has to be given, the sender e-mail address and the destination e-mail address. If the sender e-mail (**From**) starts with a '@' symbol, the GSM number of the sender of the messages will be put before. If the destination address starts with a '@' symbol, the destination GSM numbers of the message will be put before (more recipients will be given for the e-mail, if more than one destination number is present in the message), otherwise the message will be sent as text or attachment (the relative check box will have to be checked) in the standard format used by SMS Center.

1.3.6 MAPI output queue

Messages in this queue will be sent via e-mail using the default e-mail client installed on the PC. The sender e-mail address used will be that of the currently active account of the e-mail client. The same rules apply for the destination address as for the SMTP output client, but here, a name or nickname (present in the address book of the e-mail client) can be used, too.

1.3.7 HTTPS/Mobitel output queue

Messages in this queue will be sent via a proprietary protocol to the Slovene GSM operator Mobitel.

1.3.8 FTP/SI-Mobil output queue

Messages in this queue will be sent via a proprietary protocol to the Slovene GSM operator SI-Mobil.

1.3.9 MAILSLOT output queue

Messages in this queue will broadcast to other SMS Centers present in the local area network.

1.3.10 HTTP output queue

Messages in this queue will be sent via the GET method to a web page. The message contents and the destination number will be part of the HTTP request. The URL entered will be used as a template for the HTTP request: the %n sequence will be substituted with the recipient number, while the %s sequence will be substituted with message text.

1.3.11 TXTFILE output queue

Messages directed to this queue will be added to the specified text file. The text xfile has the format:

D/M/Y [tab] h:mm:ss [tab] source number [tab] comma separated destination numbers [tab] text [CRLF]

1.4 Dispatching rules

Received messages will be always processed by the **dispatcher**, which will follow the **dispatching rules**. The dispatcher will check if the given messages satisfy the requirements of a rule and if they do, they will be sent to the specified **Destination queue** and the processing of the message will terminate, unless **Continue with next rule** is checked. The requirements are:

1. The **message source** has to be the one specified (if [Any] isn't specified).

2. The **sender e-mail** has to be the one specified (applies only to messages that have arrived via e-mail and only if this field is filled in).

3. The **message must contain** the specified string.

4. The **processing counter** has to be less or equal to the number given in **Limit counter or number** (if filled in), if this one is a number, or less or equal to the counter given in this field, if this field contains a counter name. If this rule is violated, the message won't be sent to the destination queue, but processing will nevertheless stop, if **Continue with next rule** isn't checked.

Every time that a rule is satisfied, the relative **processing counter** will be incremented by the number of messages to be sent (the counter is a simple text file containing a number), since a message can be sent to more destinations. This counter can be **reset daily**, if the relative option is checked. This will occur at midnight or when the program is restarted, if it wasn't active at midnight and the day has changed. When a rule is satisfied, the messages will be transformed using a **transformation** rule and some text will be put before and after the message, if specified. Three transformations are currently implemented:

1. **Leave as is** - the message will be left untouched

2. **Answer** - the destination number(s) will be deleted, the sender number will be put as the destination number and the message text will be deleted (some text can be put in the message using **Put before** and **Put after**).

3. **Song** - the destination number(s) will be deleted, the sender number will be put as the destination number and the information associated to that rule will be put in the message text. This information is usually a song name (this has been done for a radio station) transmitted to the SMS Center by the **MobiSound** application. The SMS Center starts indeed a MobiSound server, which accepts incoming connections from the MobiSound client application. The MobiSound application transmits to the SMS Center the currently playing song, and SMS Center associates that song to a rule. Every rule has a **Rule name** which is currently used only for this purpose.

4. **Send to** - the destination number(s) will be deleted and the number in the **Number** field will be used instead.

5. **Send to list** - the destination number(s) will be deleted and the numbers contained in a **list file** will be used. The **list file** must be a normal text file and must contain one number in every line.

6. **Send to list (with labels)** - the destination number(s) will be deleted and the numbers contained in a **list file** will be used. The text will be also completed with information in the **list file**, which must be a TAB-delimited text file. TAB-delimited text files contain one record per line and every line contains a number of fields, which are separated by the TAB character. The first field contains always a phone number, which will be used as the destination number of the message, the other fields contain text, which will be inserted in the message instead of the special sequences %1, %2, … %9 present in the message text.

Once the message is effectively sent, the **Messages sent counter** is also incremented by the number of messages sent.

1.5 File format

All the messages, which are stored in files or transmitted as attachments in e-mails, are always written in a standard format used by SMS Center. This format is depicted here.

The file always begins with the line

SMS

Then it contains one or more lines of this type:

Date: *D/M/Y h:mm:ss*
Delivery-report
Counter: *name*
Send-at: *D/M/Y h:mm:ss*
From: *number*
To: *number*

Date represents the message creation time. If the line Delivery-report is present, the message requests a delivery report. The line Counter is used in the output queues to increment the counters when the sender has finished to send the message. Send-at allows to send the message later at a defined time. From is the phone number of the message originator. The line To: *number* is the only one, which can be present more than once, if the message has to be sent to more than one destination.

After these header lines, an empty line is present and after that one, the message text.

1.6 User interface

The messages shown on screen can be flagged, copied to the clipboard and to an internal editor. The **Enable** button removes all the flags from the currently selected message; the message will be shown in blue. The **Disable** button flags that message as disabled and the message is show in gray. The **Read** button flags that message as read, it is show in red and its contents is copied to the internal editor.   **To clipboard** copies the current message into the clipboard. **Edit** shows or hides the internal editor. **Stat** shows or hides the statistics window. **Counters** opens the counters window. **Log** and **Send log** show or hide the program log and the log of sent messages. **Send** opens a window, where the user can write messages to send manually. **Settings** opens the settings dialog box. **Status** opens the status window and **Phone** opens a window used to accept incoming calls.

1.6.1 Statistics

The user has to select first, if he is interested in **Numbers** statistics or **Songs** statistics. Then he has to choose the **Rule name** (which corresponds usually to a radio station).

When **Regular** is chosen, the statistics show a list of numbers ordered from the most common to the least common. The list shows the numbers of the senders of the messages that have been shown on screen. Near them, four numbers are shown: the number of messages received from that number, the number of messages received from that number in the last month, in the last week and in the current day.

For numbers statistics, when **All Mobi-sound** is chosen, the list of all the numbers that requested a song is shown, for all the stations, and the number of requests made by that number; when a station is chosen, only the requests relative to that station are shown.

For songs statistics, when **All Mobi-sound** is chosen, the list of all the songs that have been requested is shown, for all the stations, and the number of requests made for that song; when a station is chosen, only the requests relative to that station are shown.

Recalc is used to recalculate the statistics from the log. The statistics for regular messages are always recalculated at program start and at midnight.

1.6.2 Counters

Messages, which are directed to the screen, can be counted. If the messages received contain a given string, the relative counter is incremented. **Start** must be issued to start the counting process. These counters have no relation with the counters present in the dispatcher.

1.6.3 Send window

After entering a list of numbers (every number in a line) and the message text, the message can be sent using one of the dispatching rules, which accept TERMINAL or [Any] as the message source. The list of numbers can be saved to a file and reloaded with the **Save** and **Load** buttons. **All numbers** puts in the list all the numbers, from which messages have been received and shown on screen. If **Delivery report** is checked, a delivery report will be asked (it will be received back by SMS Center and shown in the log). **Send** sends the message to all the numbers present in the list on the left side, **Send all** sends the message to all the numbers, from which messages have been received and shown on screen, instead of taking the numbers from the list on the left side of the window.

1.6.4 Status window

The status window shows some information on the services and objects of SMS Center. These items are shown:

1. The list of GSM modules installed and their status (Running or an error condition)

2. The list of source messages installed and their status (Running or Stopped)

3. The list of output queues installed and their status (Running or Stopped)

4. The list of counters with their value

5. The list of Rules with Song transformation and their associated information (current song)

1.6.5 Phone

This opens the phone window. The phone window allows to accept or reject incoming calls and manages their log. It provides a phone book to show names of people that are calling instead of their phone numbers. The people in the phone book or in the log can be recalled. Supplementary services are supported.