A MITEL
PRODUCT
GUIDE

Unify OpenScape Alarm Response Professional

OScAR-Pro V5
Classic Applications
Mail2Phone

Service Manual
07/2024

A31003-S1750-S102-01-7620

Mitel

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Table of Content

1 Conventions and Operating Instructions

Readers and requirements

This Service Manual is designed for service engineers who carry out the initial installation and start up of the Mail2Phone V5 service and who carry out the system's configuration and maintenance.

To carry out the operations described in this document you need to be familiar with Windows and have a good understanding of the basic laws and principles of telecommunications engineering. Also required is a good familiarity with the handsets that are used and the functions of the PBX.

Content

The following areas are covered in this chapter:

1.1 Overview of the other chapters in this document

The Service Manual contains the following chapters:

Chapter 2, "Functions"	This chapter offers an overview of the structure and the different components in combination with DAKS, and provides a quick coverage of all functions.
Chapter 3, "Install and Uninstall Mail2Phone V4"	This chapter shows you how to install and start the e-mail service Mail2PhoneV4.
Chapter 4, "Configuration Mail2-Phone V4"	This chapter shows you how to configure Mail2Phone V4.
Chapter 5, "Start-Up Testing"	This chapter show you how to carry out the start-up testing.
Chapter 6, "Background Information, Support of Protocol Elements"	This chapter is designed to provide background information and details on the protocol elements that are supported.

Table 1-1 Overview of chapters

1.2 Reference manuals

The below-listed documents offer information that can be of additional assistance when working with OScAR:

- OScAR Service Manual V5
- OScAR Server Configuration Manual OScAR V9.x
- OScAR User Manual, OScAR V9.x

1.3 Notations and symbols

Notations

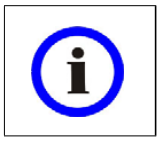
The following definitions are used in this service manual:

`Text`	All texts copied from files that are described in this document and all entries that are added to these files are output in the monospace font `Courier`.
The password 123456...	Details and instructions in the continuous text that are of particular importance or must be heeded are output in bold print. Buttons are also in bold print.
The file `global.cfg`	Files and directories are output in the monospace font `Courier`.
"Name"	Field names, menu names and window descriptions are placed in "quotation marks".
<Placeholder>	Entries and outputs, both of which may vary dependent on the individual situation in which they appear, are placed in <angle brackets> and are in italics.

Table 1-2 Notations

Symbols

The following symbols are employed in this Service Manual



Note:
The info "i" is used to indicate additional helpful information.

Caution!
Safety instructions warn users of hazards that can damage or destroy the hardware or software, and lead to the loss of data.

1.4 General instructions

Operations on the OScAR-Server and the PBX

Please bear in mind that operations performed on the OScAR-Server may only be carried out by qualified service staff. These operations are mainly covered in the OScAR Service Manual V5 and find no further description in this document.

1.5 Data protection and data security

This system processes and uses, among other things, personal data, for example for billing purposes, display outputs, and to record customer details.

In Germany, the processing and application of use of such personal data is subject to various regulations, including the Federal Data Protection Act (Bundesdatenschutzgesetzes, BDSG). Please be careful to follow the laws and regulations for the protection of personal data that are in force in the country in which you work.

The purpose of data protection is to protect the individual against any infringement of his or her personal rights through the misuse of personal data.

In addition, the goal of the data Protection Regulations is the safeguard of the data from misuse during the different processing phases and consequently to counter any impairment caused to external or internal legitimate interests.

Please help ensure complete data protection and data security by being aware of these issues as you work:

- Always make sure that only authorized persons have access to personal data.
- Assign passwords whenever you can. Do not grant unauthorized persons access to your passwords, for example by writing them down.
- Always make sure that no unauthorized persons can process or utilize personal data in any way, for example by saving, communicating, blocking or deleting this information.
- Always make sure that no unauthorized persons have access to data storage media, for example to backup disks or printouts of logfiles or protocols. This applies both to service work provided directly at the customer and to the storage and transport of data carriers.
- Always make sure that every data storage medium that is no longer needed is properly and fully destroyed. Also be careful not to leave behind any papers that could become openly accessible to others.

2 Functions

Overview

This chapter offers an overview of the structure and the different components in combination with OScAR, and provides a quick coverage of all functions.

For more details please see the detailed sections that follow.

Content

The following areas are covered in this chapter:

2.1 Product Overview

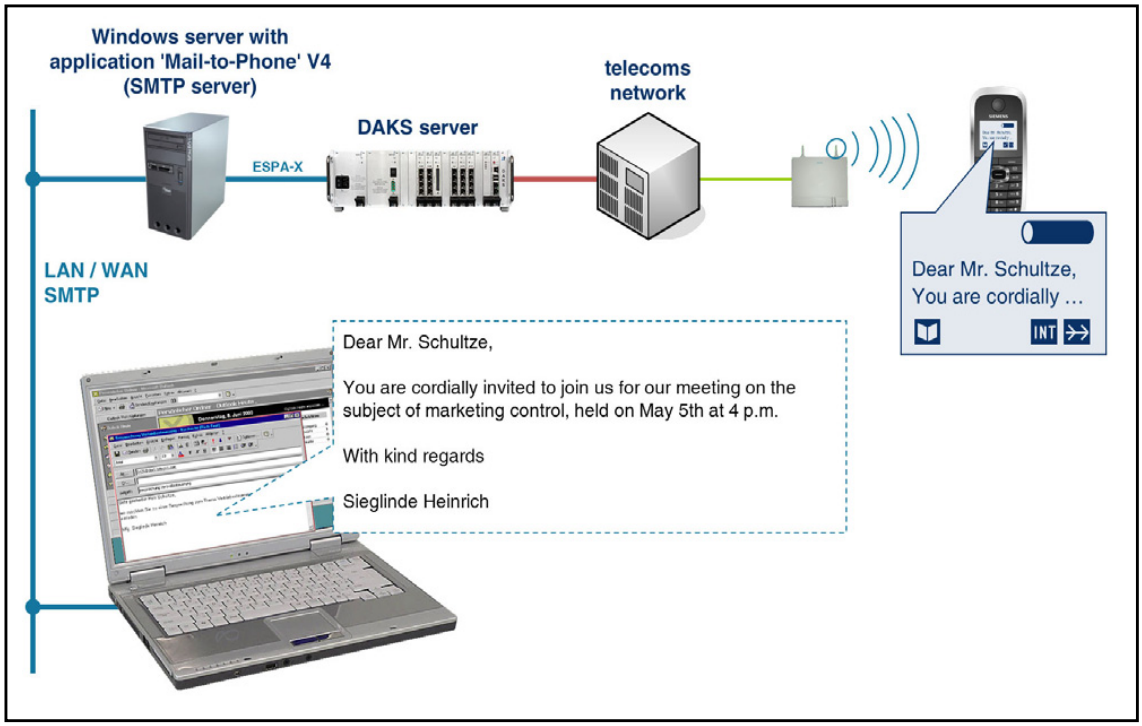


Image 2-1 Schematic of the e-mail service via Mail2PhoneV5

From SMTP mail systems, any e-mails can be sent within OScAR to individual subscribers or to predefined subscriber groups.

Here, the information flow from the LAN/WAN travels to the cordless handset via an SMTP server with the Mail2Phone V5 software, OScAR and the PBX.

The program Mail2Phone V5 acts on the LAN-side as an SMTP e-mail server and utilizes the ESPA-X interface in the direction of the OScAR-Server.

This ESPA-X interface can be utilized to connect two OScAR servers for redundancy (backup). Mail2Phone tries to send the message through the first OScAR connection; if that fails, it uses the second OScAR connection.

2.2 Sender

Using the regular e-mail client, e.g. MS Outlook, the sender specifies the addressee as usual and sends the e-mail to the Mail2Phone V5 application. In contrast to normal e-mails, the addressees here are usually telephone numbers (e.g. e-mail to. "3625@ m2p.company.com").

In this way, OScAR can also dispatch automatically-generated error or malfunction notification e-mails to cordless handsets and terminals.

2.3 Recipient (addressee)

Mail2Phone V5 differentiates between 2 different types of receivers (addressees):

- Addressee type: Individual receivers
- Addressee type: Broadcast groups

Individual Receivers
Individual receivers are informed by giving their subscriber phone number (e.g. e-mail to "1234@ m2p.company.com). The features that are applied this process are as configured in Mail2-Phone V5.

Broadcast Groups
The e-mail service also informs predefined broadcast groups (e. g. e-mail to "G99@ DECT.m2p.company.com"), including all features of the broadcast application (➤ see OScAR User Manual), such as sequential or parallel processing, different confirmation options, follow-up broadcasts etc.

By using the function text-to-voice, up to 160 characters of the e-mail can be converted into a voice message, that is played back during the Broadcast in form of an announcement.

2.4 Terminals

Both for notifications sent to individual subscribers and for those that are sent to entire groups, OScAR supports internal handsets (any) with an alphanumeric display. Longer messages require both the output of the alphanumeric information (the connected name) and the conveyance of the call-transfer information from OScAR to the handset. The outputs at HFA phones at Unify HiPath 4000 are particularly convenient (2-line display).

In combination with group notifications, the Mail2Phone system is even more efficient. It offers additional support of:

- Text messages to mobile handsets via SMS,
- Text messages to Ascom WiFi phones (i75 and i62) via IMS/OAP,
- Text messages to OpenStage WL3 telephones via WSG/OAP.
- Text messages to OScAR-Mobile-Clients via DSAP,
- Voice messages to any telephone using text-to-voice conversion.

2.5 Message transfer

The OScAR server:

- transfers a message to its internal storage,
- processes it either completely, or
  parses it and extracts only the parts that are relevant (up to 5 components, see Section 2.6 "Extract and process specific text areas from messages"), and then processes these parts (components) further,
- and call the target or relevant targets.

Subscribers receive the notification messages:

- with up to 160 characters per message and
- with identification of sender and indication of number of attachments
- where needed via the OAP protocol, parallel to telephone calls

When using text-to-voice, the information is output in form of a voice mail.

In combination with HiPath 4000 and HFA phones (Gigaset, Optipoint, WL2, OpenStage), text messages are shown on the display in two lines (each line with 16 characters), and can be scrolled with the star key * and the pound key #.

Depending on the mail's priority and the obligation to confirm receipt of the message, notifications within the corporate network can vary (can be configured in Mail2Phone V5):

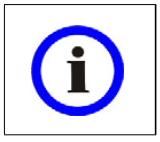
- with emergency call signaling
- with emergency disconnect (forced release), call override, or call waiting if the subscriber is busy
- with the request to the notified subscribers to confirm positive or negative by pressing a key ("I confirm receipt of this message but cannot come").
- with mail back to the sender with explicit notification result or error message. The latter applies also if the sender did not explicitly requested a confirmation; here, Mail2Phone V5 receives the pertinent IP address from the internet name using a DNS request (DNS = Domain Name Server).

2.6 Extract and process specific text areas from messages

If the message shall not be processed in its entirety because only parts of the message shall be extracted and processed further (parsing), up to five (5) such parts or areas (in different text lines) can be defined.

Here, the system will start by searching for the trigger word that must be defined (with case sensitivity yes/no). In the next step, the system offers three (3) different parsing modes for the processing of the text that directly follows that trigger word (in all three cases with or without output of the trigger word):

- Mode 1: The entire text until the end of the line is extracted and processed further
  (= "all text until end of the line")
- Mode 2: The text that is found between the m-th and n-th occurrence of a specific separator character is extracted and processed further
  (= "all text in between two occurrences of the separator character")
- Mode 3: The text found between the m-th and the n-th character following is extracted and processed further
  (= "all text in between two specific text positions")



Note:
For more information on the required VCON parameters please see:
➤ Section 4.3.2 "Overview of the configuration parameters".

2.6.1 Parsing Mode 1: The entire text until the end of the line

"parsing mode" = "all text until end of the line"

Description:

With this setting, the system extracts and processes the entire text that follows the trigger word, until the end of the line.

Example:

- Message line : Any text Time: 12:24
- VCON settings: Mode 1, trigger word is not output,
  Trigger word = Time: <Space>
- Extracted result text: **12:24**

2.6.2 Parsing Mode 2: The text in between configurable repeats of a separator character

"parsing mode" = "all text in between two occurrences of the separator character"

Description:

With this setting, the system extracts and processes the text that follows the trigger word and that is in between two occurrences of a specific separator character. The separator character that is defined here can also be administrated as ASCII value.

Example:

- Message line: Any text Time: 12.01.2015 12:24 Any text
- VCON settings: Mode 2, no output of the trigger word,
  Trigger word = Time:
  Separator character = <Space>
  begin result text at separator character occurrence: 2
  end result text at separator character occurrence: 3
- Extracted result text: 12:24

2.6.3 Parsing Mode 3: The text in between configurable character positions

"parsing mode" = "all text in between two specific text positions"

Description:

With this setting, the system extracts and processes the text that follows the trigger word and that is in between two specified character positions.

Example:

- Message line: Any text Time: 12:24:16 Any text
- VCON settings: Mode 3 with output of the trigger word,
  Trigger word = Time: <Space>
  begin result text at position: 1
  end result text at position: 5
- Extracted result text: Time: 12:24

2.7 Addressing

The addressing of receivers is carried out similar to the addressing of normal SMTP destinations.

Here are a few examples (SMTP server name in these example: "m2p.firma.com", name may vary):

- E-mail to the group as predefined in the OScAR-Server, with the identifier "1001":
  G1001@m2p.company.com
- E-mail to an individual subscriber with the call number "1234", using the default connection type:
  1234@m2p.company.com
- E-mail to an individual subscriber with the call number "5678", using a special connection type "QV1" (other than default connection type):
  5678.QV1@m2p.company.com

Note:
E-Mails can be sent to an unlimited number of individual subscribers.

2.8 Error handling

If errors are detected in OScAR while handling the Mail2Phone V5 process, they are automatically logged through VCON.

For certain errors, the system directly informs the sender of the e-mail (e.g. "Unable to deliver mail).

For other or for general errors, the system sends corresponding notification e-mails to the administrators:

➤ see Section 6.5 "Error handling".

3 Install and Uninstall Mail2Phone V5

Overview

This chapter shows you how to install and start the e-mail service Mail2PhoneV5.

Content

The following areas are covered in this chapter:

3.1 Overview

Mail2Phone V5 is a software for Windows 10, Windows Server 2016 und Windows Server 2019.

The realization of the SMTP and DNS protocol is based on the 821, 822, 1035 and 1521 RFCs.

Note:

Mail2Phone performs to the LAN as an e-mail server; it can therefore not be installed on a PC together with another e-mail server.

3.2 Requirements

The following requirements must be met to install Mail2Phone V5:

- Windows 10, Windows Server 2016 und Windows Server 2019 is already installed on your PC.
- The LAN connection must be set up with the TCP/IP protocol.
- The OScAR-Server must be ready for operation (OScAR Service Manual V5).
- You have a good basic knowledge of working with the Windows operating system.
- You have a basic knowledge of working with the tetronik service tool VCON (➤ OScAR Service Manual V5, Section "Service Tool VCON").
- An ESPA-X session for Mail2Phone V5 must be properly configured on the OScAR-Server via VCON.

Note:

Under Windows 10, Windows Server 2016 und Windows Server 2019 you must have Administrator rights to carry out the installation!

3.3 Install the Mail2Phone V5 software

Carry out the following steps to install the Mail2Phone V5 software on your PC:

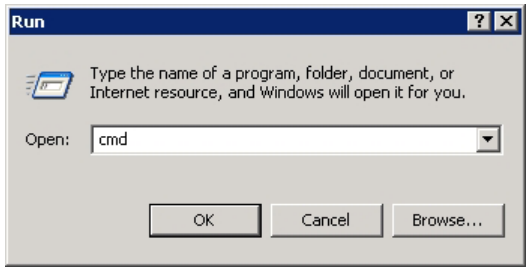
No.	Step	Window
1.	Insert the installation CD in the CD-ROM drive. If the installation software fails to start automatically, please start the CD installation manually from the Windows interface. To do so, use the menu command: Run... Go to the command line and enter: `<CD-Rom-Drive>:\cdsetup>`. e.g.: `d:\cdsetup`. Confirm your entries with OK.	

Table 3-1 Install Mail2Phone V5 software

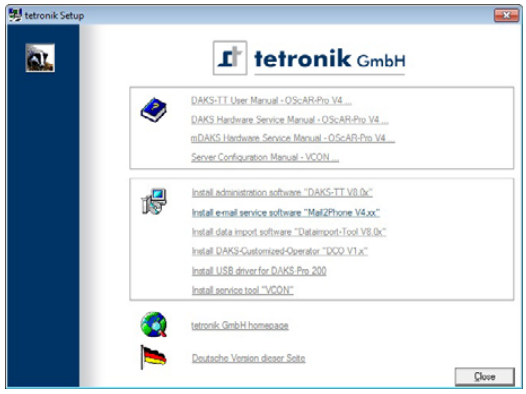
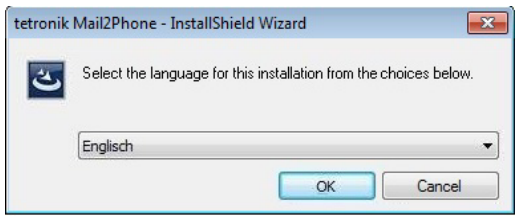
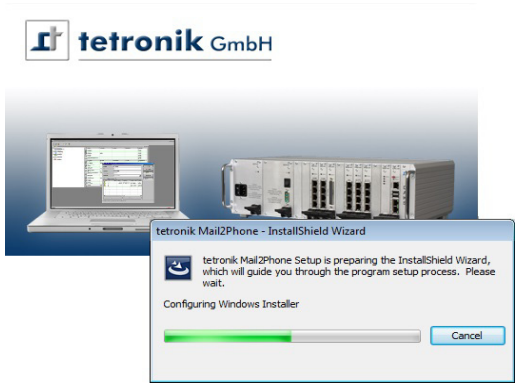
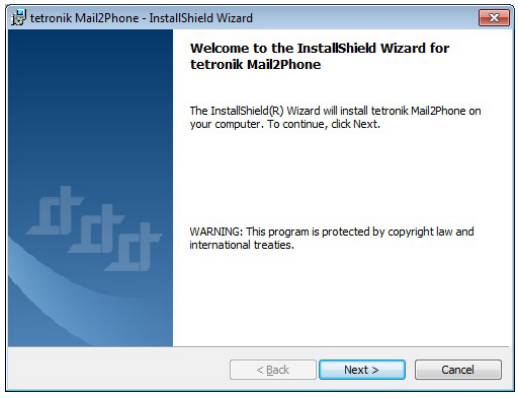
No.	Step	Window
2.	Click the menu item: "Install e-mail service software Mail2-PhoneV5.xx".	
3.	Select the language you want to use and confirm with Ok.	
4.	The installation is now initialized.	
5.	Now click Next.	

Table 3-1 Install Mail2Phone V5 software

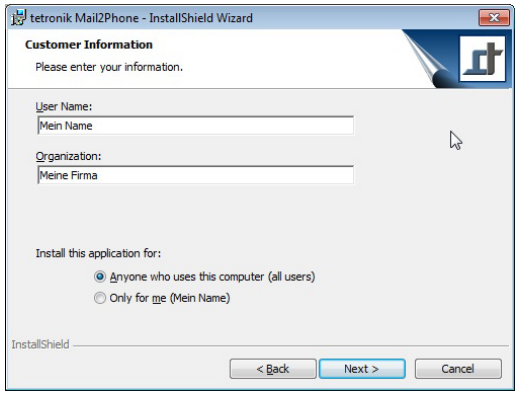
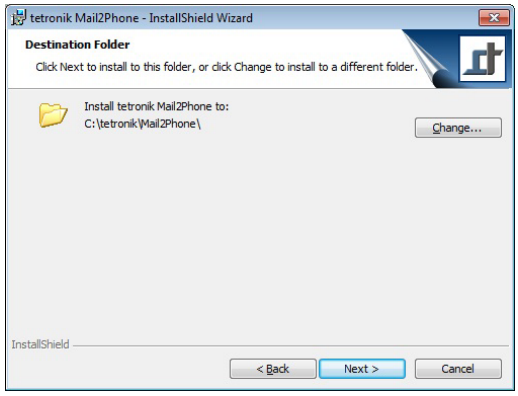
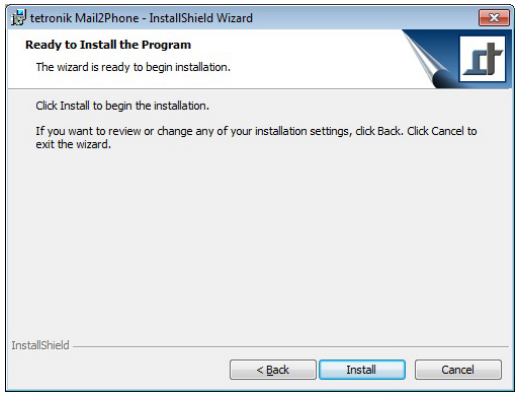
No.	Step	Window
6.	Enter the user name and the name of the organization or company. Specify if you want the software to be installed for all users of this PC, or only for you. Now click Next.	
7.	If needed, change the installation path of the software. The standard installation path is: `C:\tetronik\Mail2Phone.` Click Next.	
8.	Install the Mail2Phone V5 software on your PC. Click Install.	

Table 3-1 Install Mail2Phone V5 software

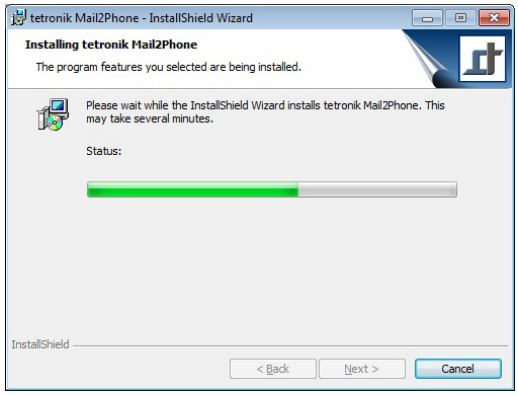
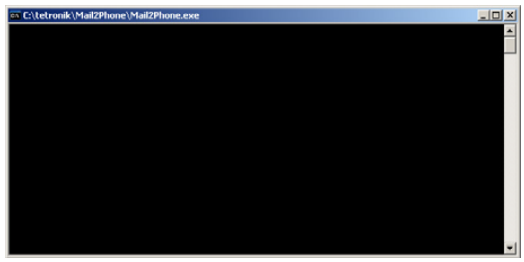
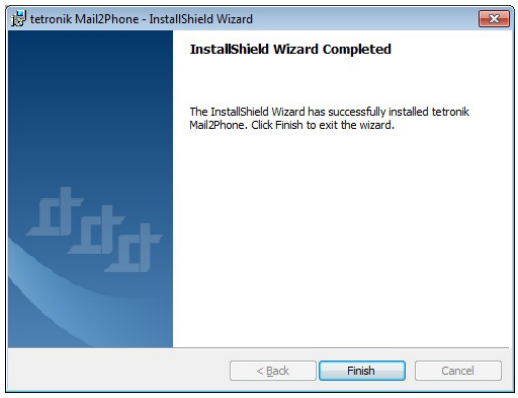
No.	Step	Window
9.	The software is now installed in the selected directory. The progress of the installation is shown with a blue progress bar.	
10.	During the installation process, Mail2Phone V5 is briefly started as a command line application and quits by itself.	
11.	Complete the installation process. To do so, click Finish. After the installation has been completed, Mail2Phone V5 is automatically started as a Windows service. Verify this process if needed using the services control area of Windows.	

Table 3-1 Install Mail2Phone V5 software

3.4 Program start of Mail2Phone V5

Mail2Phone V5 is installed as a Windows service and starts automatically when the PC boots.

Note:
For debugging, you can end, deactivate or start the Mail2Phone V5 service as an application by hand through the Windows service management.

3.5 Configuration of the ESPA-X interface of the OScAR-Server

In the OScAR-Server, use the configuration tool VCON to set up an ESPA-X interface for access to Mail2Phone V5.

➤ see OScAR Service Manual V5

3.6 Remove the Mail2Phone V5 software

The steps to uninstall the Mail2Phone V5 software are as usual under Windows. Please bear in mind that you need the administrator rights that are required under Windows to uninstall software (e.g. 'Administrator').

Carry out the following steps to uninstall the Mail2Phone V5 software from your PC:

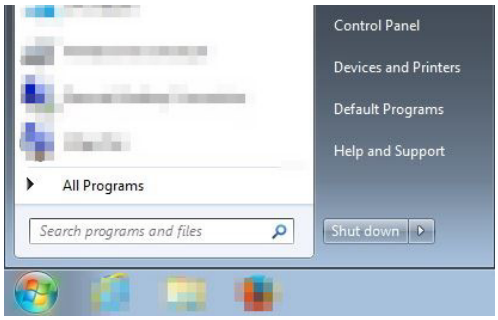
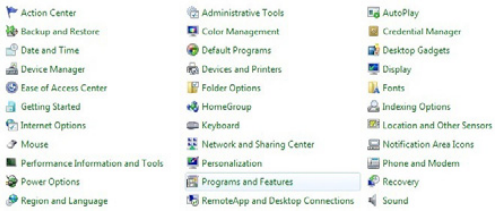
No.	Step	Window
1.	Open the Windows Control Panel.	
2.	Now click to open: "Software" or "Programs and Functions".	

Table 3-2 Remove Mail2Phone V5 software

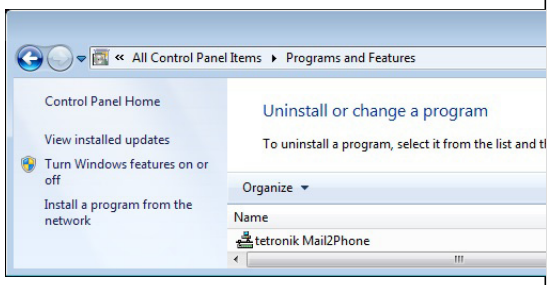
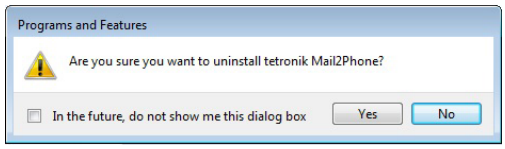
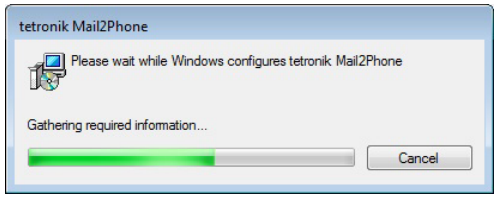
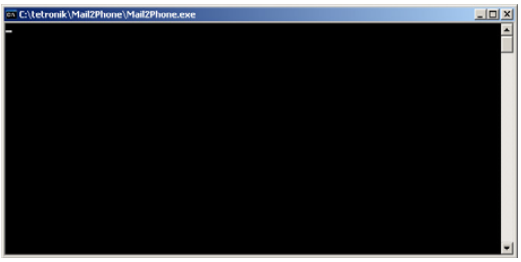
No.	Step	Window
3.	Select the entry: "tetronik Mail2Phone". Next, click Remove. This will start the uninstaller.	
4.	Confirm the uninstall process by clicking Yes.	
5.	Mail2Phone V5 is now uninstalled.	
6.	During the uninstall process, Mail2Phone V5 will briefly open as a command line application that quits by itself.	

Table 3-2 Remove Mail2Phone V5 software

4 Configuration Mail2Phone V5

Overview

This chapter shows you how to configure Mail2Phone V5.

Content

The following areas are covered in this chapter:

4.1 Overview

In contrast to the earlier versions of Mail2Phone that came with an own user interface, the configuration of "Mail2Phone V5" is carried out solely through the configuration tool VCON.

The following requirements must be met to configure Mail2Phone V5:

- Mail2Phone V5 must be installed as a service and must be started.
- You must be familiar with the tetronik service and configuration tool VCON;
  ➤ see OScAR Service Manual V5

4.2 Set up a VCON access

After completion of the installation, Mail2Phone V5 is already configured in such a way that you can log in directly via VCON with the user name "`user`" or "`service`".

Carry out the following steps only if you are sure that you want to block the VCON access entirely, or if you want to restrict the access level.

Otherwise, carry out the configuration as described in Section 4.3 "Configure Mail2Phone V5".

No.	Step
1.	Open the Windows services management. End and deactivate the service "tetronik Mail2Phone"
2.	Now open the Windows-Explorer. Open the installation directory of Mail2Phone V5, usually: `C:\tetronik\Mail2Phone`
3.	Start the Mail2Phone.exe as an application. This will open the command line window with Mail2Phone V5 as an application, usually with the title: `C:\tetronik\Mail2Phone\Mail2Phone.exe`
4.	Switch to the command line window. Enter `config`. Close your entry with Enter.

Table 4-1 Set up a VCON access

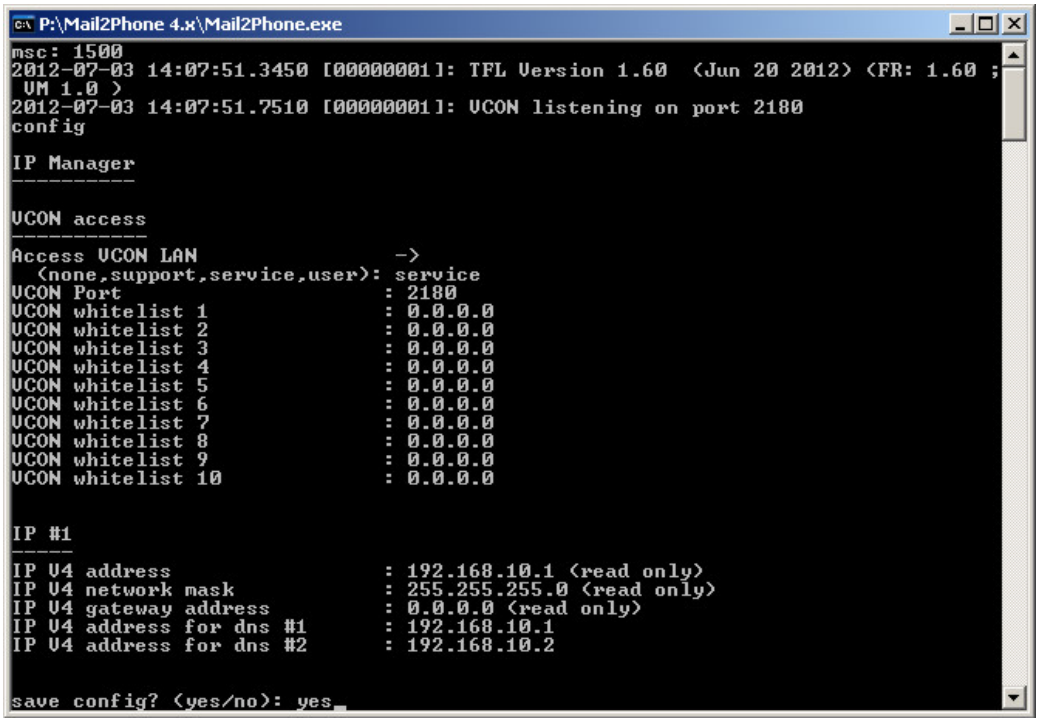
No.	Step
5.	Edit the VCON access and, if needed, additional parameters to best meet your requirements:  Enter the VCON access authorization. Confirm with <enter> or use the access authorization that is already given by pressing <enter>. • none — no access via TCP/IP • user — Allow access by user 'User'; settings can't be changed. • service — Allow access by user 'User' and 'Service; settings and updates can be changed. • support — Allow access by user 'User', 'Service' and 'Support'; full access for tetronik support (Level 3 Support).
6.	Save your changes. Answer the query save config? with yes.
7.	End Mail2Phone V5 as an application. To do so, enter swi. Finally, close your entry with Enter.
8.	Open the Windows services management. Activate and start the service "tetronik Mail2Phone".

Table 4-1 Set up a VCON access

4.3 Configure Mail2Phone V5

4.3.1 Start the configuration

Carry out the following steps to start Mail2Phone V5:

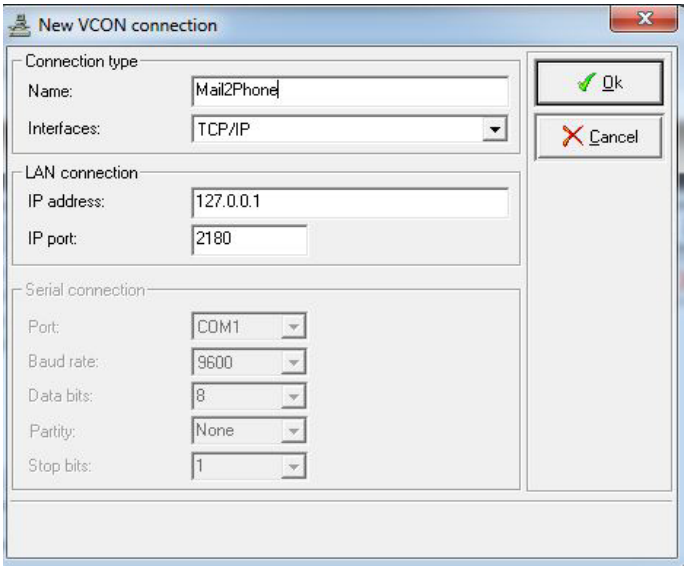
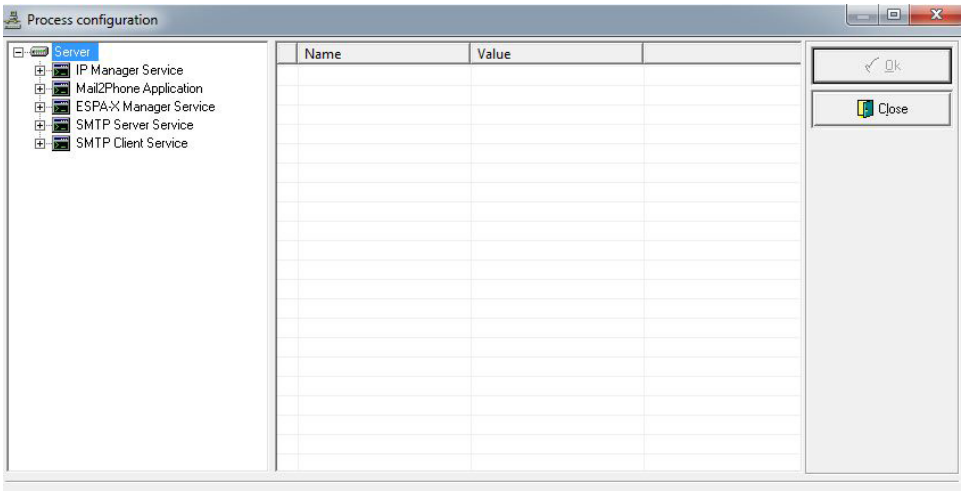
No.	Step
1.	Start VCON
2.	In VCON, set up a new connection for Mail2Phone V5.  • IP Address: `127.0.0.1` for local access • IP port: usually `2180` of the server where Mail2Phone V5 is installed, or `1270` Confirm with Ok.
3.	Connect VCON with Mail2Phone V5. Authenticate yourself with "service".
4.	Open the dialog "Configuration": 
5.	Make all necessary adjustments in keeping with the field descriptions that follow.
6.	Save the configuration start Mail2Phone V5 anew. To do so, click Ok or Save & Reboot.

Table 4-2 Configure Mail2Phone V5

4.3.2 Overview of the configuration parameters

The below table covers the configuration parameter that apply to Mail2Phone V5.

Caution!
Changes of parameters that are shown against a red background automatically trigger to a re-boot of Mail2Phone V5.
Please bear in mind that all received e-mails that have not yet been processed will be lost during the process.

Tree structure	Parameters	Value range	Description
+ Server			
+ IP Manager Service	Parameter of the IP interface		
- VCON access	Access via VCON		
	VCON port	0...65535 [2180]	Defines the IP port that is used by VCON to access Mail2Phone V5.
	VCON whitelist 1 ... VCON whitelist 10	IP-Address [0.0.0.0]	List with up to 10 IP addresses restricting the access to Mail2Phone V5 via VCON. To remove the restrictions altogether enter `0.0.0.0` in all fields.
- IP #1	Configure the IP interface		
	IP V5 address	IP address [local IP address]	READ-ONLY Shows the local IP address of the system where Mail2Phone V5 is installed.
	IP V5 network mask	Network mask [local network mask]	READ-ONLY Shows the network mask of the system where Mail2Phone V5 is installed.
	IP V5 gateway address	IP address [local default gateway]	READ-ONLY Shows the default gateway of the system where Mail2Phone V5 is installed.
	IP V5 address for dns #1	IP address [first DNS, entered locally]	Specifies the IP address of the first DNS used by Mail2Phone V5 to resolve computer and domain names. This field is preconfigured with the first DNS of the system where Mail2Phone V5 is installed.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	IP V5 address for dns #2	IP address [second DNS, entered locally]	Specifies the IP address of the second DNS that is used by Mail2Phone V5 to resolve computer and domain names. This field is preconfigured with the second DNS of the system where Mail2Phone V5 is installed.
+ Mail2Phone Application	Parameter of the Mail2Phone V5 application		
	Function	Character string [Mail2Phone]	READ-ONLY Shows the name of the application module.
	Component name	Character string [Application]	READ-ONLY Shows the name of the software component.
	Component type	Character string [Application]	READ-ONLY Shows the type of the software component.
+ Settings	Mail2Phone V5 application settings		
	waiting time	0...3600 [300]	Defines the wait time (in seconds) between send attempts in the direction of OScAR in the event that a send attempt is refused by OScAR because of insufficient ressources.
	call retries	0...3 [3]	Defines the maximum number of send attempts in the direction of OScAR in the event a send attempt is refused by OScAR because of insufficient ressources.
+ SingleCall	Special settings for single calls		
	trigger	A..Z [<empty>]	Defines the tag based on which an addressee can be identified in Mail2Phone V5 as an individual subscriber phone number.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	max calls	10...2000 [2000]	Defines the maximum number of calls (messages) in the direction of OScAR, that are allowed in the queue at one time. This value should be identical to the value "max. calls" of the EXPA-X session that is configured in OScAR for Mail2Phone V5. ➤ see OScAR Server Configuration Manual OScAR Rel.7.6x, V3 R2
	connection type	up to 3 characters [int]	Defines the connection type to be applied for for single calls. The value used here must be a valid connection type abbreviation and properly administrated in OScAR. ➤ see OScAR User Manual
	Calling name	up to 20´ characters [ ]	Specifies the alphanumeric information (the name) shown on the display of the subscriber when called.
	Calling number	up to 20 numeric signs [ ]	Specifies the phone number shown on the display of the subscriber when called.
	number of dialing attempts	1..20 [3]	Defines the number of call attempts (in the event the called subscriber fails to answer the call or if line busy).
	ringing time	0..120 [60]	Specifies the maximum length of the ringing time for each dialing attempt.
	announcement ID	up to 4 numeric signs [ ]	Defines the ID of the voice announcement that is played to the subscriber when he/she answers the call. The ID that is used here must be a valid voice announcement that is properly administrated in OScAR. ➤ see OScAR-TT User Manual

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	intrusion announcement ID	up to 4 numeric signs [ ]	Defines the ID of the voice announcement that is played into an ongoing call at intrusion. The ID that is used here must be a valid voice announcement that is properly administrated in OScAR. ➤seeOScAR-TTUserManual
	PIN announcement ID	up to 4 digits [ ]	Defines the ID of the voice announcement that is played when PIN entry is required.
	show subject line	no, [yes]	Specifies if the subject line is included in the e-mail to the subscriber.
	max. length of sender address	1..32, [all]	Defines the max. length of the sender's return address that as shown e-mail to the subscriber.
	show sender's address	no, at the end, [at the start]	Defines if and where (pre- or appended) the sender's return address is included in the e-mail to the subscriber.
	show real sender name (if avail.)	no, [yes]	Defines if the sender's name is included in the e-mail that is sent to the subscriber.
	add text before sender info	up to 20 characters [<]	Defines the character string that is prepended to the sender's e-mail address, in the message that is sent to the subscriber, e.g.: <1234@m2p.company.com>
	add text after sender info	up to 20 characters [>]	Defines the character string that is appended to the sender's e-mail address, in the message that is sent to the subscriber, e.g.: <1234@m2p.company.com>
	show no. of attachments (if any)	no info, [no. of attachments]	Defines if the number of e-mail attachments is included in the e-mail that is to the subscriber.
	add text before attachment info	up to 10 characters [(att:]	Defines the character string that is prepended to the number of attachments, in the e-mail that is sent to the subscriber, e.g.: (att:12)

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	add text after attachment info	up to 10 characters [ )]	Defines the Character string that is appended to the number of e-mail attachments, in the message that is sent to the subscriber, e.g.: `(att: 12)`
	parse message body	[no], yes	Defines if the message text (message body) is examined for specific trigger words, and only certain parts of the text are processed further.
- Priority high	Settings for high priority e-mails		
	ringing signal	normal, urgent (external), [alert (alarm ringing)]	Defines the ringing signal.
	reached criteria if confirmation requested	nothing, [pos/neg confirmation]	Defines the subscriber behavior that is requested if the e-mail comes with a confirmation request.
	reached criteria if no confirmation requested	pos/neg confirmation, [(nothing)]	Defines the subscriber behavior that is requested if the e-mail does not come with a confirmation request.
	behaviour if destination busy	camp-on, intrusion, emergency intrusion, forced release, [(none)]	Defines the special calling features in the event the line of the called subscriber is busy: camp on, forced release, intrusion, emergency intrusion.
	speaker phone control	yes, [no]	Defines if the special calling feature "Speakerphone control" shall be applied.
- Priority medium	Settings for medium priority e-mails (default)		
	ringing signal	normal, alert (alarm ringing) [urgent (external)]	Defines the ringing signal.
	reached criteria if confirmation requested	nothing, [pos/neg confirmation]	Defines the subscriber behavior that is requested if the e-mail comes with a confirmation request.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	reached criteria if no confirmation requested	pos/neg confirmation, [(nothing)]	Defines the subscriber behavior that is requested if the e-mail does not come with a confirmation request.
	behaviour if destination busy	camp-on, intrusion, emergency intrusion, forced release, [(none)]	Defines the special calling features in the event the line of the called subscriber is busy: camp on, forced release, intrusion, emergency intrusion.
	speaker phone control	yes, [no]	Defines if the special calling feature "Speakerphone control" shall be applied.
- Priority low	Settings for low priority e-mails		
	ringing signal	urgent (external), alert (alarm ringing), [normal]	Defines the ringing signal.
	reached criteria if confirmation requested	pos/neg confirmation, [nothing]	Defines the subscriber behavior that is requested if the e-mail comes with a confirmation request.
	reached criteria if no confirmation requested	pos/neg confirmation, [nothing]	Defines the subscriber behavior that is requested if the e-mail does not come with a confirmation request.
	speaker phone control	yes, [no]	Defines if the special calling feature "Speakerphone control" shall be applied.
- Parsing attribute #1.. #5	Only becomes visible if "parse message body" is set to: "yes"		
	trigger text	Characters 0... 30 [ ]	Defines the search text in the message body. Note: Text may contain special characters and space characters.
	case sensitivity	no, [yes]	Defines if case sensitivity is applied when searching the message body.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	prepend trigger text	no, [yes]	Defines if the trigger text is prepended to the extracted text results.
	parsing mode	all text in between two character occurrences of the separator character, all text in between two specific text positions, [all text until end of the line]	The type in which the text that follows the trigger word is processed: • only process text in between two configurable repeats of a specific ASCII value • only process the text that follows the trigger word in between two configurable positions • process the entire text until the end of the line
	Only becomes visible if "parsing mode" is set to: "all text between two character occurrences of the separator character"		
	hex code of the separator character	0x00.. 0xFF [0x20]	Defines the hex code of the wanted ASCII character.
	begin result text at separator character occurrence	1.. 200 [1]	Defines the number of the repeat (occurrence) of the ASCII character, starting from which the text is processed further.
	end result text at separator character occurrence	-1, 2.. 200 [-1]	Defines the number of the repeat (occurrence) of the ASCII character, up until which the text is processed further. Note: "-1" signifies: the system will extract and process the text until the end of the line.
	Only becomes visible if "parsing mode" is set to: "all text in between two specific text positions"		
	begin result text at position	1.. 200 [1]	Defines the position of the ASCII character, starting from which the text is processed further.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	end result text at position	-1, 2.. 200 [-1]	Defines the position of the ASCII character, up until which the text is processed further. Note: "-1" signifies: the system will extract the text until the end of the line.
+ GroupCall	Special settings for groups calls		
	trigger	<empty> A..Z [G]	Defines the tag that is used to identify an addressee in Mail2Phone V5 as a Broadcast ID administrated in OScAR.
	max calls	1...50 [50]	Defines the maximum number of calls (messages) in the direction of OScAR, that are allowed in the queue at one time. This value should be identical to the value "max. groups" of the EXPA-X session that is configured in OScAR for Mail2Phone V5.
	calling name	up to 20 characters [ ]	Specifies the alphanumeric information (the name) shown to the Broadcast group members on their displays when called.
	calling number	up to 20 numeric signs [ ]	Specifies the phone number that is shown to the Broadcast group members on their displays when called.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	announcement ID	up to 4 numeric signs [ ]	Defines the ID of the announcement that is played to the Broadcast group members when they take the call. The announcement that is entered here automatically replaces the announcements previously assigned in the Broadcast group header or to the Broadcast group members, respectively. If you want to use the predefined announcements of the Broadcast group instead, simply leave this field empty. Please bear in mind that the ID that is entered here must match a valid announcement administrated in OScAR. ➤seeOScAR-TTUserManual

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	show subject line	no, [yes]	Defines if the subject line of the e-mail is included in the e-mail that is sent to the Broadcast subscribers.
	max. length of sender address	1..32, [all]	Defines the maximum length with which the sender's return address is included in the message to the Broadcast group members.
	show e-mail sender address	no, at the end, [at the start]	Defines if and where (pre- or appended) the sender's return address is included in the message to the Broadcast group members.
	show real sender name (if avail.)	no, [yes]	Defines if the name of the e-mail sender is included in the message to the Broadcast group members.
	add text before sender info	up to 20 characters [<]	Defines the character string that is prepended to the sender's e-mail address, in the message that is sent to the subscriber, e.g.: `<1234@m2p.company.com>`
	add text after sender info	up to 20 characters [>]	Defines the character string that is appended to the sender's e-mail address, in the message that is sent to the subscriber, e.g.: `<1234@m2p.company.com>`
	show no. of attachments (if any)	no info, [no. of attachments]	Defines if the number of e-mail attachments is included in the e-mail that is to the subscriber.
	add text before attachment info	up to 10 characters [(att:]	Defines the character string that is prepended to the number of attachments, in the e-mail that is sent to the subscriber, e.g.: `(att:12)`
	add text after attachment info	up to 10 characters [)]	Defines the Character string that is appended to the number of e-mail attachments, in the message that is sent to the subscriber, e.g.: `(att:12)`

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
- Parsing attribute #1.. #5	parse message body	[no], yes	Defines if the message text (message body) is examined for different trigger words and only parts of the text are extracted.
	Only becomes visible if "parse message body" is set to: "yes"		
	trigger text	Characters 0... 30 [ ]	Defines the text for which the message body is browsed. Note: Text may contain special characters and space characters.
	case sensitive	no, [yes]	Defines if case sensitivity is applied when searching the message body.
	prepend trigger text	no, [yes]	Defines if the trigger text is prepended to the extracted text results.
	parsing mode	use text between character occurrence count, use text between character positions, [use text until end of the line]	Mode in which the text is extracted: • Text in between two configurable repeats of a specific ASCII value. • Text in between two configurable positions. • Until the end of the line.
	Only becomes visible if "parsing mode" is set to: "use text between character occurrence count"		
	hex code separator character	0x00.. 0xFF [0x20]	Defines the hex code of the wanted ASCII character.
	start at occurrence	1.. 200 [1]	Defines the number of the repeat (occurrence) of the ASCII character, starting from which the text is extracted.
	end at occurrence	-1, 2.. 200 [-1]	Defines the number of the repeat (occurrence) of the ASCII character, up until which the text is extracted. Note: "-1" signifies: the system will extract the text until the end of the line.
	Only becomes visible if "parsing mode" is set to: "use text between character positions"		

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	start at character position	1.. 200 [1]	Defines the position of the ASCII character, starting from which the text is extracted.
	end at character position	-1, 2.. 200 [-1]	Defines the position of the ASCII character, up until which the text is extracted. Note: "-1" signifies: the system will extract the text until the end of the line.
- StatusChange	Special administration settings		
	system admin 1st e-mail address	up to 260 characters [ ]	Defines the e-mail address of the first administrator for errors and status messages from Mail2Phone V5.
	system admin 2nd e-mail address	up to 260 characters [ ]	Defines the e-mail address of the second administrator for errors and status messages from Mail2Phone V5.
+ ESPA-X Manager Service	ESPA-X interface parameters		
	Function	Character string [ESPA-X Manager]	READ-ONLY Shows the name of the application module.
	component name	Character string [Services]	READ-ONLY Shows the name of the software component.
	component type	Character string [Services]	READ-ONLY Shows the type of the software component.
+ ESPA-X connections	Settings of the ESPA-X connections to OScAR		
- ESPA-X-Client-1	Settings of the first connection		
	ESPA-X client name	up to 30 characters [ESPAX client]	Defines the name used by Mail2Phone V5 to authenticate itself at he 1st OScAR server.
	ESPA-X server login name	up to 12 characters [sysadm]	Defines the login name used by Mail2Phone V5 to authenticate itself at the 1st OScAR server for its ESPA-X session.
	ESPA-X server login password	up to 12 characters [sysadm]	Defines the login password used by Mail2Phone V5 to authenticate itself at the 1st OScAR server for its ESPA-X session.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	IP port	0..65535	Defines the IP port used by the 1st OScAR server to listen for incoming ESPA-X connections.
	IP host	IP address [0.0.0.0]	Defines the IP address of the 1st OScAR-Server.
	heartbeat interval (sec)	5..110 [55]	Defines the interval between two ESPA-X heartbeats at the 1st OScAR server.
- ESPA-X-Client-2	Settings of the second connection		
	ESPA-X client name	up to 30 characters [ESPAX client]	Defines the name used by Mail2Phone V5 to identify itself at the 2nd OScAR server.
	ESPA-X server login name	up to 12 characters [sysadm]	Defines login name used by Mail2Phone V5 to authenticate at the 2nd OScAR-Server for its ESPA-X session.
	ESPA-X server login password	up to 12 characters [sysadm]	Defines login password used by Mail2Phone V5 to authenticate at 2nd OScAR-Server for ESPA-X session.
	IP port	0..65535	Defines the IP port used by the 2nd OScAR server to listen for incoming ESPA-X connections.
	IP host	IP address [0.0.0.0]	Defines the IP address of the 2nd OScAR-Server
	heartbeat interval (sec)	5..110 [55]	Defines the interval between two ESPA-X heartbeats at the 2nd OScAR server.
+ SMTP Server Service	Parameters of the SMTP server		
	Function	Character string [SMTP Server]	READ-ONLY Shows the name of the application module.
	Component name	Character string [Services]	READ-ONLY Shows the name of the software component.
	Component type	Character string [Services]	READ-ONLY Shows the type of the software component.
- Server	Settings of the SMTP server		
	SMTP server port	0..65535 [25]	Defines the IP port used by Mail2Phone V5 to receive e-mails.
	SMTP server domain name	up to 40 characters [example.com]	Defines the name of the mail domain represented by Mail2Phone V5.

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description

Table 4-3 Description of the configuration parameters

Tree structure	Parameters	Value range	Description
	SMTP whitelist #1	IP Address [0.0.0.0]	List containing up to 10 IP addresses of other systems that are authorized to send e-mails to Mail2Phone V5. To remove the restrictions altogether enter `0.0.0.0` in all fields.
	...		
	SMTP whitelist #10		
+ SMTP Client Service	Parameters of the SMTP Client		
	Function	Character string [SMTP Client]	READ-ONLY Shows the name of the application module.
	component name	Character string [Services]	READ-ONLY Shows the name of the software component.
	Component type	Character string [Services]	READ-ONLY Shows the type of the software component.
- Client	Settings of the SMTP Client		
	IP host relay server 1	IP Address [0.0.0.0]	Defines the IP address of the first relay server that forwards the return e-mails which are sent from Mail2Phone V5.
	IP port relay server 1	0..65535 [25]	Defines the IP port used by the first relay server to receive e-mails.
	IP host relay server 2	IP Address [0.0.0.0]	Defines the IP address of the second relay server that forwards the return e-mails which are sent from Mail2Phone V5.
	IP port relay server 2	0..65535 [25]	Defines the IP port used by the second relay server to receive e-mails.
	SMTP default sender mail address	up to 260 characters [ ]	Defines the default address of the sender for e-mails that are sent by Mail2Phone V5.
	SMTP default sender real name	up to 50 characters [ ]	Defines the default name of the sender for e-mails that are sent by Mail2Phone V5.
	Retry e-mail dispatch	1..10 [3]	Defines the max. number of repeat attempts for the dispatch of e-mails.
	E-mail retry interval	1..9999 [300]	Defines the interval between 2 retries for the dispatch of e-mails, in seconds.

Table 4-3 Description of the configuration parameters

Note:
For debugging, you can end, deactivate or start the Mail2Phone V5 service as an application by hand through the Windows service management.

4.3.3 Parameter changes that take immediate effect

For the following parameters, all changes will take immediate effect. This means that changes that are made here immediately alter the subscriber behavior, also for all calls that are currently in the queue.

Parameter path: `Mail2Phone Application -> Settings -> SingleCall.`

This behavior applies to the following parameters:

- `Ringtime`,
- `Announcement ID`,
- `Intrusion announcement ID`
- `Behaviour if destination busy`
  (in the sections: "`Priority high`" and "`Priority medium`")

4.4 Commands in the VCON status window "Mail2Phone Application"

The "Mail2Phone Application" supports the following commands for debugging and testing purposes: Enter these commands in the VCON status window "Mail2Phone Application". The results of the commands are shown in the same window:

`status`	Shows the ESPA-X processes that are currently up and running or waiting in the queue.
`testmail`	Sends a test mail to the administrators that are listed at `Mail2Phone: Application -> Settings -> Status-Change`.
`testcall`	Triggers a single or group call via ESPA-X: Syntax: `testcall <xxx> <message>`, e.g.: `testcall 6024 Hello World` (single call) or: `testcall G1000 Hello World` (group call)

Table 4-4 Commands in the VCON status window "Mail2Phone Application"

4.5 Commands in the VCON status window "SMTP Client Service"

The "`SMTP Client Service`" supports the command `status` for debugging and testing purposes. This command is entered in the VCON Status Window "`SMTP Client Service`". The results of are shown in the same window:

`status`	Shows the delivery status for all e-mails that are currently ongoing and still queuing.

Table 4-5 Commands in the VCON status window "SMTP Client Service"

5 Start-Up Testing

Overview

This chapter show you how to carry out the start-up testing.

Content

The following areas are covered in this chapter:

5.1 Overview

We recommend you carry out the following tests before sending mails to Mail2Phone V5 from mail systems:

- Section 5.2 "Test out-bound calls from Mail2Phone V5"
- Section 5.3 "Test the TCP/IP connection from a separate PC to Mail2Phone V5"

For this purpose you must define, record and assign the relevant (i.e. valid) announcements in OScAR. Also, the service Mail2Phone V5 must be up and running, a connection must exist between Mail2Phone V5 and the OScAR-Server, and the SMTP server of Mail2Phone V5 must be ready to receive mails.

For this purpose, please make sure that:

- The Mail2Phone V5 process is active and running in the Windows services management,
- The ESPA-X session configured for Mail2Phone V5 is active and this is shown in the status indicator of the OScAR-TT Operator-Tool (double click the field at the right margin of the status bar),
- No errors are reported by the configuration tool VCON (in combination with the Mail2Phone V5 service) in:
  - the "SMTP Server Service" status window.
  - nor in the "Mail2Phone Application" status window

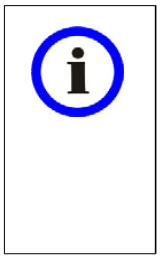
  an error has been reported.

Integration in the LAN or SMTP infrastructure

Towards LAN, Mail2Phone V5 acts like a standard SMTP mail server.

To be able to address the PC with Mail2Phone V5 from the LAN, the LAN administrator must:

- assign a static TCP/IP address to this PC and
- assign a name to the mail domain on the DNS (Domain Name Server) which can be used to access Mail2Phone V5 (for example "`m2p.company>.de`").



Note:

Make sure that the mail domain configured in the Domain Name Server (DNS) is properly entered in Mail2PhoneV5, and there under:

```
SMTP Server Service -> Server -> SMTP server domain name
```

➤ see Section 4.3.2 "Overview of the configuration parameters".

5.2 Test out-bound calls from Mail2Phone V5

Connection tests can be carried from the administration window to verify the correct configuration:

- Test the connection between Mail2Phone V5 and a test phone number
- Test the connection between Mail2Phone V5 and the configured administrators

5.2.1 Test the connection between Mail2Phone V5 and a test phone number

The following criteria must be met to test the functionality of Mail2Phone V5 via the OScAR-Server and the PBX to the telephone:

- the indicated call number can be reached,
- the parameters for single calls are correct,
  (`Mail2Phone Application -> Settings -> SingleCall`),
- the configured announcement ID is valid and an announcement is properly provided to it,
  (`Mail2Phone Application -> Settings -> Single Call -> Announcement ID`)
- the connection between the OScAR-Server and the PBX is up and running.

During the test the following parameter is applied:
`Mail2Phone Application -> Settings -> SingleCall -> Priority medium -> Reached criteria if no mail confirmation requested`.

Please follow the instructions below to run the connection test:

No.	Step
1.	In the Windows services management, verify if the Mail2Phone V5 service is up and running.
2.	Start VCON and login with "`service`".
3.	Activate the VCON status window "Mail2Phone Application". Enter: `testcall <xxx> Test` (<*xxx*> is the phone number that shall be called). Finally, close your entry with Enter.
4.	Answer the telephone of the called subscriber. Among other things, the display should indicate: `Test`. If needed, use the * key or the # key to scroll the message (function depends on handset that is used).

Table 5-1 Test the connection between Mail2Phone V5 and the configured phone number

5.2.2 Test the connection between Mail2Phone V5 and configured administrators

The connection test for the functionality of the e-mail dispatch is e.g. needed for confirmation requests.

To test the functionality of the e-mail dispatch, the parameters of the "SMTP Client Service" must be properly configured. The system uses the sender that is entered there. A test e-mail is addressed to all administrators that are entered under:

`Mail2Phone Application -> Settings -> StatusChange.`

➤ see Section 4.3.2 "Overview of the configuration parameters"

Follow the below instructions to test the functionality of dispatch of the notification e-mails:

No.	Step
1.	In the Windows services management, verify if the Mail2Phone V5 service is up and running.
2.	Start VCON and login with "`service`".
3.	Activate the VCON status window "Mail2Phone Application". Enter: `testmail` Finally, close your entry with Enter.
4.	Check the proper receipt of the e-mails at the mail clients of the configured administrators, for example via MS Outlook.

Table 5-2 Mail2Phone V5 connection test via LAN, to the configured e-mail client

5.3 Test the TCP/IP connection from a separate PC to Mail2Phone V5

Connection tests can be carried out via Telnet to check that the LAN connection is correct:

- Test the connection via Telnet (TCP/IP terminal)
- SMTP testmail via Telnet

5.3.1 Test the connection via Telnet (TCP/IP terminal)

First, a test should be carried out to verify if a TCP/IP connection to Mail2Phone V5 can be established from a separate PC.

Please follow the instructions below to run the connection test:

No.	Step
1.	In the Windows services management, verify if the Mail2Phone V5 service is up and running.
2.	Start VCON and login with "`service`".
3.	In the VCON status window, verify if the "SMTP Server Service" is ready-to-receive. ➤ see Section 5.3.4 "".
4.	Start Telnet from a separate PC in the LAN.
5.	Set up a connection with Mail2Phone V5 via the TCP/IP port 25 and the terminal emulation VT100. We recommend you activate the local echo of your inputs. For further details please see the User Manual of your Telnet application.

Table 5-3 Test the connection via Telnet (TCP/IP terminal)

No.	Step
6.	The Mail2Phone V5 application should now appear in your Telnet window, e.g. as: `220 mypc.m2p.firma.com (4.00) Service ready`

Table 5-3 Test the connection via Telnet (TCP/IP terminal)

5.3.2 Additional information on the display in the Telnet window

Output	Description
`220`	Positive confirmation from Mail2Phone V5 (generally `220` according to SMTP specification)
`mypc`	Example of the name of the system where Mail2Phone V5 is installed (purs. to control panel `Network -> Identification`)
m2p.company.com	The name as entered under `SMTP Server Service -> Server -> Server domain name`.
`(4.00)`	The software version and revision of Mail2Phone V5

Table 5-4 Description of "Display in the Telnet window"

5.3.3 SMTP testmail via Telnet

Once the SMTP connection test via Telnet has run successfully, you can also send an e-mail via Telnet. To do so, we recommend you change the Telnet terminal settings to local echo to verify your inputs.

The following criteria must be met for a successful test:

- the registered destination can be reached,
- the parameters for single calls are correct, (`Mail2Phone Application -> Settings -> SingleCall`),
- the configured announcement ID is valid and its assigned announcement is properly recorded (`Mail2Phone Application -> Settings -> SingleCall -> Announcement ID`),
- the connection between the OScAR-Server and the PBX is up and running.

Follow the below instructions to send a test e-mail via Telnet:

No.	Step
1.	Start Telnet locally or from another PC in the LAN.
2.	Set up a connection with the Mail2Phone V5 computer via the TCP/IP port 25 and the terminal emulation VT100. We recommend you activate the local echo of your inputs. For further details please see the User Manual of your Telnet application.
3.	The Mail2Phone V5 application should now appear in your Telnet window, e.g. as: `220 mypc.m2p.firma.com (4.00) Service ready`
4.	Now enter the settings in the Telnet window in keeping with the below table. Note that the entries are case-sensitive, i. e. please keep to the upper and lower case and make sure you complete your entries with the "Return" key or with "Enter", respectively. After your last entry, the telephone of the subscriber should begin to ring.
5.	Answer the telephone of the called subscriber. The test message you configured should now appear on the display.

Table 5-5 Send SMTP test e-mail via Telnet

5.3.4 Entries and responses in the Telnet window

Entry:	HELO
Mail2Phone V5 responds with:	250 OK
Entry:	MAIL FROM: <*XXXX@YYYY.ZZ*> (any XXXX, YYYY and ZZ)
Mail2Phone V5 responds with:	250 OK
Entry:	RCPT TO: <number@ domain> with number: the internal phone number of the test subscriber; domain: Name entered under -> SMTP Server Service -> Server -> SMTP server domain name
Mail2Phone V5 responds with:	250 OK
Entry:	DATA
Mail2Phone V5 responds with:	354 Send data. End with CRLF.CRLF
Entry:	ENTER <your message> ENTER.ENTER
Mail2Phone V5 responds with:	250 OK
Entry:	QUIT
Mail2Phone V5 answers e.g. with:	221 mypc.m2p.company.com (4.00) Service closing transmission channel After approx. 10 seconds, Mail2Phone V5 cuts the connection to Telnet.

Table 5-6 Entries and responses in the Telnet window:

Note:
Mail2Phone V5 responds to incorrect entries with a relevant error code in keeping with the RFCs 821, 822, 1035 and 1521.
Please bear in mind that if no valid header is entered in the testmail in keeping with the aforementioned RFCs, the system will still call the telephone or start the group call, but it may happen that an error message may be output on the display nonetheless.

6 Background Information, Support of Protocol Elements

Overview

This chapter is designed to provide background information and details on the protocol elements that are supported.

Content

The following areas are covered in this chapter:

6.1 Receipt of e-mail messages

E-mails can only be received if a connection has been set up successfully between Mail2Phone V5 and OScAR.

When e-mails are received, OScAR runs through the following mechanisms:

- Confirm the "Connection-Request" received from the sending e-mail server positive, and open the receiving port.
- Carry out the formalities defined via SMTP protocol (➤ see RFCs).
- Interpret the SMTP data area to obtain the additional information saved in the MIME format.
- Convert the user data in keeping with the coding specified in the MIME header.
- Transfer addresses, MIME information and user data to the handling process.
- Confirm at SMTP level and end the connection.

6.1.1 SMTP (Simple Mail Transfer Protocol) at receipt of message

The e-mail protocol that is used here is the Simple Mail Transfer Protocol (SMTP).

The default TCP/IP receiving port for SMTP is port 25 (configurable).

OScAR supports the following SMTP protocol elements:

Protocol element	Description
HELO	greeting, if applicable also exchange of performance features
MAIL FROM	address of sender
RCPT TO	address(es) of destination
DATA	area of user data within the SMTP protocol
NOOP	prompts the receiver to send nothing but OK.
HELP	transfers to the sender the SMTP command set that is utilized
QUIT	ends a transfer and leads to the termination of the connection

Table 6-1 Supported SMTP protocol elements

Caution!
Please note that OScAR does not support the extended SMTP protocol (triggered with EHLO)!

6.1.2 MIME (Multipurpose Internet Mail Extension) for message receipt

In the DATA area of the SMTP protocol, additional or less standardized information and also your own supplementary details can be transferred via the MIME protocol.

Supported MIME trigger words include:

Trigger word	Description
`MIME Version:`	To date only Version 1.0 valid
`Subject:`	text from the subject line
`Content Type:`	Coding format for the message, as well as indication if the message consists of a single text or of several attached files.
`Content-Transfer-Encoding:`	belongs to `Content-Type`
`Content-Disposition:`	belongs to `Content-Type`
`Return Receipt To:`	Return address (e-mail format or name), if the e-mail senders wants a confirmation
`Sender:`	address of sender (e-mail format or name)
`To:`	addressee in e-mail format
`Date:`	date and time of dispatch
`X Sender:`	➤ see "`Sender`"
`Priority:`	Importance of a mail: `URGENT` = priority is high, `NON-URGENT` = priority is low
`Importance:`	➤ see "`Priority`": `HIGH` = high, `MED` = medium, `LOW` = low
`X Priority:`	➤ see "`Importance`": `1` = high, `3` = medium, `5` = low

Table 6-2 Supported MIME trigger words

Note:
Due to the fact that the corresponding RFCs leave ample room for interpretation, and because the different e-mail programs encode the MIME information that shall be transmitted in different ways, there is no guarantee that the pertinent MIME trigger words are transferred, or that they can be interpreted correctly.

6.2 Dispatch of e-mail messages

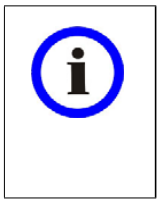
General information

The following mechanisms apply when sending e-mails:

- Acceptance of addresses, MIME information and user data by the handling process.
- Convert the user data in keeping with the coding specified in the MIME header.
- Compilation of the MIME information for the transmission.
- Verification, if relay servers are entered (VCON: `SMTP Client Service -> Client -> SMTP relay server`), and if these servers are able to forward the message.

  If `Yes`:
  - The e-mail is sent to the relay server.

  If `No`:
  - DNS inquiry to the pertinent e-mail address, to identify the proper mail server.
  - Set up a connection with the identified e-mail server (in keeping with the highest MX priority)
  - transmit the mail
  - If the attempt fails: address the next identified mail server, if needed (in keeping with the next lower MX priority).
- Run through the formalities as specified in the SMTP protocol.
- Transfer the MIME- and user data.
- Confirm at SMTP level, and end the connection.



Note:
In the event the e-mails can temporarily not be sent, for example because the mail server in charge fails to respond, several mails can be buffered in the "SMTP Client Service". However, the buffered e-mails will be lost as soon as the Mail2Phone V5 is ended/stopped.

The sender module is used to temporarily store several DNS entries for an outgoing e-mail.

6.2.1 DNS (Domain Name Server) query at message dispatch

The default IP port for a DNS name resolution via the UDP protocol is 53 (editable). To identify the TCP address of an e-mail name, the DNS server queries the MX record.

6.2.2 SMTP (Simple Mail Transfer Protocol) for dispatch of messages

The following elements are used as SMTP protocol elements:

Protocol element	Description
`HELO`	greeting, specification of performance features
`MAIL FROM`	address of sender
`RCPT TO`	addressee (one destination per mail)
`DATA`	area of user data within the SMTP protocol
`QUIT`	end transfer; terminate connection

Table 6-3 SMTP protocol elements for sending messages

6.2.3 MIME (Multipurpose Internet Mail Extension) at messages dispatch

The following words are used as trigger words:

Trigger word	Description
`From:`	address of sender, in e-mail format or with names
`To:`	repeat of the addressee, in e-mail format
`Subject:`	text of subject line
`Date:`	date and time of dispatch
`X Priority:`	`HIGH`= high, `MED` = medium, `LOW` = low
`MIME Version:`	`1.0`
`Content Type:`	`text/plain`
`Content-Trans-fer-Encoding:`	`quoted-printable`

Table 6-4 MIME trigger words for sending messages

6.3 Functionality in the direction OScAR-Server

6.3.1 Coupling and establishing a connection

Immediately after the start of the Mail2Phone V5 service, Mail2Phone V5 tries to connect, via ESPA-X, with the configured 1st OScAR and to login there.

If the connect or login attempt fails, the Mail2Phone V5 service will retry every 10 seconds, alternating between the two configured OScAR-Servers. During this process, preference is given to OScAR-Server 1; if one of the OScAR-Servers should be in hot standby mode, the other server will be used.

The licenses are requested automatically by the OScAR-Server.

If no user data is exchanged between Mail2Phone V5 and OScAR over a longer period of time, a heartbeat (ESPA-X HEARTBEAT) is transmitted instead (time interval is configurable under:

`ESPA-X Manager Service -> ESPA-X connections -> ESPA-X-Client-`*n* `-> heart-beat interval`).

6.3.2 Calls to single subscribers

For messages that shall be sent to single subscribers, the system starts an ESPA-X single call process.

On condition the results of the subscriber notification have been received by OScAR and the sender requested a confirmation, the following details are reported back to the sender:

- the overall single call results for the notification and
- the message transmitted to the subscriber.

6.3.3 Group calls

For messages that shall be transmitted to a broadcast group administrated in OScAR, the system will start an ESPA-X group call process.

If, after the end of the broadcast, a final group call result has been received by OScAR and the sender requested a confirmation, the following details are reported back to the sender:

- the overall group call result and
- the message transmitted to the subscribers.

6.4 Log files

The logging (protocols) is carried out through VCON. Here, both the "Mail2Phone Application" as well as every other "Service" can be monitored (e.g. "`SMTP Server Service`"), through the matching status window in VCON.

6.5 Error handling

If, during the processing of e-mails within the ESPA-X communication, errors occur between Mail2Phone V5 and OScAR, they are detected by Mail2Phone V5.

When an error is detected, Mail2Phone V5 will send the request to OScAR again, if needed also repeatedly. The number of retries is configurable under:

`Mail2Phone Application -> Settings -> Call retries`.

If the retries also fail, or if errors are again detected, both the sender of the e-mail and the administrator(s) are informed accordingly by e-mail.

If the ESPA-X connection between Mail2Phone V5 and OScAR is lost, Mail2Phone V5 automatically sends a pertinent notification e-mail to the administrator(s).

All errors (cannot be masked) are output in the VCON status windows, and also in the VCON protocol.