

List of Compatible E-mail Systems

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1. Introduction

This document describes compatible e-mail systems that can be used with the Nokia 9210i Communicator.

The Nokia 9210i Communicator messaging system includes an e-mail client that supports the most common Internet e-mail protocols to access the company's e-mail server. Figure 1 illustrates how the communicator connects to the e-mail server via a dial-in service access point.

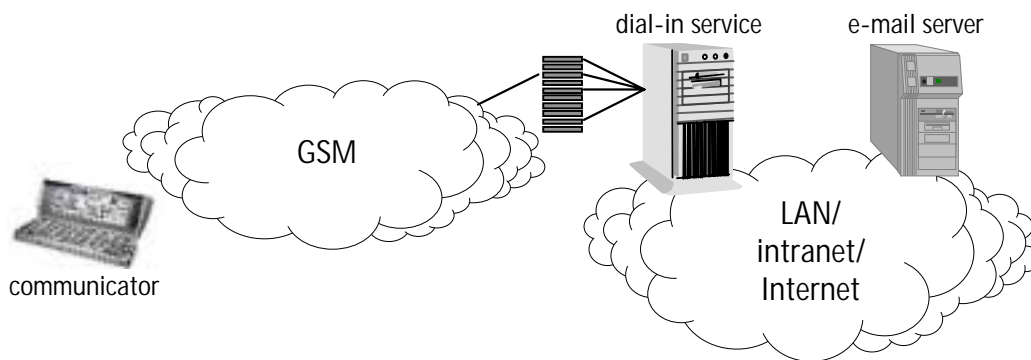


Figure 1. Connecting the Nokia 9210i Communicator to an e-mail server

There are certain requirements to make e-mail access possible. There must be:

- A TCP/IP connection between the communicator and the user's e-mail server (via a dial-in service with PPP support). For more information about setting up network connections in the Nokia 9210i Communicator, see the *Nokia 9210i Communicator Internet Connections Guide*.
- POP3 or IMAP4 (Version 4rev1, RFC 2060) protocol support from the remote e-mail server for retrieving messages. Both of these protocols are commonly supported by the latest e-mail servers.
- SMTP support for sending e-mail messages.
- Messages must also follow MIME formats.

RFC documents specifying these protocols are listed at the end of this document.

Note that the X.400 mail system is not supported.

For better security, it is possible to use encrypted connections between the communicator and the e-mail server. Encryption is implemented using transport layer security (SSL/TLS), which protects the IMAP4, POP3, and SMTP connection between the communicator and the e-mail server. Note that encrypted e-mail messages (such as S/MIME and PGP) are not supported. Secure SSL/TLS connection is negotiated using IMAP4, POP3, and SMTP protocol extensions (specified in RFC 2487 and RFC 2595). Systems that use separate TCP ports for secure connections, and do not negotiate the security protocol during the IMAP4, POP3, or SMTP session, are not supported.

2. Sending and Receiving E-mail

The communicator supports both POP3 and IMAP4 protocols for retrieving e-mail. Either of them can be used, but IMAP4 is recommended, since it enables the user to access different folders and to determine whether or not to

retrieve attachments. The e-mail client in the communicator sends e-mail messages using the SMTP protocol, and both MIME1 and MIME2 encodings are supported.

Attachments are supported and downloaded attachments can be viewed on the communicator. Attachments can be also saved to files, and transferred to a PC for viewing. Attachment types (Table 1) are recognized using MIME-types, file extensions, UIDs (in Symbian platform, unique identifiers associate applications with documents), or first few bytes of the attachment data. Initially supported attachment types are marked with (*) in Table 1. Other attachment types are supported if the appropriate application or converter is installed in the device. New attachment types can be supported via add-on applications installed in the communicator. The overall use of attachments is rather limited by the small disk space and amount of free memory. A memory card can be used to expand the available disk space for messaging.

Attachment type	File extensions	MIME types
Audio File (*)	WAV, AU, WVE	"audio/x-wav" "audio/basic" "audio/x-sibo-wve"
CompuServe GIF (*)	GIF	"image/gif"
Computer Graphics Metafile	CGM	"image/cgm" "image/x-cgm"
Corel/Novell Presentations	SHW	"image/x-presentations"
EPOC Word (*)	-	"x-epoc/x-app268450404"
EPOC Sheet (*)	-	"x-epoc/x-app268450429"
EPOC Bitmap (*)	MBM	"image/x-epoc-mbm"
Internet HyperText Markup Language (*)	HTML, HTM	"text/html"
Lotus 1-2-3 v.1/2/3/4/5/97/Millennium	WQ1, WKU, WK1, WK3, WK4, WK5, WK6, 123	"application/x-lotus-123" "application/vnd.lotus-1-2-3"
Lotus AMI Draw	SDW	"image/x-amidraw"
Microsoft Excel 2/3/4/5/7/97/98/2000	XLS, XLC	"application/x-msexcel" "application/x-excel" "application/vnd.ms-excel" (*) "application/msexcel" "application/xlc"
Microsoft PowerPoint 3/4/7/97/98/2000	PPT, POT, PPS	"application/x-mspowerpoint" "application/vnd.ms-powerpoint" (*) "application/ppt" "application/pot" "application/pps" "application/mspowerpoint"
Microsoft Project	MPP	"application/vnd.ms-project"
Microsoft Word 1/2/3/4/5/6/7/97/98/2000	DOC, WRI	"application/msword" (*) "application/vnd.ms-word" "application/vnd.msword"
Paintbrush	PCX, DCX	"image/x-pc-paintbrush"
PKZIP Format	ZIP	"application/zip"
Portable Network Graphics	PNG	"image/png" "image/x-png"
Rich Text Format	RTF	"application/rtf" "text/rtf"
Ringling Tones (*)	MG	"application/vnd.nokia.ringing-tone"

Tagged Image File Format (TIFF, JPEG (*))	TIF, JPG, JIF	"image/tiff" "image/jpeg"
Text (*)	TXT	"text/plain"
UNIX Compress, Tar	TAR, TAZ	"application/x-tar"
UNIX Gzip	TGZ	"application/x-gzip" "application/gzip"
Visio	VSD	"application/vnd.visio"
Windows Bitmap	BMP, RLE, ICO, CUR	"image/x-win-bitmap" "image/x-MS-bmp" "image/bmp" "image/x-bmp"
Windows Metafile	WMF, EMF	"image/x-win-metafile" "image/x-wmf"
WordPerfect 4/5/6/7/8	WPD	"application/wordperfect5" "application/wordperfect5.1" "application/x-wordperfect6"

Table 1. Supported attachment types

For more information how to configure the e-mail client, see the *Setting up E-mail Service* document.

3. Compatible E-mail Systems

Here is a list of mail systems which can be connected with the communicator. All of these systems have been tested with Nokia 9210 or Nokia 9210i Communicator. This list is not exhaustive, and other mail servers supporting standard Internet protocols (SMTP, IMAP4rev1, and POP3) should work as well. The most recent information about compatible e-mail systems can be found at <http://www.forum.nokia.com>.

3.1 Courier IMAP

- Courier Mail Server v.0.32 supports the SMTP, MIME, IMAP4, and POP3 standards
- Secure connections (SSL/TLS) are supported with IMAP4 and SMTP
- More information on the Courier Mail Server can be found at <http://courier.sourceforge.net/>

3.2 Cyrus IMAPD Mail Server

- Cyrus IMAPD Mail Server 1.5 (Carnegie Mellon) supports the MIME, IMAP4, and POP3 standards
- Version 1.6 and 2.0 support secure connections (SSL/TLS) with IMAP4
- More information on Cyrus IMAPD Mail Server can be found at <http://asg.web.cmu.edu/cyrus/>

3.3 HP OpenMail 6.0 for Linux

- HP OpenMail 6.0 for Linux supports the SMTP, MIME, IMAP4, and POP3 standards
- More information on the OpenMail server can be found at <http://www.openmail.com/>

3.4 IntraStore Server 2000

- IntraStore Server 2000 supports the SMTP, MIME, IMAP4, and POP3 standards.
- The APOP command is supported for POP3.
- More information on the IntraStore server can be found at <http://intrastore.cdc.com/>

3.5 iPlanet Messaging Server 5.0

- iPlanet Messaging Server 5.0 supports the SMTP, MIME, IMAP4, and POP3 standards
- More information on the iPlanet Messaging server can be found at <http://iplanet.com/>

3.6 Lotus Domino R5 Mail Server

- Lotus Domino R5 Mail Server supports the SMTP, MIME, IMAP4, and POP3 standards
- More information on Lotus Domino Mail can be found at <http://www.lotus.com/>

3.7 Microsoft Exchange 5.5

- Microsoft Exchange 5.5 supports the SMTP, MIME, IMAP4, and POP3 standards
- More information on Microsoft Exchange can be found at <http://www.microsoft.com/>

3.8 Microsoft Exchange 2000

- Microsoft Exchange 2000 supports the SMTP, MIME, IMAP4, and POP3 standards
- More information on Microsoft Exchange can be found at <http://www.microsoft.com/>

3.9 Oracle InterOffice Mail Server 5.1

- Oracle InterOffice Mail Server 5.1 supports the SMTP, MIME, IMAP4, and POP3 standards
- More information can be found at <http://www.oracle.com/>

3.10 Stalker CommuniGate Pro 3.3 Mail Server

- Stalker CommuniGate Pro 3.3 supports the SMTP, MIME, IMAP4, and POP3 standards
- Secure connections (SSL/TLS) are also supported. The APOP command is supported for POP3.
- More information can be found at <http://www.stalker.com/CommuniGatePro/>

3.11 Sun Internet Mail Server 4.0

- Sun Internet Mail Server 4.0 supports the SMTP, MIME, POP3, and IMAP4 standards
- More information on Sun Internet Mail Server can be found at <http://iplanet.com/>

3.12 TeamWare Office Mail Server 5.3

- TeamWare Office Mail Server 5.3 supports the SMTP, MIME, POP3, and IMAP4 standards
- More information can be found at <http://www.teamware.com/products/>

3.13 University of Washington IMAP4 Server

- UW IMAP Server v10.173 supports the POP3 and IMAP4 standards
- More information on UW IMAP Server can be found at <http://www.washington.edu/imap/>

3.14 Exim Mailer

- Exim Mailer 3.16 supports the SMTP standard
- More information can be found at <http://www.exim.org/>

3.15 Sendmail

- Sendmail 8.9.3 and 8.12.0 supports the SMTP standard
- Version 8.12.0 supports also secure connections (SSL/TLS)
- More information can be found at <http://www.sendmail.org/>

3.16 Qmail

- Qmail 1.03 supports the SMTP and POP3 standards
- More information can be found at <http://www.qmail.org/>

3.17 ZMailer

- ZMailer (version 2.99) supports the SMTP standard and also secure connections (SSL/TLS)
- More information can be found at <http://www.zmailer.org/>

3.18 Other solutions

If the e-mail server does not support the POP3/IMAP4 and SMTP protocols, connections to the e-mail server can also be established with the communicator's Web browser as shown in Figure 1, if the e-mail server supports HTTP/HTML access.

Additionally, it may be possible to use converter software that provides necessary POP3/IMAP4 and SMTP protocol support for the e-mail server. Use of the converter is illustrated in Figure 2.

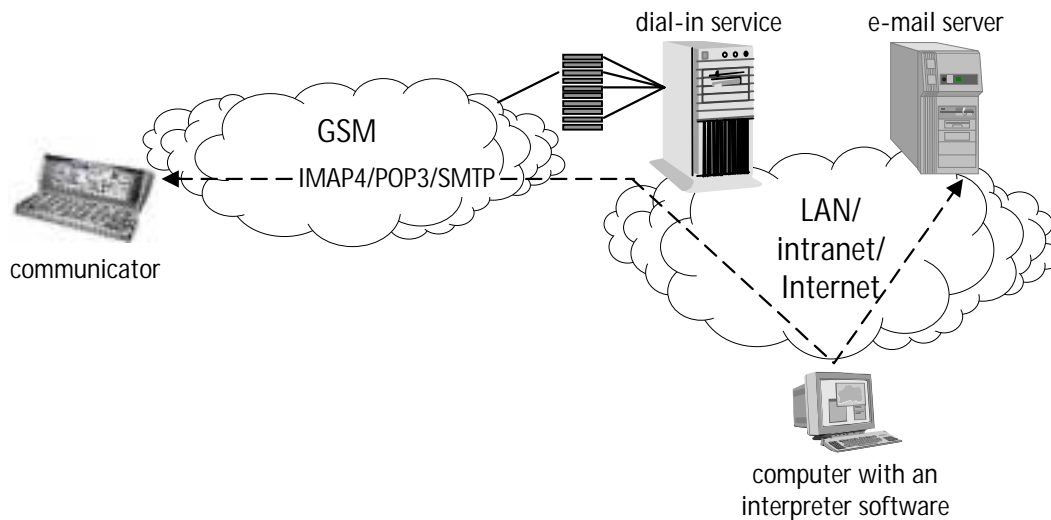


Figure 2. Connecting the Nokia 9210i Communicator to an e-mail server using interpreter software

Examples of converter software include *Infinite InterChange* by Infinite Technologies. Infinite InterChange creates POP3, IMAP4, and HTTP/HTML support. More information on Infinite Interchange can be found at <http://www.infinite.com/>

4. RFC Documents

Internet e-mail protocols are specified using RFC (Request for Comments) documents. RFC documents are available, for example, from IETF (The Internet Engineering Task Force, <http://www.ietf.org/>).

SMTP (Simple Mail Transfer Protocol)	RFC 821
Standard for the format of ARPA Internet text messages	RFC 822
POP3 (Post Office Protocol, version 3)	RFC 1939
PPP (Point-to-Point Protocol)	RFC 1661
MIME (Multipurpose Internet Mail Extensions) Part One: Format of Internet Message Bodies	RFC 2045
MIME (Multipurpose Internet Mail Extensions) Part Two: Media Types	RFC 2046
MIME (Multipurpose Internet Mail Extensions) Part Three: Message Header Extensions for Non-ASCII Text	RFC 2047
IMAP4 (Internet Message Access Protocol, version 4rev1)	RFC 2060
TLS (Transport Layer Security Protocol, version 1.0)	RFC 2246

Nokia Mobile Phones

Nokia 9210i Communicator

List of Compatible E-mail
Systems

Read receipts (An Extensible Message Format for Message Disposition Notifications, Disposition-Notification-To header)	RFC 2298
SMTP Service Extension for Secure SMTP over TLS	RFC 2487
Using TLS with IMAP, POP3, and ACAP	RFC 2595