

# *WaveNet*

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**SCHUEMPERLIN ENGINEERING AG**

**Moosburgstr. 2**

**CH-8307 EFFRETIKON Switzerland**

**phone +41 52 355 1660 fax +41 52 355 1666**

**info@schuemperlin.com**

**www.schuemperlin.com**



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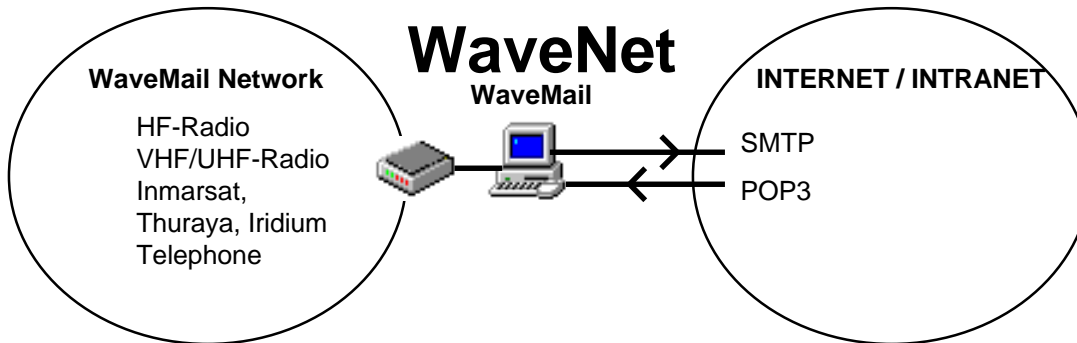
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## 1. Overview

**WaveNet** is a WaveMail\* to Internet or Intranet Gateway. WaveNet can also be used as part of a gateway between WaveMail and another e-mail system that has an Internet gateway. In this case the Internet technology is used as the common element of both mail systems.

(\* WaveMail is an e-mail software which is optimized for efficient messaging over radio modems, Inmarsat telephones and ordinary telephone modems.)



**WaveNet** transfers messages between a WaveMail network and the Internet or an Intranet. WaveNet connects to a SMTP server to send messages to the Internet. WaveNet connects to a POP3 server to receive messages from the Internet.

### **How WaveNet handles messages from WaveMail to Internet**

WaveNet picks up messages from WaveMail (the message format has already been converted by WaveMail). WaveNet checks whether the sender or any recipient of a message should be filtered. Then WaveNet translates the senders WaveMail-address to an Internet-address (this will allow the recipient(s) of the message to reply). The message is then transferred to an SMTP server.

### **How WaveNet handles messages from Internet to WaveMail**

WaveNet retrieves messages from a POP3 account (all messages that should be handled by WaveNet must be delivered to a single POP3 account). WaveNet then extracts recipients from the TO: and CC: header fields of the message. WaveNet checks whether the sender or any recipient of a message should be filtered. WaveNet translates the recipients addresses from the Internet-address to the corresponding WaveMail-address. Then WaveNet moves the message to WaveMail for forwarding (WaveMail will perform the conversion of the message format).

## **2. System Requirements**

### **2.1. PC running WaveNet**

PC with Windows 95, 98, NT 4.0, 2000, XP  
80486 processor or better  
128 MB RAM or more recommended

The PC must have access to SMTP and POP3 servers on the Internet (or Intranet).

### **2.2. POP3 account**

A POP3 (Post Office Protocol) account must be installed which is then used by WaveNet to retrieve messages from the Internet/Intranet for WaveMail. All messages from the Internet/Intranet to WaveMail must be directed to this POP3 account.

## **3. Background Information**

### **3.1. Message Flow**

#### **3.1.1. Internet/Intranet -> WaveMail direction**

WaveNet retrieves messages (from Internet to WaveMail) from a single POP3 account. Therefore messages for all WaveMail users must be delivered to this POP3 account. WaveNet extracts the recipients from the TO: and CC: headers of the message. WaveNet translates the recipients Internet-Addresses to the corresponding WaveMail-Addresses and forwards the message to WaveMail.

#### **3.1.2. WaveMail -> Internet/Intranet direction**

WaveNet picks up messages from WaveMail. Then, WaveNet translates the Senders WaveMail-Address to an Internet-Address. Translating the senders (WaveMail sender) address allows the Internet recipient to easily reply to the sender. WaveNet then forwards messages to the SMTP server.

### **3.2. Deliver messages for WaveMail to one POP3 account**

How to deliver messages for all WaveMail users to one POP3 account? This can be done in 2 ways:

1. Use a domain or subdomain for addressing Internet to WaveMail messages. Set up the mailserver to deliver all messages addressed to the desired domain or subdomain to a POP3 account. WaveNet can then map addresses between Internet and WaveMail without entering an Address Translation Table. WaveNet will interpret the address part in front of the subdomain as the WaveMail address of the recipient. This is the preferred method for large WaveMail networks.  
(example: subdomain           wm.company.com  
          e-mail address   wavemailaddress@wm.company.com)

or

2. Set up an individual Internet e-mail account for every WaveMail user and forward the messages of all these accounts to one single POP3 account. In this case, a specific address translation must be entered for every WaveMail user. WaveNet then uses the information of the 'Specific Address Translation' list for address mapping.

### 3.3. Address Mapping

When WaveNet transfers messages between WaveMail and the Internet/Intranet, addresses must be translated/mapped. The Configuration - Address Mapping dialog is used to define address mapping.

#### 3.3.1. Internet/Intranet -> WaveMail direction

WaveNet retrieves messages (from Internet to WaveMail) from a single POP3 account. WaveNet extracts the recipients from the TO: and CC: headers of the message. WaveNet handles those recipients, whose address is found in the Specific Address Translation list (Configuration - Address Mapping) or whose address matches with the WaveMail Domain Name defined in Configuration - Address Mapping. Other recipients are ignored (a message might be addressed to a mixture of WaveMail recipients and Non-WaveMail recipients).

If a recipients address is found in the Specific Address Translation list, then the address is replaced by the corresponding WaveMail address.

If a recipients address matches with the defined WaveMail Domain Name, then WaveNet uses the local part of the address as WaveMail address.

example:

WaveMail Domain Name:	@wm.company.com
Recipients Address:	joe.nairobi@wm.company.com
Translated Address:	joe.nairobi

#### 3.3.2. WaveMail -> Internet/Intranet direction

WaveNet translates the senders WaveMail-Address to an Internet-Address when forwarding a message from WaveMail to the Internet.

If the senders WaveMail-Address is found in the Specific Address Translation list (Configuration - Address Mapping), WaveNet uses that information for address mapping. If the Senders WaveMail-Address is not found, and a WaveMail Domain Name is defined in the Configuration - Address Mapping dialog, then WaveNet uses the WaveMail Domain Name to map the senders address.

example:

WaveMail Domain Name:	@wm.company.com
Senders WaveMail Address:	joe.nairobi
Translated Address:	joe.nairobi@wm.company.com



## **4. Installing and Configuring WaveNet**

### **4.1. Before you begin**

#### **4.1.1. WaveMail should be installed first**

WaveNet should be installed on one PC in a WaveMail network. The same PC or a PC on the same LAN must run WaveMail. It is assumed that WaveMail has already been installed before you install WaveNet.

#### **4.1.2. Necessary information**

You should gather some information before installing WaveNet:

Value	Description
SMTP Server	Server used to send messages from WaveMail to the Internet/Intranet example: mail.isp.com
POP3 Server	Server used to receive messages from the Internet/Intranet for WaveMail example: pop.isp.com
POP3 Account	POP3 account on the POP3 server
POP3 Password	Password for the POP3 account
License Code	The License Code is used to protect the software from illegal use. You obtain the License Code from the supplier of this software. The License Code is related to the values of SMTP Server, POP3 Server and POP3 Account. Therefore you must communicate the values for these 3 items together with the Serial Nr to the supplier of this software in order to get the License Code.

#### **4.1.3. Checking Internet/Intranet access**

Check that the PC that should run WaveNet has access to the SMTP and POP3 servers. If you are using Dial-Up access, you must have a working Dial-Up Service installed .

## 4.2. Install WaveNet

Insert the WaveNet diskette into the diskette drive and run SETUP.EXE from the diskette. Follow the instructions of the installation program.

## 4.3. Start WaveNet

Use the START button in Windows then go to Programs, then WaveMail (as default, WaveNet is added to the WaveMail program group), then click on WaveNet.

### Hint:

Add WaveNet to the Autostart folder if you want WaveNet to automatically start everytime Windows is started.

### 4.3.1. Help

Use function key F1 to get context sensitive help information in WaveNet.

## 4.4. WaveNet General Configuration

### 4.4.1. Server Access

Select 'manually' in the 'Connect mailserver' box for your first attempts. You can later select 'at regular intervals' or 'at specific times' to enable automatic server access.

If you use Dial-Up access:

- check the Use Dial-Up access checkbox
- select the Dial-Up Service and enter the password for the Dial-Up access in the Dial-Up Password field.

### 4.4.2. SMTP and POP3 Servers, License Code

Select the SMTP and POP3 servers page of the configuration dialog. Enter the names of the SMTP and POP3 servers to be used. Enter the POP3 account and password. Enter the License Code.

The License Code is used to protect the software from illegal use. You obtain the License Code from the supplier of this software. The License Code is related to the values of SMTP Server, POP3 Server and POP3 Account. Therefore you must communicate the values for these 3 items together with the WaveNet Serial Nr to the supplier of this software in order to get the License Code.

### 4.4.3. WaveMail Directory

Select the Directories page of the configuration dialog.

Enter the directory where WaveMail is installed. (Use SETUP - SHOW PARAMETERS in WaveMail to see what the WaveMail directory is). If WaveMail is running on a different PC on the LAN, then you have to enter the shared name of the WaveMail directory. WaveNet needs full read and write access to the WaveMail directory and its subdirectories.

### 4.5. WaveNet Address Mapping

Select Address Mapping from the Configuration menu.

If you are using a domain or subdomain to map WaveMail and Internet addresses, then you can just enter the domain name (including '@'). Messages from the Internet addressed to a WaveMail user will need addresses of the form `wavemailaddress@domain`,  
example: `joe.nairobi@wm.company.com`.

If you are not using a domain or subdomain to map WaveMail and Internet addresses, then you have to enter an address pair for every WaveMail user that should be allowed to send or receive mail to/from the Internet.

### 4.6. Change WaveMail configuration

You must tell WaveMail that an Internet Gateway is installed on this station. To do this, you must edit WAVEMAIL.INI. Use a simple editor (e.g. NOTEPAD.EXE) to edit the WAVEMAIL.INI file.

(default path: `c:\programs\wavemail\program\wavemail.ini`)

Insert the following lines at the top of the file:

```
[Gateways]
SMTP:=
```

The change of the WAVEMAIL.INI file will only take effect, after you restart WaveMail.

#### **Important:**

WAVEMAIL.INI may only contain 1 line with:

```
[Gateways]
```

therefore you only need to add the line:

```
SMTP:=
```

if WAVEMAIL.INI already contains the `[Gateways]` line.

## **5. Screen**

The main screen contains 3 pages with logging information.

### **Log Summary**

Everytime a connection to the the SMTP and POP3 servers is established, one line is inserted at the top of the log. The 'Result' column may either indicate 'OK' or 'ERROR'. In case of 'ERROR' you can check the Error Log page to get more information. The 'Messages transferred' column indicates the number of messages sent/received to/from the Internet.

The newest entry is always inserted at the top. If the Log Summary contains more than 200 entries, the oldest entries are automatically deleted.

### **Log Details**

Every message transferred is logged with Date, Direction, Sender and Message-Id.

The newest entry is always inserted at the top. If the Log Details contains more than 400 entries, the oldest entries are automatically deleted.

### **Error Log**

Detailed error information.

The newest entry is always inserted at the top. If the Error Log contains more than 200 entries, the oldest entries are automatically deleted.

## **6. Menu**

### **6.1. File**

Exit                                      Exit from WaveNet

### **6.2. Connection**

Connect to SMTP and POP3 servers      Manually start an exchange of messages with Internet mailservers. You would normally not need this function, as WaveNet can be configured to automatically start message exchange at regular intervals or at specific times.

Force Disconnect                          Abort an active connection with Internet mailservers.

### **6.3. Configuration**

General                                      Define general settings like:  
When and how to access Internet/Intranet mailservers  
SMTP server  
POP3 server  
POP3 Account and Password  
License Code  
WaveMail directory

Address Mapping                            Define mapping between WaveMail addresses and Internet e-mail addresses

Address Filters                              Define filtering of senders and recipients

### **6.4. Help**

Help    Show help (you can always use F1 to show context sensitive help)

About    Display version and copyright information

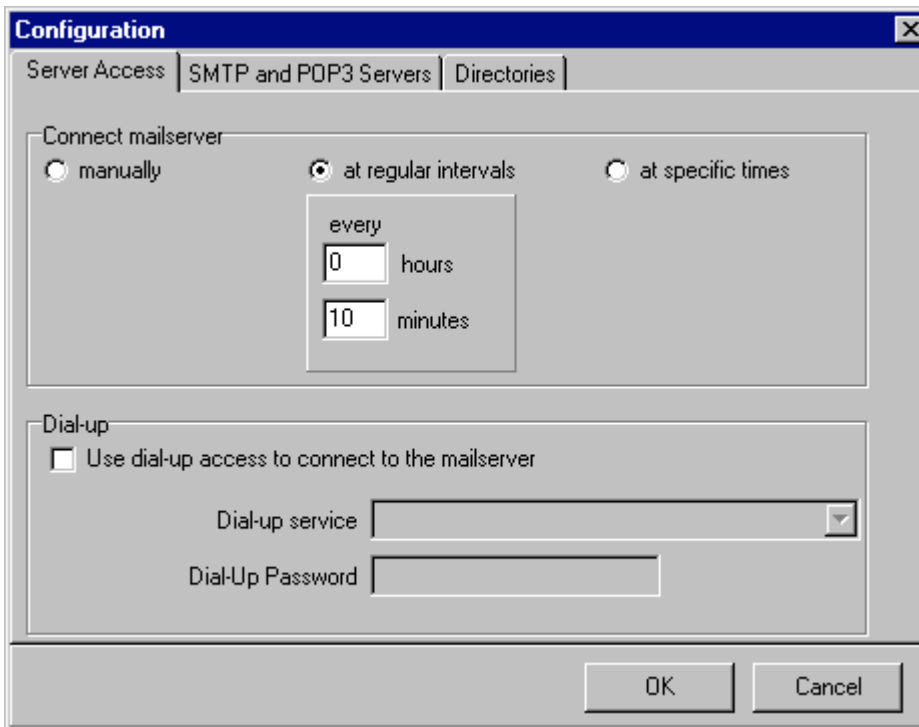
## **7. Configuration**

### **7.1. General**

Select General from the Configuration menu to open the dialog for general settings.

#### **7.1.1. Server Access**

Use the Server Access page to define when and how to access the SMTP and POP3 mailservers.



#### **Connect mailserver**

'manually'

If you select 'manually', WaveNet will only connect to the Internet mailservers when the operator selects 'Connect to SMTP and POP3 servers' from the CONNECTION menu.

'at regular intervals'

This option allows you to enter an interval in hours and minutes. WaveNet will automatically connect to the Internet mailservers at the defined intervals.

'at specific times'

This option allows you to enter a list of specific times. WaveNet will automatically connect to the Internet mailservers at the specified times. Times have to be entered in the hh:mm format (e.g. 17:15);

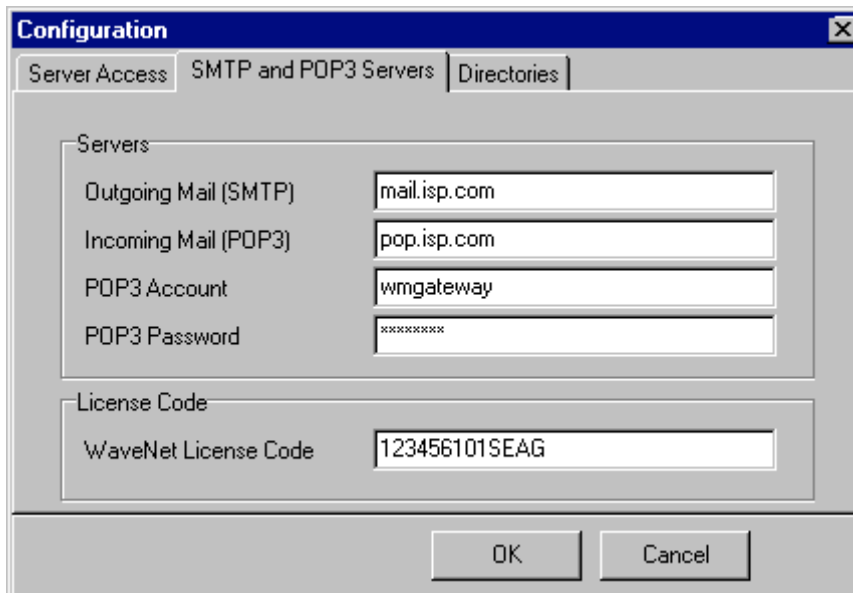
If you select 'at regular intervals' with a short interval, you will achieve the fastest forwarding times. However if you are using Dial-Up access to the mailservers, you might want to select longer intervals or specific times in order to reduce connection cost.

## Dial-Up

If you are using a modem to connect to the Internet, you should check the 'Use Dial-Up to connect to the mailserv' checkbox. You should then also select the 'Dial-Up service' to be used (see Windows help to install a Dial-Up service) and enter the password used for the Dial-Up service.

### 7.1.2. SMTP and POP3 Servers

Use the SMTP and POP3 Servers page to define the servers, POP3 account and License Code.



The screenshot shows a 'Configuration' dialog box with three tabs: 'Server Access', 'SMTP and POP3 Servers', and 'Directories'. The 'SMTP and POP3 Servers' tab is active. It contains two main sections: 'Servers' and 'License Code'. The 'Servers' section has four input fields: 'Outgoing Mail (SMTP)' with 'mail.isp.com', 'Incoming Mail (POP3)' with 'pop.isp.com', 'POP3 Account' with 'wmgateway', and 'POP3 Password' with '\*\*\*\*\*'. The 'License Code' section has one input field: 'WaveNet License Code' with '123456101SEAG'. At the bottom are 'OK' and 'Cancel' buttons.

#### SMTP Server

Enter the name of the mailserv used to send messages to the Internet (e.g. 'mail.isp.com').

#### POP3Server

Enter the name of the POP3 server used to retrieve messages from the Internet (e.g. pop.isp.com').

#### POP3 Account

Enter the name of the POP3 account that receives messages from the Internet which are destined for WaveMail users.

#### POP3 Password

The password to get access to the POP3 account.

### **License Code**

The License Code is used to protect the software from illegal use. You obtain the License Code from the supplier of this software. The License Code is related to the values of

- SMTP Server
- POP Server
- POP3 Account.

Therefore you must communicate the values for these 3 items together with the WaveMail Serial Nr to the supplier of this software in order to get the License Code.

### **7.1.3. Directories**

Use the Directories page to define the directory where WaveMail is installed. This information is needed by WaveNet to exchange messages with WaveMail.

#### **WaveMail Directory**

Enter the directory where WaveMail is installed. (Use SETUP - SHOW PARAMETERS in WaveMail to see what the WaveMail directory is). If WaveMail is running on a different PC on the LAN, then you have to enter the shared name of the WaveMail directory. WaveNet needs full read and write access to the WaveMail directory and its subdirectories.



## 7.2. Address Mapping

Select Address Mapping from the Configuration menu to configure address mapping. See chapter 'Background Information' to better understand address mapping in WaveNet.

### WaveMail Domain Name

If you are using a domain or subdomain to map WaveMail and Internet addresses, then you can just enter the domain name (including '@'). Messages from the Internet addressed to a WaveMail user will need addresses of the form `wavemailaddress@domain`,  
example `joe.nairobi@wm.company.com`.

### Specific Address Translation

If you are not using a domain or subdomain to map WaveMail and Internet addresses, then you have to enter an address pair for every WaveMail user that should be allowed to send or receive mail to/from the Internet.

**Address mapping**

WaveMail Domain Name

Example: '@wm.company.com'

Specific Address Translation

Internet Address	WaveMail Address
kigali@wm.company.com	gp:kigalipt

Add  
Edit  
Remove

OK Cancel

#### 7.2.1. Stations using GLPLUS or RLPLUS software

If you have stations using GLPLUS or RLPLUS software, you need to add an entry for each of those stations into the 'Specific Address Translation' list. GLPLUS and RLPLUS WaveMail addresses are of the form `gp:callsign`, however the colon ':' should not be used in Internet addresses.

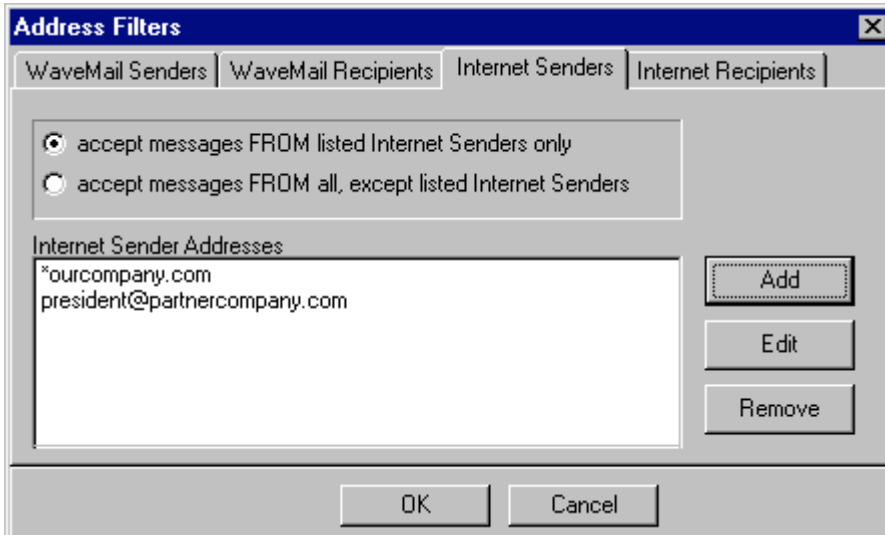
example:

Internet Address	WaveMail Address
kigali@wm.company.com	gp:kigalipt

The GLPLUS station with the Pactor call 'kigalipt' is mapped to the Internet address 'kigali@wm.company.com'

### 7.3. Address Filters

Address filters can be used to restrict WaveMail-Internet traffic to certain senders and recipients. For each type of address (WaveMail Sender, WaveMail Recipient, Internet Sender, Internet Recipient) either a positive or negative list can be built.



With the Internet Senders filter set as in this example, only messages from senders with addresses that end with 'ourcompany.com' and messages from 'president@partnercompany.com' are accepted.

The asterisk '\*' is used as a wildcard. The wildcard may only be used at the beginning or at the end of an address.

### 7.3.1. WaveMail Senders

The WaveMail Senders page allows you to define which WaveMail senders are allowed to send messages to the Internet.

#### **accept messages from listed WaveMail Senders only**

Select this option if only a limited number of WaveMail users is allowed to send messages to Internet recipients. Add the addresses of the authorized WaveMail senders to the 'WaveMail Sender Addresses' listbox.

#### **accept messages from all, except listed WaveMail Senders**

Select this option if all or most WaveMail senders are allowed to send messages to the Internet. Add the addresses of non-authorized WaveMail senders to the 'WaveMail Sender Addresses' listbox.

#### **WaveMail Sender Addresses**

This list contains addresses of authorized / non-authorized WaveMail senders. Wildcards can be used to include groups of addresses in the list. The asterisk '\*' is used as a wildcard. The wildcard may only be used at the beginning or at the end of an address.

examples:

jim.kabul	user jim of station kabul is included in the list
*kigali	all users at station kigali are included in the list
nairobi	the postmaster of nairobi is included in the list

If a non-authorized WaveMail station is attempting to send a message to an Internet recipient, the message will not be forwarded and a non-delivery notification is returned to the sender.

### 7.3.2. WaveMail Recipients

The WaveMail Recipients page allows you to define which WaveMail recipients are allowed to receive messages from Internet senders.

#### **accept messages FOR listed WaveMail Recipients only**

Select this option if Internet senders may only send messages to a limited number of WaveMail recipients. Add the addresses of allowed WaveMail recipients to the 'WaveMail Recipient Addresses' listbox.

#### **accept messages FOR all, except listed WaveMail Recipients**

Select this option if Internet senders may send messages to all or to most WaveMail recipients. Add the addresses of prohibited WaveMail recipients to the 'WaveMail Recipient Addresses' listbox.

#### **WaveMail Recipient Addresses**

This list contains addresses of allowed / prohibited WaveMail recipients. Wildcards can be used to include groups of addresses in the list.

The asterisk '\*' is used as a wildcard. The wildcard may only be used at the beginning or at the end of an address.

examples:

jim.kabul	user jim of station kabul is included in the list
*kigali	all users at station kigali are included in the list
nairobi	the postmaster of nairobi is included in the list

If a message is addressed to prohibited WaveMail recipients, a non-delivery notification is returned to the sender.

### 7.3.3. Internet Senders

The Internet Senders page allows you to define which Internet senders are allowed to send messages to WaveMail recipients.

#### **accept messages from listed Internet Senders only**

Select this option if only a limited number of Internet users is allowed to send messages to WaveMail recipients. Add the addresses of the authorized Internet senders to the 'Internet Sender Addresses' listbox.

#### **accept messages from all, except listed Internet Senders**

Select this option if all or most Internet senders are allowed to send messages to WaveMail recipients. Add the addresses of non-authorized Internet senders to the 'Internet Sender Addresses' listbox.

#### **Internet Sender Addresses**

This list contains addresses of authorized / non-authorized Internet senders. Wildcards can be used to include groups of addresses in the list. The asterisk '\*' is used as a wildcard. The wildcard may only be used at the beginning or at the end of an address.

examples:

joe@company1.com

\*@company2.com

\*.org

'joe@company1.com' is included in the list

all senders of domain 'company2.com' are included in the list

all senders of 'org' domain are included in the list

If a non-authorized Internet sender is attempting to send a message to a WaveMail recipient, the message will not be forwarded and a non-delivery notification is returned to the sender.

### 7.3.4. Internet Recipients

The Internet Recipients page allows you to define which Internet recipients are allowed to receive messages from WaveMail senders.

#### **accept messages FOR listed Internet Recipients only**

Select this option if WaveMail senders may only send messages to a limited number of Internet recipients. Add the addresses of allowed Internet recipients to the 'Internet Recipient Addresses' listbox.

#### **accept messages FOR all, except listed Internet Recipients**

Select this option if WaveMail senders may send messages to all or to most Internet recipients. Add the addresses of prohibited Internet recipients to the 'Internet Recipient Addresses' listbox.

#### **Internet Recipient Addresses**

This list contains addresses of allowed / prohibited Internet recipients. Wildcards can be used to include groups of addresses in the list.

The asterisk '\*' is used as a wildcard. The wildcard may only be used at the beginning or at the end of an address.

examples:

joe@company1.com

\*@company2.com

\*.org

'joe@company1.com' is included in the list

all recipients of domain 'company2.com' are included in the list

all recipients of 'org' domain are included in the list

If a message is addressed to prohibited Internet recipients, a non-delivery notification is returned to the sender.

## 8. Log Files

### 8.1. Summary Log .WSL

WaveNet writes a summary of every connection with Internet/Intranet mailservers to a daily log file in the Log subdirectory of the WaveNet directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WSL (example 09021998.WSL for 9th Feb. 1998). Columns in the log files are separated by Tab (decimal 9) signs.

Column	Description
Time	Date and time of connection to mailservers
Result	<b>OK</b> : everything went fine <b>ERROR</b> : an error occurred
Msgs Received	Number of messages received from Internet/Intranet
Msgs Sent	Number of messages sent to Internet/Intranet

### 8.2. Receive Log .WRL

WaveNet writes an entry for every message received from the Internet/Intranet mailserver to a daily log file in the Log subdirectory of the WaveNet directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WRL (example 09021998.WRL for 9th Feb. 1998). Columns in the log files are separated by Tab (decimal 9) signs.

Column	Description
Time	Date and time of connection to mailservers
Direction	always <b>From Internet</b>
Sender	Senders address
Message-Id	Message-Id of message

### 8.3. Transmit Log .WTL

WaveNet writes an entry for every message sent to the Internet/Intranet mailserver to a daily log file in the Log subdirectory of the WaveNet directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WTL (example 09021998.WTL for 9th Feb. 1998). Columns in the log files are separated by Tab (decimal 9) signs.

Column	Description
Time	Date and time of connection to mailservers
Direction	always <b>To Internet</b>
Sender	Senders address (Internet address)
Message-Id	Message-Id of message

### 8.4. Error Log .WEL

WaveNet writes an entry for errors that occur during connections with Internet/Intranet mailservers to a daily log file in the Log subdirectory of the WaveNet directory. A new file is created for every day. Log files are automatically deleted after 60 days. The log filenames are created after the following scheme: ddmmyyyy.WEL (example 09021998.WEL for 9th Feb. 1998). Columns in the log files are separated by Tab (decimal 9) signs.

Column	Description
Time	Date and time of connection to mailservers
Error	Description of error
Sender	Sender of message (only available if the error is related to the a specific message)
Recipient	Recipient of message (only available if the error is related to a specific recipient)
Message-Id	Message-Id of message (only available if the error is related to a specific message)
Direction	<b>I&gt;W</b> : Internet to WaveMail <b>W&gt;I</b> : WaveMail to Internet



Notes: