

Nokia 9110 Communicator Setting Up E-mail service

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TABLE OF CONTENTS

1. OVERVIEW	3
2. THE COMMUNICATOR AND MAIL INTEROPERABILITY	3
2.1 Requirements	3
3. RECEIVING AND SENDING EMAIL WITH THE COMMUNICATOR.....	3
3.1 Attachments.....	3
4. FEATURES OF THE COMMUNICATOR MAIL CLIENT.....	3
4.1 Mail Notification Via SMS	3
4.2 E-mail Configuration Using Smart SMS	9
4.3 About Text Support.....	9
5. MAIL SYSTEMS AND THE COMMUNICATOR.....	9
5.1 Mail Systems Which Support POP3 or IMAP4	9
5.2 Mail Systems with Special Solutions for the Communicator	9

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Mobile Phones
3.1

21.04.99

1. OVERVIEW

This document contains guidelines for developing and implementing e-mail service for the Nokia 9110 Communicator.

2. THE COMMUNICATOR AND MAIL INTEROPERABILITY

The remote mail client in the communicator has been optimized for mobile workers who read their e-mail in the office at a desktop PC as well as with the Nokia 9110 Communicator while out of the office.

2.1 Requirements

- TCP/IP connection between the communicator and the user's e-mail server for reading e-mail.
- POP3 or IMAP4 protocol support from the remote mail server for retrieving mail. Both of these protocols are commonly supported by the latest mail servers.
- SMTP support from mail server for sending mail.
- The X.400 mail system is not supported.

3. RECEIVING AND SENDING EMAIL WITH THE COMMUNICATOR

The communicator supports POP3 or IMAP4-protocols for retrieving e-mail. IMAP4 is recommended, since it enables the user to access different folders and to determine whether or not to retrieve the attachments. Information about existing IMAP4 server implementations can be found at the IMAP information center, <http://www.washington.edu/imap/>. An introduction to message access paradigms and a comparison between POP and IMAP can be found at <http://www.imap.org/imap.vs.pop.brief.html>.

The mail client in the Nokia 9110 Communicator sends e-mail using the SMTP (RFC821) protocol. Extensions to the SMTP protocol are not used.

3.1 Attachments

The Nokia 9110 Communicator mail client can handle attachments to both incoming and outgoing e-mail. Attachments to incoming e-mail messages can be saved to the Downloaded files folder. ASCII text and JPEG or GIF graphics can be viewed on the communicator. Attachments which cannot be viewed on the communicator can be downloaded to a PC for viewing. Files from the Own texts folder, the Downloaded files folder or the Memory card if it is inserted can be attached to outgoing mail messages.

4. FEATURES OF THE COMMUNICATOR MAIL CLIENT

4.1 Mail Notification Via SMS

It is possible to send a Short Message to the Nokia 9110 Communicator which can inform the user of new e-mail messages. The software for sending this special SMS must be created by the service provider or a 3rd party software developer. Here is the description of the message format.

The general format is as follows:

<mail_notify_msg> ::= <header> <new_amount> [<field>+]

Mobile Phones
3.1

21.04.99

Where:

<header> ::= (<mail_header> | <nbs_header>) <crlf>

Distinguishes this kind of smart message from normal short messages and, for example, from configuration smart messages.

Where:

<mail_header> ::= "//MLAP11"

<nbs_header> ::= "//SCKL1588" | "//SCKL15881588" <hex_digit> <hex_digit> <hex_digit> <hex_digit>
<hex_digit> <hex_digit>

Where:

<hex_digit> ::= "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9" | "A" | "B" | "C" | "D" | "E" | "F"

<crlf> ::= 0xd | 0xa | 0xd 0xa

<new_amount> ::= <nz_digit><digit>* [<comment>] <crlf>

Determines the number of new mail messages in the remote mailbox.

Where:

<nz_digit> ::= <"1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">

<digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">

<comment> ::= <ws_char>+ <char>*

Where:

<ws_char> ::= 0x20 | 0x9

<char> ::= 'any char except <0xd | 0xa | 0xd 0xa>'

<crlf> ::= 0xd | 0xa | 0xd 0xa

<field> ::= <from> | <subject> | <size> | <uid> | <server_id> | <attachments> | <to> | <cc> | <date> |
<folder> | <sender> | <reply_to> | <uid_validity> | <extension_field>

Where:

<from> ::= "from:" <ws_char>* <rfc822_address> <crlf>

Determines the sender of the mail message.

Where:

<ws_char> ::= 0x20 | 0x9

<rfc822_address> ::= <mailbox> | <group> ; see RFC822

<crlf> ::= 0xd | 0xa | 0xd 0xa

<subject> ::= "subject:" <ws_char>* <char>* <crlf>

Determines the subject of the mail message.

Where:

<ws_char> ::= 0x20 | 0x9

<char> ::= 'any char except <0xd | 0xa | 0xd 0xa>'

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3.1

21.04.99

<crLf> ::= 0xd | 0xa | 0xd 0xa

<size> ::= "size:" <ws_char>* <nz_digit> <digit>* <ws_char>* ("lines" | "kB") <crLf>

Determines the size of the mail message in lines or kilobytes.

Where:

<ws_char> ::= 0x20 | 0x9
 <nz_digit> ::= <"1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <crLf> ::= 0xd | 0xa | 0xd 0xa

<uid> ::= <imap_uid> | <pop_uid>

Identifies the mail message in the server. The name of this field defines the used protocol. This field provides one way to fetch or delete mail message without fetching all headers first.

Where:

<imap_uid> ::= "iuid:" <ws_char>* <nz_digit> <digit>* <crLf> ; max 10 digits
 <pop_uid> ::= "puuid:" <ws_char>* <7_bit_char>+ <crLf> ; max 70 chars

Where:

<ws_char> ::= 0x20 | 0x9
 <nz_digit> ::= <"1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <crLf> ::= 0xd | 0xa | 0xd 0xa
 <7_bit_char> ::= 'any 7-bit char except <crLf>'

<server_id> ::= "sid:" <ws_char>* <digit> <digit> <digit> <crLf>

Identifies the server to which the new mail message has arrived. This is a simple hash value calculated from the connection name, username, server name and port number.

Where:

<ws_char> ::= 0x20 | 0x9
 <digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <crLf> ::= 0xd | 0xa | 0xd 0xa

<attachments> ::= "att:" <ws_char>* <digit>+ <crLf>

Determines the number of attachments in mail message.

Where:

<ws_char> ::= 0x20 | 0x9
 <digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
 <crLf> ::= 0xd | 0xa | 0xd 0xa

<to> ::= "to:" <ws_char>* <rfc822_address> ("," <rfc822_address>)* [<truncate_comment>] <crLf>

Determines the To-recipients of the mail message. This field can be truncated so that all To-addresses are not included to the mail notification smart message. That should be indicated by inserting comment in parenthesis as last address of To-field. The comment should be such that user understands that all To-addresses are not included in the mail notification smart message.

Where:

`<ws_char>` ::= 0x20 | 0x9
`<rfc822_address>` ::= `<mailbox>` | `<group>` ; see RFC822
`<truncate_comment>` ::= "(" <'any char except <0xd | 0xa | 0xd 0xa>'>* ")"
`<crLf>` ::= 0xd | 0xa | 0xd 0xa

`<cc>` ::= "cc:" `<ws_char>`* `<rfc822_address>` ("," `<rfc822_address>`)* [`<truncate_comment>`] `<crLf>`

Determines the Cc-recipients of the mail message. This field can be truncated so that all Cc-addresses are not included to the mail notification smart message. That should be indicated by inserting comment in parenthesis as last address of Cc-field. The comment should be such that user understands that all Cc-addresses are not included in the mail notification smart message.

Where:

`<ws_char>` ::= 0x20 | 0x9
`<rfc822_address>` ::= `<mailbox>` | `<group>` ; see RFC822
`<truncate_comment>` ::= "(" <'any char except <0xd | 0xa | 0xd 0xa>'>* ")"
`<crLf>` ::= 0xd | 0xa | 0xd 0xa

`<date>` ::= "date:" `<ws_char>`* `<rfc822_date>` `<crLf>`

Determines the date when the mail message is sent.

Where:

`<ws_char>` ::= 0x20 | 0x9
`<rfc822_date>` ::= [`<day>` ","] `<digit>` [`<digit>`] 0x20 `<month>` 0x20 `<year>` 0x20 `<time>`

Where:

`<day>` ::= "Mon" | "Tue" | "Wed" | "Thu" | "Fri" | "Sat" | "Sun"
`<month>` ::= "Jan" | "Feb" | "Mar" | "Apr" | "May" | "Jun" | "Jul" | "Aug" | "Sep" | "Oct" | "Nov" | "Dec"
`<year>` ::= `<digit>` `<digit>` `<digit>` `<digit>`
`<digit>` ::= "<0>" | "<1>" | "<2>" | "<3>" | "<4>" | "<5>" | "<6>" | "<7>" | "<8>" | "<9>"
`<time>` ::= `<hour>` 0x20 `<zone>` ; see RFC822

`<folder>` ::= "fldr:" `<ws_char>`* `<7_bit_char>`+ `<crLf>`

Determines the folder from which the mail is fetched. If this field is missing the used folder is INBOX.

Where:

`<ws_char>` ::= 0x20 | 0x9
`<7_bit_char>` ::= 'any 7-bit char except `<crLf>`'
`<crLf>` ::= 0xd | 0xa | 0xd 0xa

`<sender>` ::= "sender:" `<ws_char>`* `<rfc822_address>` ("," `<rfc822_address>`)* `<crLf>`

Determines the sender of the mail message.

Where:

`<ws_char>` ::= 0x20 | 0x9
`<rfc822_address>` ::= `<mailbox>` | `<group>` ; see RFC822

Mobile Phones
3.1

21.04.99

<crLf> ::= 0xd | 0xa | 0xd 0xa

<reply_to> ::= "reply-to:" <ws_char>* <rfc822_address> ("," <rfc822_address>)* <crLf>

Determines the address to which replies are sent. If this field is missing the replies are sent to the address defined in from field.

Where:

<ws_char> ::= 0x20 | 0x9
<rfc822_address> ::= <mailbox> | <group> ; see RFC822
<crLf> ::= 0xd | 0xa | 0xd 0xa

<uid_validity> ::= "uidv:" <ws_char>* <nz_digit> <digit>* <crLf>

Is used to determine if UID is still valid or not.

Where:

<ws_char> ::= 0x20 | 0x9
<nz_digit> ::= <"1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
<digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
<crLf> ::= 0xd | 0xa | 0xd 0xa

<extension_field> ::= <extension_name> <colon> <char> <crLf>

Where:

<extension_name> ::= <'any char except <":"> and <0xd | 0xa | 0xd 0xa>'>+
<colon> ::= ":"
<char> ::= 'any char except <0xd | 0xa | 0xd 0xa>'
<crLf> ::= 0xd | 0xa | 0xd 0xa

<username> ::= <7_bit_char>*

Where:

<7_bit_char> ::= 'any 7-bit char except <crLf>'
<crLf> ::= 0xd | 0xa | 0xd 0xa

<port_number> ::= <nz_digit> <digit>*

Where:

<nz_digit> ::= <"1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
<digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">

<non_digit> ::= 'any char except <digit> and <crLf>'

Where:

<digit> ::= <"0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9">
<crLf> ::= 0xd | 0xa | 0xd 0xa

Mobile Phones
3.1

21.04.99

Example messages:

For legacy phones

```
//SCKL1588
1 new mail message
from: me@company.com
subject: Testing
size: 42 lines
```

Restricted mode mail notify smart message for smart phone

```
//SCKL1588
1
subject:Testing
from:me@company.com
size:42 lines
date:2 Feb 1998 0442 UT
iuid:1234567891
sid: 007
```

Non-restricted mode version for legacy phone

```
//SCKL1588
1 new mail message
From:Me <me@company.com>
Subject: Testing, please
ignore!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Size: 42 KB
att:1
To: You <you@company.com>, he@company.com, (...)
Cc: Me <me@company.com>
Date: 2 Feb 1998 0442 UT
sender: me@company.com
reply-to: me.too@company.com
fldr: user.Me.this.folder.is.for.junk.mail
```

Non-restricted mode example for smart phone

```
//SCKL1588
1 new mail message received
from: me@company.com
subject: Testing, please ignore
size: 4242 KB
date: 2 Feb 1998 04:42 +0000
att: 42
to: Me <me@company.com>, You <you@company.com>
cc: she@company.com
fldr: user.me.this.folder.is.for.junk.mail
sender: me@company.com
reply-to: me.too@company.com
```


Mobile Phones
3.1

21.04.99

sid:007
iuid:1234567892
uidv:1020304050

Short format message exmple

//SCKL1588
42 new messages

4.2 E-mail Configuration Using Smart SMS

The communicator's mail settings can be configured by sending a single SMS message to the communicator. The SMS message must be in the format defined in the document Usage of Special SMS Features at <http://www.forum.nokia.com>.

4.3 About Text Support

The Nokia 9110 Communicator mail client is MIME1 and 2 (Multipurpose Internet Mail Extensions, RFC1521) compliant. MIME2 extends MIME1 by not limiting the Internet mail headers to contain just US-ASCII text data. Mail is sent as a MIME (RFC1521) message. All text written on the Nokia 9110 Communicator is Quoted Printable coded (QP coded) and is in the ISO LATIN1 character set. National characters found in the ISO LATIN1 character set can be sent and received correctly if the receiver has a MIME compliant mail user agent.

If the mail clients do not support MIME, there may be problems receiving all the characters correctly. To fix this problem, install an SMTP server, which will transform the QP or BASE64 coded data to 8 bit. This enables the ISO LATIN1 capable mail clients to receive the national characters correctly.

5. MAIL SYSTEMS AND THE COMMUNICATOR

The Nokia 9110 Communicator requires that the POP3 and IMAP4 implementation on the server is done according to the protocol. For this reason, Nokia and it's partners test the most popular mail servers for compatibility with the communicator.

5.1 Mail Systems Which Support POP3 or IMAP4

The most current information about mail servers compatible with the communicator can be found at <http://www.forum.nokia.com>. The list also has links to information on the manufacturers' home pages.

5.2 Mail Systems with Special Solutions for the Communicator

There are some mail systems which do not support either POP3 or IMAP4. This support can be built if "interpreter"-software is installed. Nokia does not provide this software. A list of third-party solutions to consider using with the Nokia 9110 Communicator is maintained at <http://www.forum.nokia.com>.