NOKIA 9500 Communicator

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Issue 1 EN

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Nokia 9500 Communicator

Configuring connection settings

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Contents

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Introduction

This document is a support guide for the configuration of Internet settings needed to use the Nokia 9500 Communicator for data connections.

To access the Internet (in order to use WWW or mail), the following conditions must exist:

- The cellular network (GSM 900/1800/1900) you use must support data calls.
- The data service (also the high-speed HSCSD service if used) must be activated for your SIM card.
- You must have obtained an Internet access point (IAP) from an Internet service provider.
- Proper Internet settings must have been configured in your communicator.

For information about the correct settings, contact your Internet service provider or system administrator. The service provider may be able to configure the access point for you using a special SMS message or WWW page, which sets up all the necessary Internet access settings. Please contact your Internet service provider (ISP) for details.

The necessary settings for Internet configuration are provided by your Internet Service Provider. If your Internet settings are incomplete or incorrect, please contact your service provider. Depending on your ISP or network operator, you may not need to fill in all of the settings.

When you insert a SIM card, the device will read the necessary GPRS, MMS, and SMSC settings from the SIM card if they are available, and no manual configuration is necessary. Note that this may not work with all operators and SIM cards.

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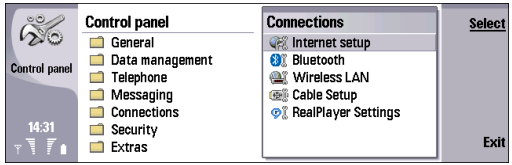
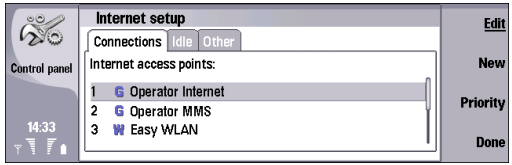
Creating Internet connections

Select **Desk**→ **Tools**→ **Control Panel**→ **Connections**→ **Internet setup**.



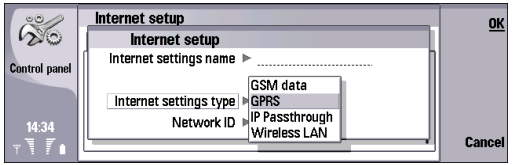
1 The list of existing IAP's is shown. Press **New** to create a new Internet access point.



If IAP's are already available, the setup asks if you want to use an existing access point as a basis for the new one.

2 In the *Internet setup* dialog, define the following:

- *Internet settings name* — Type a name for the Internet access point.
- *Internet settings type* — Select a connection type (*GPRS*, *GSM data*, *Wireless LAN*, or *IP Passthrough*). Select *IP Passthrough* to connect your device to a compatible PC and use the Internet or network connection of the PC. Before using the IP passthrough, activate it. See "Activating IP passthrough" on page 25.
- *Network ID* — Select the network ID according to the destination network you want to access with the Internet access point. You can rename and create new network IDs. Using the correct network ID ensures that the data traffic is routed directly to the desired destination network. VPN (virtual private network) software may restrict data traffic for a certain destination network. Network ID can be used to filter Internet access points when establishing an Internet connection.



3 Press **Next** to go forward. Depending on the Internet setting type you selected, turn to one of the following sections in this document:

- *GPRS* — See "GPRS settings" on page 7.
- *IP Passthrough* — See "IP passthrough settings" on page 9.

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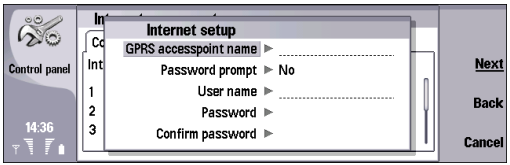
- *GSM data* — See "GSM data settings" on page 10.
- *Wireless LAN* — See "Wireless LAN settings" on page 13.

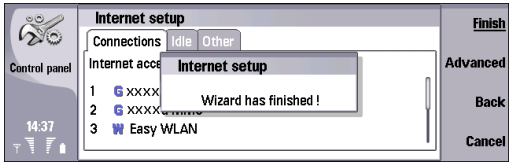
GPRS settings

1 If you selected *GPRS* as *Internet settings type*, define the following:
- *GPRS accesspoint name* — Type a name for the GPRS access point. Contact your Internet service provider to obtain this information.
- *Password prompt* — Select *No* to generate the password automatically from the settings, or *Yes* to ask the password always when connected.
- *User name* — Type your user name if required.
- *Password* — Type your password if required.



In many GPRS connections, only the GPRS accesspoint name is required, and no other settings need to be filled.

2 Press **Next**. If further settings are required, such as IP configuration or proxy settings, press **Advanced** to access the advanced settings. If no further settings are required, press **Finish**, and the GPRS IAP is ready to use.



3 In the *IP configuration* page, define the following:
- *Network type* — Specify the protocol you want to use (*IPv4* or *IPv6*).
- *Auto retrieve IP* — If you select *Yes*, the IP address is obtained automatically from the server. This setting is also called dynamic IP address. If you select *No*, specify the *IP address*.
- *Auto retrieve DNS* — If you select *Yes*, the primary and secondary DNS (domain name server) addresses are obtained automatically from the server. DNS is an Internet service that translates domain names such as www.nokia.com into IPv4 addresses such as 192.100.124.195, or IPv6 addresses like 3ffe:2650:a640:1c2:341:c39:14.
  If you select *No*, specify the IP addresses for the primary and secondary DNS servers.

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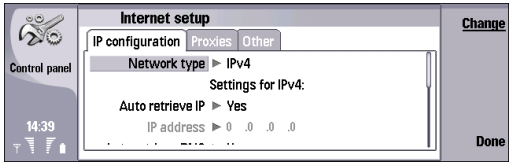
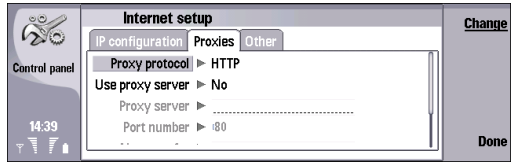
- *IPv6 DNS mode* — Select a mode for the IPv6 DNS (*Well known* or *Manual*). If you select *Manual*, specify the IP addresses for the primary and secondary IPv6 DNS servers.

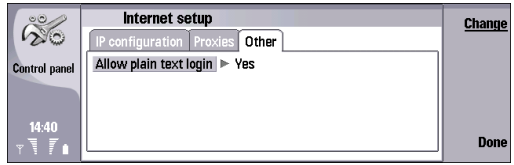


4 Press **Menu** to access the *Proxies* page.
You may want to use a proxy to quicken access to the Internet. Note also that some Internet service providers require the use of Web proxies. Contact your Internet service provider to determine the proxy details.
If you have made an Internet connection to your company's intranet, and are unable to retrieve Web pages from the general Internet, you may need to setup a proxy server to retrieve Web pages outside your company's intranet.
Define the following:

- *Proxy protocol* — Select the protocol type of the proxy. You can set different proxy settings for each protocol (*HTTP* or *HTTPS*).
- *Use proxy server* — Set to *Yes* to use the proxy server.
- *Proxy server* — Type the IP address or the domain name of the proxy server. For example, domain names are company.com and organisation.org.
- *Port number* — Type the number of the proxy port. The port number is related to the protocol. Common values are 8000 and 8080, but vary with every proxy server.
- *No proxy for* — Define the domains for which the HTTP or HTTPS proxy is not needed.



5 Press **Menu** to access the *Other* page, and define the following:
Allow plain text login — Select *No*, if you never want to send your password as plain text without encryption. Note that this option only affects PPP connections; e-mail and Web passwords are not encrypted. Some Internet service providers require that this option is set to *Yes*.



6 After filling in all the required settings, press **Done** to return to the finish wizard.

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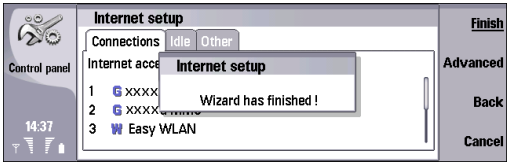
7 Press **Finish**, and the GPRS IAP is ready to use.

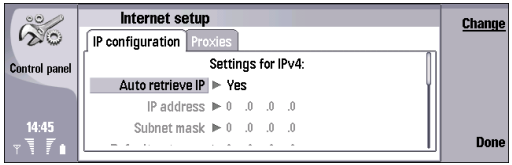
IP passthrough settings

1 If you selected *IP Passthrough* as *Internet settings type*, press **Advanced** to access the advanced settings. If no further settings are required, press **Finish**, and IP passthrough IAP is ready to use.



2 In the *IP configuration* page, define the following:

- *Auto retrieve IP* — If you select *Yes*, the IP address is obtained automatically from the server. This setting is also called dynamic IP address. If you select *No*, specify the *IP address*, *Subnet mask*, and *Default gateway*.
- *Auto retrieve DNS* — If you select *Yes*, the primary and secondary DNS (domain name server) addresses are obtained automatically from the server. DNS is an Internet service that translates domain names such as www.nokia.com into IPv4 addresses such as 192.100.124.195, or IPv6 addresses like 3ffe:2650:a640:1c2:341:c39:14.
  If you select *No*, specify the IP addresses for the primary and secondary DNS servers.
- *IPv6 DNS mode* — Select a mode for the IPv6 DNS (*DHCP*, *Well known*, or *Manual*). If you select *Manual*, specify the IP addresses for the primary and secondary IPv6 DNS servers.



3 Press **Menu** to access the *Proxies* page, and define the following:

- *Proxy protocol* — Select the protocol type of the proxy. You can set different proxy settings for each protocol (*HTTP* or *HTTPS*).
- *Use proxy server* — Set to *Yes* to use the proxy server.
- *Proxy server* — Type the IP address or the domain name of the proxy server. For example, domain names are company.com and organisation.org.
- *Port number* — Type the number of the proxy port. The port number is related to the protocol. Common values are 8000 and 8080, but vary with every proxy server.

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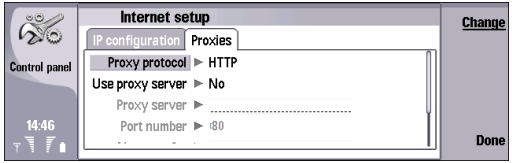
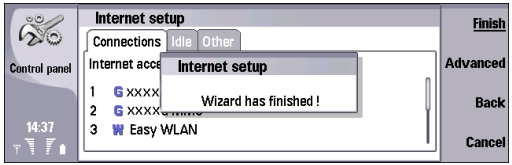
- *No proxy for* — Define here the domains for which the HTTP or HTTPS proxy is not needed.



4 After filling in all the required settings, press **Done** to return to the finish wizard window.

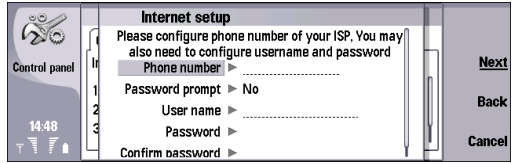
5 Press **Finish**, and the IP passthrough IAP is ready to use.



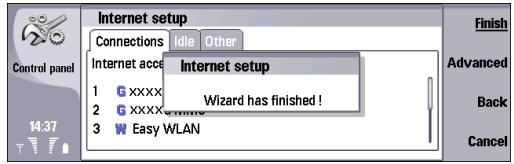
GSM data settings

1 If you selected *GSM data* as *Internet settings type*, define the following:

- *Telephone number* — Type the phone number used to dial in to your Internet service provider.
- *Password prompt* — Select *No* to generate the password automatically from the settings, or *Yes* to always request the password when connected.
- *User name* — Type your user name if required.
- *Password* — Type your password if required.



2 Press **Next**. If further settings are required, such as IP configuration or proxy settings, data call speed, script or callback, press **Advanced** to access the advanced settings. If no further settings are required, press **Finish**, and the GSM data IAP is ready to use.



3 In the *IP configuration* page, define the following:

- *Auto retrieve IP* — If you select *Yes*, the IP address is obtained automatically from the server. If you select *No*, specify the *IP address*.
- *Auto retrieve DNS* — If you select *Yes*, the primary and secondary DNS (domain name server) addresses are obtained automatically from the server. If you select *No*, specify the IP addresses for the primary and secondary DNS servers.

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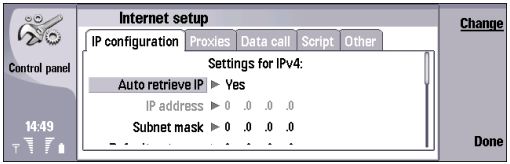
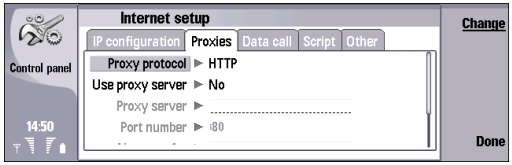
- *IPv6 DNS mode* — Select a mode for the IPv6 DNS (*Well known* or *Manual*). If you select *Manual*, specify the IP addresses for the primary and secondary IPv6 DNS servers.



4 Press **Menu** to access the *Proxies* page, and define the following:

- *Proxy protocol* — Select the protocol type of the proxy. You can set different proxy settings for each protocol (*HTTP* or *HTTPS*).
- *Use proxy server* — Set to *Yes* to use the proxy server.
- *Proxy server* — Type the IP address or the domain name of the proxy server. For example, domain names are company.com and organisation.org.
- *Port number* — Type the number of the proxy port. The port number is related to the protocol. Common values are 8000 and 8080, but vary with every proxy server.
- *No proxy for* — Define the domains for which the HTTP or HTTPS proxy is not needed.



5 Press **Menu** to access the *Data call* page, and define the following:

- *Connection type* — Define the GSM data call type (*Normal* or *High speed*). To use *High speed*, the service provider must support this feature, and if necessary, activate it for your SIM card.
- *Remote modem type* — Define whether the device uses an analog or digital connection (*Analog*, *ISDN V.110*, or *ISDN V.120*). This setting depends on both your GSM network operator and Internet service provider, because some GSM networks do not support certain types of ISDN connections. For details, contact your Internet service provider. If ISDN connections are available, they establish connections more quickly than analog methods.
- *Modem speed* — This option allows you to limit the maximum connection speed. Higher data rates may cost more, depending on the service provider. The speed represents the maximum speed at which your connection will operate. During the connection, the

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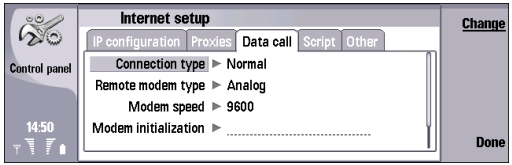
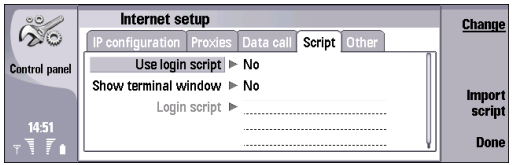
operating speed may be less, depending on network conditions.

- *Modem initialisation* — You can control your device using modem AT commands. If required, type characters specified by your service provider.



6 Press **Menu** to access the *Script* page, and define the following:

- *Use login script* — If you select *Yes*, you can write or import a login script in plain text or Unicode format. Edit the script in the *Login script* field.
- *Show terminal window* — Select *Yes* if you want to be able to interact with the terminal server during the login.



7 Press **Menu** to access the *Other* page, and define the following:

- *Use callback* — Select *Yes* if you have a service that dials back to your phone when you establish an Internet connection.
- *Callback type* — Contact your Internet service provider for the correct setting (*Number*, *Server number*, or *Server number (IETF)*). *Server number* refers to the standard Microsoft callback, and *Server number (IETF)* refers to a callback approved by the Internet Engineering Task Force. Select *Number* to use a number that you define in the *Callback number* field.
- *Callback number* — The data call phone number of your device, which the callback server uses.
- *Allow plain text login* — Select *No*, if you never want to send your password as plain text without encryption. Note that this option only affects PPP connections; e-mail and Web passwords are not encrypted. Some Internet service providers require that this option is set to *Yes*.
- *Use PPP compression* — Select *Yes* to speed up the data transfer, if it is supported by the remote PPP server. If you have problems with establishing a connection, select *No*.

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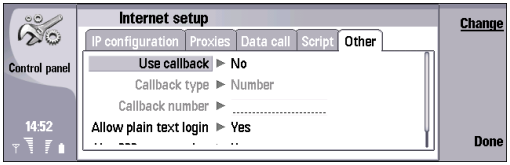
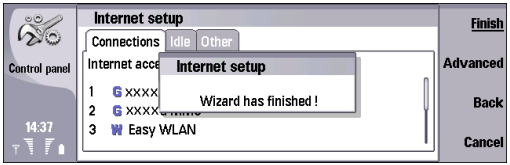
8 After filling in all the required settings, press **Done** to return to the finish wizard window.



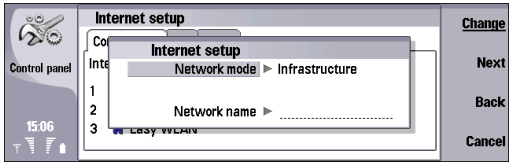
9 Press **Finish**, and the GSM data IAP is ready to use.



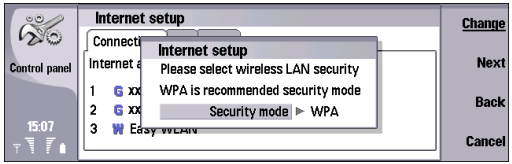
Wireless LAN settings

1 If you selected *Wireless LAN* as *Internet settings type*, define the following:

- *Network mode* — Select *Infrastructure* to allow devices to communicate with each other and with wired LAN devices through a wireless LAN access point. Select *Adhoc* to allow devices to send and receive data directly with each other; in this case, no wireless LAN access point is needed.
- *Network name* — Type the network name as defined by the system administrator, or press **Change**, and select one from the list. In the ad hoc mode, you can name the wireless LAN yourself.
  If you do not specify the network name here, you are asked to select a network when you establish a wireless LAN connection.



2 Press **Next** and define the following:
Security mode — Select the recommended type of security mode (*WEP*, *WPA*, *802.1x*, or *None*). If you select *WEP* (wired equivalent privacy) or *WPA* (Wi-Fi protected access), you must configure additional settings. You must select the same security mode that is used in the wireless LAN access point.



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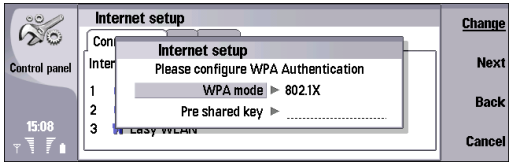
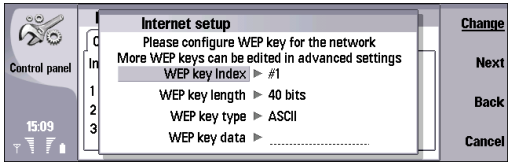
3 Press **Next**.
If you selected *WPA* as the *Security mode*, define the following:
WPA mode — Select *802.1x* if you want to use an EAP module for authentication. If you select *Pre-shared key*, type the password (also called a master key) in the *Pre-shared key* field. Note that the same key must be entered in the wireless LAN access point.

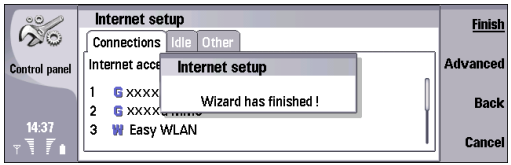


If you selected *WEP* as the *Security mode*, define the following:

- *WEP key index* — Select a number for the WEP key.
- *WEP key length* — Select the appropriate key length. Supported key lengths are 40, 104, and 232 bits. The more bits there are in the key, the higher the level of security.
- *WEP key type* — Select whether you want to enter the WEP key data in hexadecimal format (*HEX*) or in text form (*ASCII*).
- *WEP key data* — Enter the WEP key data. The number of characters you can enter depends on the key length you have chosen. For example, keys that are 40 bits long, consist of 5 alphanumeric characters, or 10 hexadecimal characters.



4 Press **Next**. If further settings are required, press **Advanced** to access the advanced settings. If no further settings are required, press **Finish**, and the Wireless LAN IAP is ready to use.



The Advanced pages and options available depend on the settings you have chosen. Contact your system administrator or service provider for the correct values.

5 In the *IP configuration* page, define the following:

- *Auto retrieve IP* — If you select *Yes*, the IP address is obtained automatically from the server. This setting is also called dynamic IP address. If you select *No*, specify the *IP address*, *Subnet mask*, and *Default gateway*.

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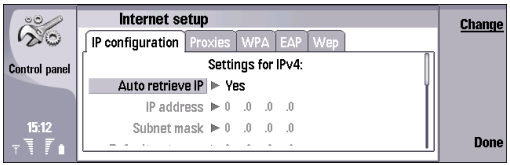
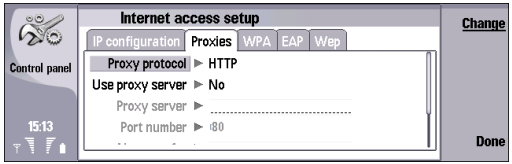
- *Auto retrieve DNS* — If you select *Yes*, the primary and secondary DNS (domain name server) addresses are obtained automatically from the server. If you select *No*, specify the IP addresses for the primary and secondary DNS servers.
- *IPv6 DNS Mode* — Select a mode for the IPv6 DNS (*DHCP*, *Well known*, or *Manual*). If you select *Manual*, specify the IP addresses for the primary and secondary IPv6 DNS servers.

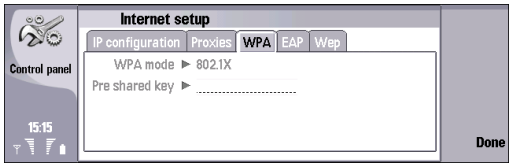


6 Press **Menu** to access the *Proxies* page, and define the following:

- *Proxy protocol* — Select the protocol type of the proxy. You can set different proxy settings for each protocol (*HTTP* or *HTTPS*).
- *Use proxy server* — Set to *Yes* to use the proxy server.
- *Proxy server* — Type the IP address or the domain name of the proxy server. For example, domain names are: company.com and organisation.org.
- *Port number* — Type the number of the proxy port. The port number is related to the protocol. Common values are 8000 and 8080, but vary with every proxy server.
- *No proxy for* — Define here the domains for which the HTTP or HTTPS proxy is not needed.



7 Press **Menu** to access the *WPA* page, and define the following:
WPA mode — Select *802.1x* if you want to use an EAP module for authentication. If you select *Pre-shared key*, type the password (also called a master key) in the *Pre-shared key* field. Note that the same key must be entered in the wireless LAN access point.



8 Press **Menu** to access the *EAP* page.
You can configure various EAP (extensible authentication protocol) modules that are used for authentication and data encryption. EAP authentication is only available if you have selected *WPA* or *802.1x* as the security mode.

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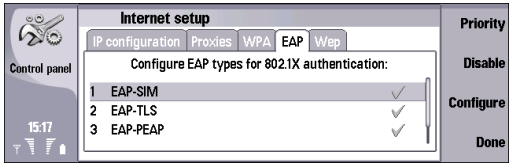
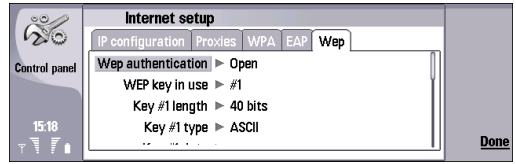
To enable a disabled EAP type, select it and press **Enable**.
To disable an enabled EAP type, select it and press **Disable**.
To change the priority order of the EAP types, press **Priority**.
See "Modifying EAP module settings" on page 17.

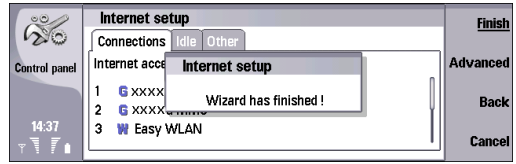


9 Press **Menu** to access the *Wep* page.
You can create up to four WEP keys. Define the following:

- *WEP authentication* — Select *Open* or *Shared* as a means of authentication between the wireless device and the wireless LAN access point.
- *WEP key in use* — Select the WEP key you want to use with the Internet access point you are creating.
- *Key #1 length* — Select the appropriate key length. Supported key lengths are 40, 104, and 232 bits. The more bits there are in the key, the higher the level of security. WEP keys consist of a secret key and a 24-bit initialization vector. For example, some manufacturers refer to the 104-bit key as a 128-bit key (104+24). Both keys offer the same level of encryption and are therefore interoperable.
- *Key #1 type* — Select whether you want to enter the WEP key data in hexadecimal format (*HEX*) or in text form (*ASCII*).
- *Key #1 data* — Type the WEP key data. The number of characters you can type depends on the key length you have chosen. For example, keys that are 40 bits long always consist of 5 alphanumeric characters or 10 hexadecimal characters.



10 After filling in all the required settings, press **Done** to return to the finish wizard.



11 Press **Finish**, and the wireless LAN IAP is ready to use.

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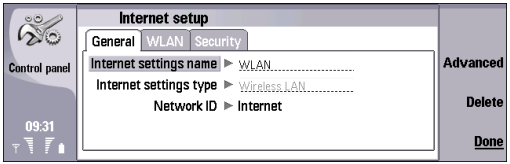
Modifying EAP module settings

Select **Desk**→ **Tools**→ **Control Panel**→ **Connections**→ **Internet setup**. Select a wireless LAN Internet access point and press **Edit**→ **Advanced**.



EAP (extensible authentication protocol) modules are used in a wireless LAN to authenticate wireless devices and authentication servers.

To modify the authentication priority order, press **Priority**, and then **Move Up** or **Move Down**.

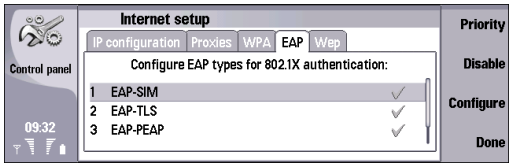
To enable a certificate or an authentication, select it and press **Enable**. To disable a certificate or an authentication, select it and press **Disable**.

To change the settings of a certificate or an authentication, select it and press **Configure**.

To accept your changes, press **Done**.

EAP-SIM

In *Advanced* settings, select the *EAP* page. Select *EAP-SIM* from the list, and press **Configure**.



Define the following:

- *Use manual username* — This setting overrides the user name in the initial identity response in a case when the server requires that the user performs the initial identification with a predefined user name (for example, with a Windows user name).
  If you select *Yes* but leave the *Username* field empty, a random user name is generated for initial identity response.
- *Use manual realm* — This setting overrides the realm of the initial identity response in a case when the server requires that the user perform the initial identification with a predefined realm. If you select *No*, the realm is derived from the IMSI (international mobile subscriber identity).
- *Use identity privacy* — The EAP-SIM can have the server send a pseudonym identity for future authentications. Select *Yes* to use this identity and to prevent your IMSI from being sent.

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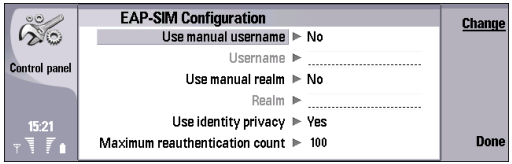
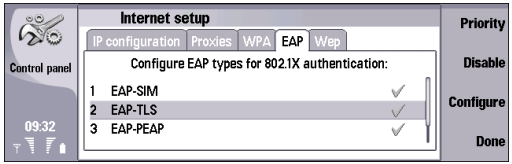
- *Maximum reauthentication count* — The EAP-SIM can have the server send the wireless device a reauthentication identity that can be used to speed up the upcoming authentications. You can specify how many times a single reauthentication mechanism can be used until full authentication must be performed. If the reauthentications mechanisms are used too many times, security may be compromised because the SIM card is not used in reauthentication.



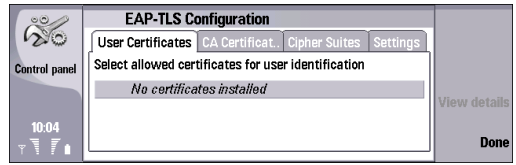
EAP-TLS

In *Advanced* settings, select the *EAP* page. Select *EAP-TLS* from the list, and press **Configure**.

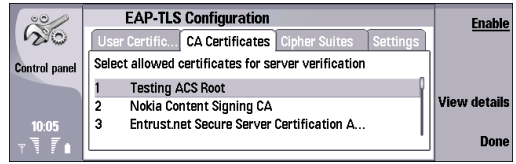


Define the following:

- *User Certificates* — Select which personal certificates are used for user authentication when using this Internet access point. This page shows all the installed personal certificates on the device. The certificates are disabled by default.



- *CA Certificates* — Select which authority certificates are valid for server verification in wireless LAN authentication when using this Internet access point. This page shows all the installed authority certificates on the device. All certificates are disabled by default.



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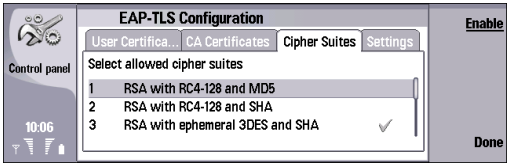
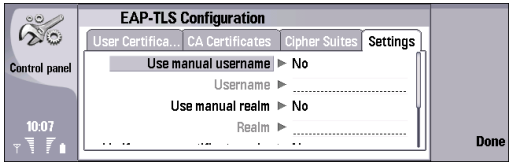
- *Cipher Suites* — Select which TLS (transport layer security) cipher suites you want to use with this Internet access point.

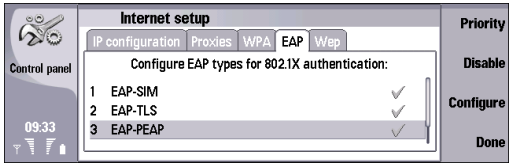


- *Settings* — Define the following:
  Use manual username — This setting overrides the user name in the initial identity response in a case when the server requires that the user performs the initial identification with a predefined user name, for example with a Windows user name.
  If you select *Yes* but leave the *Username* field empty, a random user name is generated for initial identity response.
  Use manual realm — This setting overrides the realm of the initial identity response in a case when the server requires that the user performs the initial identification with a predefined realm. If you select *No*, the realm is derived from the IMSI (international mobile subscriber identity).
  Verify server certificate realm — This setting specifies whether the wireless device compares server realm to its own realm. If the realms match, the wireless device can be more sure of the authenticity of the server.
  Require client authentication — This setting specifies whether the wireless device requires the server to authenticate the wireless device. This is called mutual authentication. In TLS protocol it is not mandatory to verify the identity.
  Maximum session resume count — Specify the maximum number of resumed TLS sessions. If a TLS session is resumed too many times, security may be compromised because certificates are not used in TLS session resumes.



EAP-PEAP

In *Advanced* settings, select the *EAP* page. Select *EAP-PEAP* from the list, and press **Configure**.



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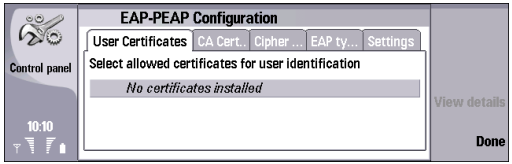
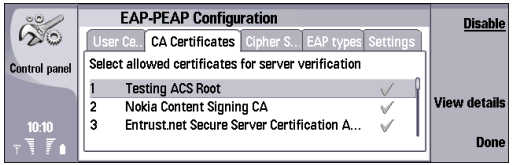
Define the following:

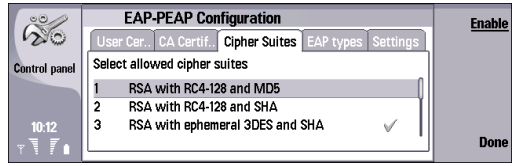
- *User Certificates* — Select the personal certificates for user authentication when using this Internet access point. This page lists all personal certificates installed on the device. The certificates are disabled by default.



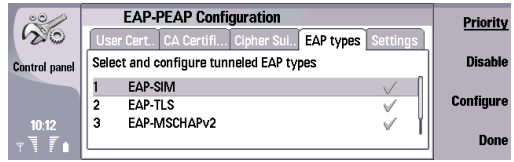
- *CA Certificates* — Select which authority certificates are valid for server verification in wireless LAN authentication when using this Internet access point. This page shows all the installed authority certificates on the device. All certificates are disabled by default.



- *Cipher Suites* — Select which TLS (transport layer security) cipher suites you want to use with this Internet access point.



- *EAP types* — Select and configure the authentication methods you want to run inside the EAP-PEAP method. For details on EAP-MSCHAPV2 and EAP-GTC settings, see "EAP-MSCHAPV2" on page 21 and "EAP-GTC" on page 22.



- *Settings* — Define the following:
  Use manual username — This setting overrides the user name in the initial identity response in a case when the server requires that the user performs the initial identification with a predefined user name, for example with a Windows user name.

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If you select *Yes* but leave the *Username* field empty, a random user name is generated for initial identity response.

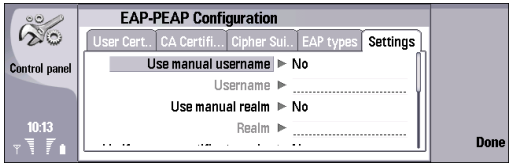
Use manual realm — This setting overrides the realm of the initial identity response in a case when the server requires that the user performs the initial identification with a predefined realm. If you select *No*, the realm is derived from the IMSI (international mobile subscriber identity).

Verify server certificate realm — This setting specifies whether the wireless device compares server realm to its own realm. If the realms match, the wireless device can be more sure of the authenticity of the server.

Require client authentication — This setting specifies whether the wireless device requires the server to authenticate the wireless device. This is called mutual authentication. In TLS protocol it is not mandatory to verify the identity.

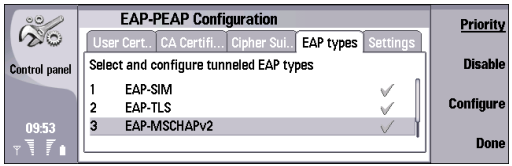
Maximum session resume count — Specify the maximum number of resumed TLS sessions. If a TLS session is resumed too many times, security may be compromised because certificates are not used in TLS session resumes.

Allow PEAP version 0 — Select *Yes* to allow the use of PEAP version 0, or *No* to deny it. Similarly, you can define the use of PEAP versions 1 and 2.



EAP-MSCHAPV2

In *Advanced* settings, select the *EAP* page. Select *EAP-PEAP* from the list, and press **Configure**. Select the *EAP types* page, select *EAP-MSCHAPV2*, and press **Configure**.



Define the following:

- *Username* — Type your user name if you do not want to be asked for the user name during each authentication session.
- *Password prompt* — Select *No* if you do not want to be asked for the password, and type the password in the *Password* field.

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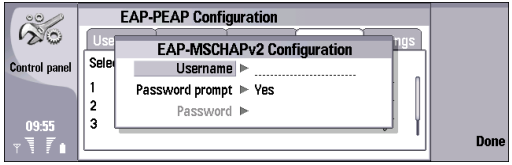
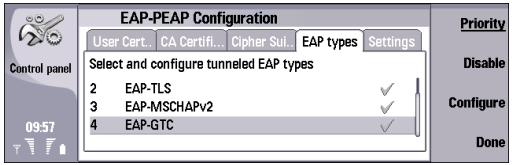
If you select *No* in the *Password prompt* field, the password is stored in the device, and this decreases the level of security.

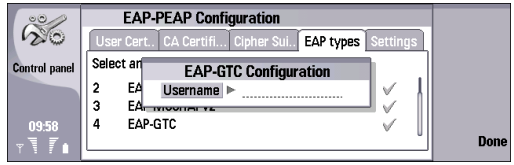


EAP-GTC

In *Advanced* settings, select the *EAP* page. Select *EAP-PEAP* from the list, and press **Configure**. Select the *EAP types* page, select *EAP-GTC*, and press **Configure**.

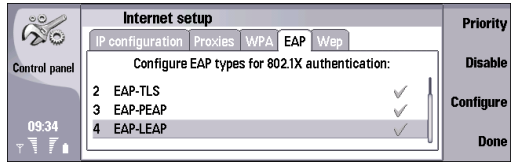


Type your *Username* if you do not want to be asked for the user name during each authentication session.



EAP-LEAP

In *Advanced* settings, select the *EAP* page. Select *EAP-LEAP* from the list, and press **Configure**.



Define the following:

- *Username* — Type your user name if you do not want to be asked for the user name during each authentication session.
- *Password prompt* — Select *No* if you do not want to be asked for the password, and type the password in the *Password* field.

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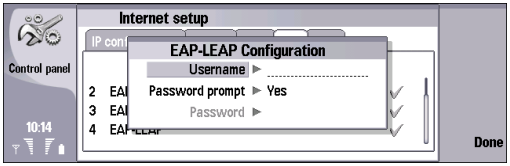
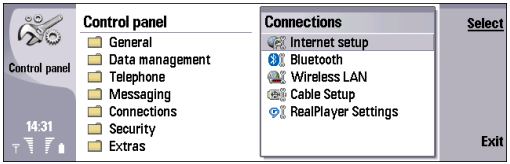
If you select *No* in the *Password prompt* field, the password is stored in the device, and this decreases the level of security.



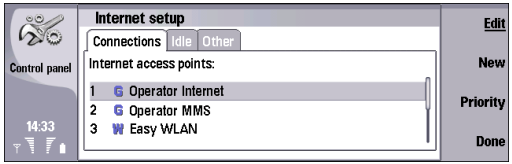
Configuring Internet connection settings

Select **Desk**→ **Tools**→ **Control Panel**→ **Connections**→ **Internet setup**.

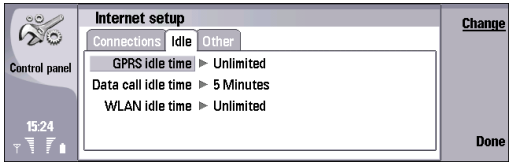


These settings affect all Internet connections.

1 In the *Connections* page, you can change the priority of Internet access points. Press **Priority**, select an Internet access point, and press **Move up** or **Move down**, and finally press **Done**. When you establish a data connection, the access points are searched for in the order you have specified.



2 Press **Menu** to access the *Idle* page, and define the following:
GPRS idle time, *Data call idle time*, and *WLAN idle time* – Define the time period after which the connection ends automatically and returns to the standby mode if not used. You can specify a different time for each connection type, but the setting affects all Internet access points using that connection type.
Some Internet connections may appear inactive, but they may still be sending and receiving data in the background. These connections may postpone the closing of the connection.



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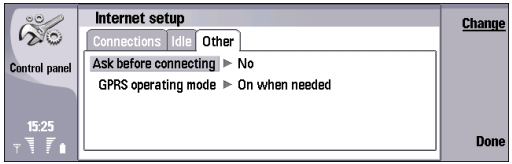
3 Press **Menu** to access the *Other* page, and define the following:

- *Ask before connecting* — If you select *Yes*, a dialog appears every time you connect to the Internet, asking you to confirm the connection or to change the Internet access point.
- *GPRS operating mode* — Select *Always on* to keep the GPRS connection in alert mode and to switch the packet data transfer on quickly when needed. If you select *On when needed*, the device uses a GPRS connection only when you start an application or action that needs it.
  Note that if there is no GPRS coverage and you select *Always on*, the device will periodically try to establish a GPRS connection.



4 Press **Done**.

Selecting an Internet access point

When you establish an Internet connection, you are asked to select the Internet access point you want to use for that connection. In the *Network connection* dialog, select an Internet access point from the list, and press **Connect**. Before connecting, you can filter the list of access points according to the network type. To view all Internet access points, select *All networks*. To view Internet access points that are currently available, press **Show available**.

For example, if you are using the *Offline* profile, no GPRS or GSM Internet access points are shown in the list.

Tip: The *Network connection* dialog opens only if you have selected *Yes* in the *Ask before connecting* field in the general Internet access point settings. To check the status of the setting, select *Desk*→ *Tools*→ *Control Panel*→ *Connections*→ *Internet setup*→ *Other* page.

If you have defined *No* in the *Ask before connecting* field in the general Internet access point settings, the device uses the Internet access point that is first in the IAP priority list. If that connection is not available, the device uses the second IAP on the list, and so on. To check and change the IAP priority list, select *Desk*→ *Tools*→ *Control Panel*→ *Connections*→ *Internet setup*, and on the *Connections* page, and press **Priority**. See "Configuring Internet connection settings" on page 23.

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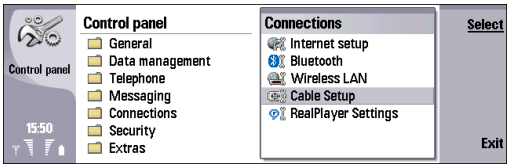
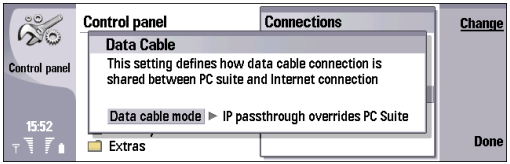
Activating IP passthrough

Select **Desk**→ **Tools**→ **Control Panel**→ **Connections**→ **Cable Setup**..



Before you can use IP passthrough connection, you must activate the data cable for IP passthrough.

1 In the *Data Cable* window, define the *Data cable mode*. Select *IP Passthrough* to always use the data cable for the IP passthrough Internet access point. If you select *IP Passthrough overrides PC Suite* your Nokia PC Suite connection may be terminated if an IP connection is established,



2 Press **Done** and confirm the setting by pressing **Save**.
3 Press **Exit** to close the *Control Panel*.

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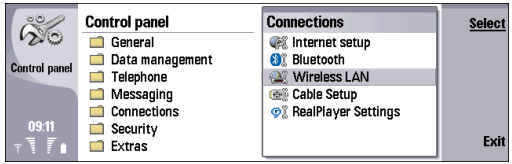
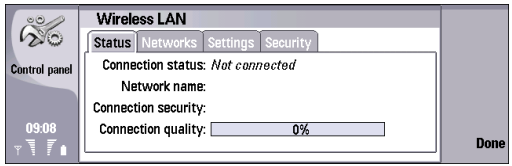
Configuring wireless LAN

Select **Desk**→ **Tools**→ **Control Panel**→ **Connections**→ **Wireless LAN**.

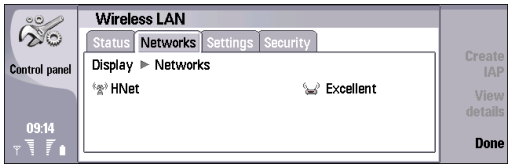


1 On the *Status* page, you can view the connection status, network name, connection security, and connection quality.



2 Press **Menu** to access the *Networks* page. Here you can view information on networks, wireless LAN access points, or ad hoc networks. In the *Display* field, select the network item you want, and press **View details**. Select one of the following:

- *Networks* — Select this to view all the wireless LAN networks that can be accessed and the signal strength of that network.
- *Access points* — Select this to view the wireless LAN access points that are currently in range and available and the radio frequency channel they are using.
- *Ad hoc networks* — Select this to view available ad hoc networks.



3 Press **Menu** to access the *Settings* page, and define the following:

- *Background scan interval* — Specify how often you want the device to scan for available networks. To reduce battery consumption, select *Never*. The wireless LAN icon is displayed in the indicator area when a network is found.

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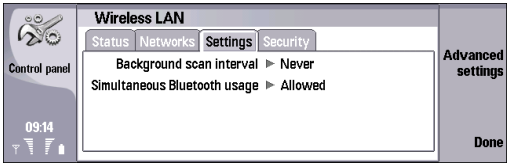
- *Simultaneous Bluetooth usage* — Select *Allowed* if you want to be able to use a Bluetooth connection during a wireless LAN connection.



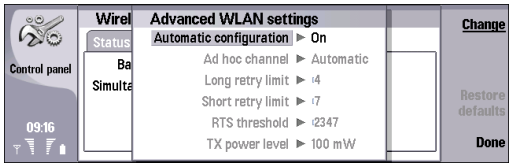
Note: If you are using Bluetooth voice connection, you cannot have a simultaneous wireless LAN connection. Only simultaneous data connections are allowed.

Note: Note that if you are using an adhoc wireless LAN connection, you cannot have a simultaneous Bluetooth connection.

4 Press **Advanced settings**→ **OK**. Define the following:

- *Automatic configuration* — Select *Off* if you want to specify the advanced wireless LAN settings manually. Do not change the settings manually unless you are sure how each setting affects system performance. System performance may drop dramatically if automatic settings are not used.
- *Ad-hoc channel* — Specify the radio frequency channel on which you want to set up an ad hoc network. Select *Automatic* if you want to be allocated an available channel automatically.
- *Long retry limit* — Indicates the maximum number of transmission attempts of a frame whose size is greater than the RTS (request to send) threshold.
- *Short retry limit* — Indicates the maximum number of transmission attempts of a frame whose size is less than or equal to the RTS threshold.
- *RTS threshold* — Determines the data packet size at which the wireless LAN access point issues a request to send before sending the packet.
- *TX power level* — Indicates the power level used when transmitting data.

To use the original factory settings, press **Restore defaults**.



5 Press **Done** to return to the *Settings* page.

6 Press **Menu** to access the *Security* page. Here you can view details on EAP (extensible authentication protocol) security modules. The page contains a list of the installed EAP modules that are used in a wireless LAN to relay port access requests between wireless

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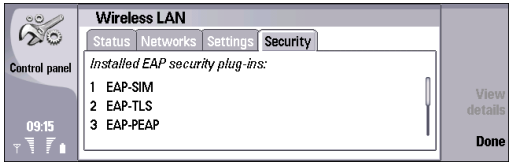
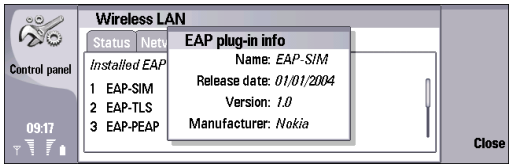
devices, wireless LAN access points, and authentication servers.



7 Select an EAP module, and press **View details**. Each of these modules can be modified together with Internet access points. See "Modifying EAP module settings" on page 17.



8 Press **Close** to return to the *Security* page.
9 Press **Done**→ **Exit**.

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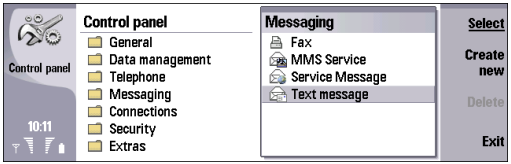
Configuring text messages (SMS)

Select **Desk**→ **Tools**→ **Control Panel**→ **Messaging**→ **Text message**.



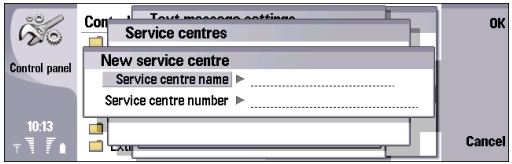
Note: Before you can send and receive text messages, the following conditions must exist:

- The phone must be turned on.
- The network you are using must support the text message service.
- The text message service must be activated for your SIM card.
- The text message settings must be defined.

To edit service centers, do the following:

1 In the *Text message settings* view, press Service centres→ New to add a new service center; or select an existing service center and press Edit. To delete an existing service center, select it and press Delete.

2 In the *New service centre* page, enter a *Service centre name* and *Service center number*. Contact your service provider for these settings. When you are done, press **OK**.



3 Press **Close** to return to the *Text message settings* view.

To edit text message settings, do the following:

1 On the *General* page, define the following:

- *Service centre in use* — Select the message you want to deliver your text messages.
- *Delivery report* — Select *Yes* if you want to view the status of sent messages in the Log.
- *Send text message* — Select when to send text messages. If you select *Upon request*, select a message in *Outbox* and press **Send** to send it.

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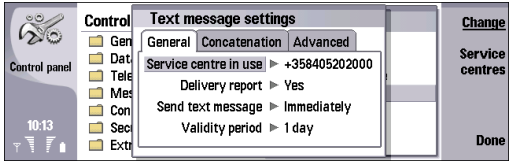
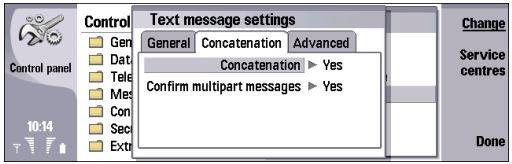
- *Validity period* — Select for how long the message center stores messages if a recipient cannot be reached.



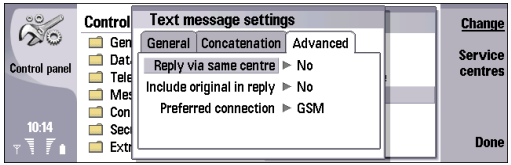
2 Press **Menu** to access the *Concatenation* page, and define the following:

- *Concatenation* — Select *Yes* to send text messages exceeding 160 characters as a single message to other devices.
- *Confirm multipart messages* — Select *Yes* to see a confirmation note when you send text messages that exceed 160 characters.



3 Press **Menu** to access the *Advanced* page, and define the following:

- *Reply via same centre* — Select *Yes* to set the recipient's reply messages to use the same message center you are using. Note that this setting may not work if you and your recipient are using different operators. Select *No* to set the recipient replies to go through the message center defined in the recipient's device.
- *Include original in reply* — Select *Yes* to copy the text of the received message to your reply.
- *Preferred connection* — Select the connection to use for sending text messages (*GSM* or *GPRS*). Note that the messages are automatically sent using GPRS if it is available, and using GSM if GPRS is not available.



4 Press **Done** to return to the *Messaging* view, then **Exit** to close the *Control panel*.

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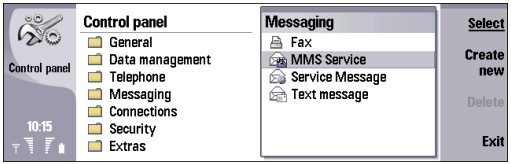
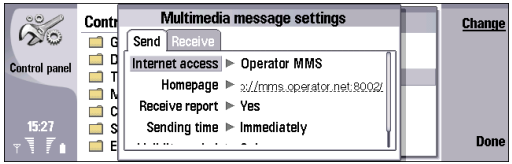
Configuring multimedia messages (MMS)

Select **Desk**→ **Tools**→ **Control Panel**→ **Messaging**→ **Multimedia message**.



1 In the *Send* page, define the following:

- *Internet access* — Select the Internet access point (IAP) connection you want to use for sending messages.
- *Homepage* — Type the address of the multimedia messaging center.
- *Receive report* — Select whether you want to receive a notification when the message has been successfully delivered to the recipient. Receiving a delivery report of a multimedia message that has been sent to an e-mail address may not be possible.
- *Sending time* — Select when you want the multimedia message to be sent. If you select *Upon request*, select a message in *Outbox* and press **Send** to send it.
- *Validity period* — Select how long the messaging center tries to send the message. If the recipient of a message cannot be reached within the validity period, the message is removed from the multimedia messaging center. *Maximum* is the maximum amount of time allowed by the network. Note that the network must support this feature.



2 Press **Menu** to access the *Receive* page, and define the following:

- *Receive multimedia messages* — Select *On* if you want to receive multimedia messages. The reception of multimedia messages is on by default. Select *Deferred* if you want the multimedia messaging center to save the messages to be retrieved later. Change this setting to *On* when you want to retrieve the messages. Select *Reject* if you want to reject multimedia messages. The multimedia messaging center will delete the messages.
- *Receive advertisements* — Select whether you want to receive messages defined as advertisements.

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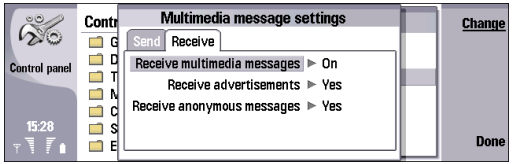
- *Receive anonymous messages* — Select whether you want to receive messages from unknown senders.



3 Press **Done** to return to the *Messaging* view, then **Exit**.

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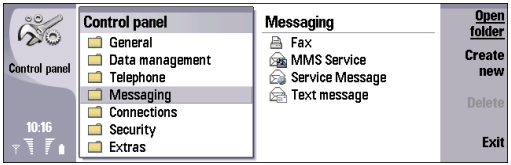
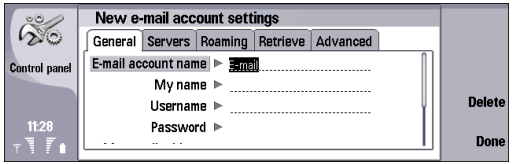
Creating an e-mail account

Select **Desk**→ **Tools**→ **Control Panel**→ **Messaging**.



1 In the *Messaging* view, press **Create new**.
2 Select the account type and press **OK**.
3 In the *General* page, define the following:
- *E-mail account name* — Type a descriptive name for the connection. Note that the name can be 25 characters long.
- *My name* — Type your name.
- *Username* — Type your user name, given to you by your service provider.
- *Password* — Type your password. If you leave this field blank, you will be prompted for a password when you try to connect to your remote mailbox.
- *My e-mail address* — Type the e-mail address given to you by your service provider. The address must contain the @ character. Replies to your messages are sent to this address.
- *Internet access* — Select the Internet access point that you want to use.
- *Default account* — If you have created several e-mail accounts, select the e-mail account you want to use as the default account.



4 Press **Menu** to access the *Servers* page, and define the following:
- *E-mail account type* — Select the e-mail protocol your remote mailbox service provider recommends. Note that this setting can be selected only once and cannot be changed if you have saved or exited from the mailbox settings.

Tip: POP3 is a version of post office protocol, a standard protocol for receiving e-mail from your remote server. With POP3, you can check your remote mailbox and download your e-mail. IMAP4 is a version of Internet Message Access Protocol, a standard protocol for accessing e-mail on your remote server. With IMAP4, you can conduct searches, create, delete, and manage messages and folders on the server.

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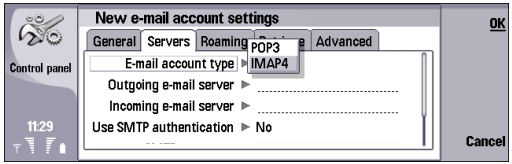
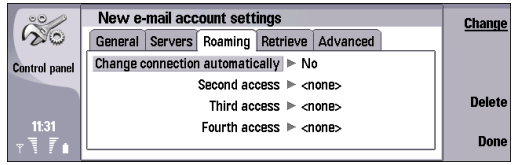
- *Outgoing e-mail server* — Type the IP address or host name of the computer that sends your e-mail.
- *Incoming mail server* — Type the IP address or host name of the computer that receives your e-mail.
- *Use SMTP authentication* — Select whether the SMTP (simple mail transfer protocol) server requires authentication, and type the SMTP user name and password.



5 Press **Menu** to access the *Roaming* page, and define the following:

- *Change connection automatically* — Select whether you want the device to switch between connections automatically if connection to the primary Internet access point is lost.
- *Second access*, *Third access*, and *Fourth access* — Define the other possible Internet access options. Select an access and press **Define**.



6 Press **Menu** to access the *Retrieve* page, and define the following:

- *Retrieve* — Select whether you want to retrieve only the e-mail header information such as sender, subject and date, emails, or e-mails with their attachments, or whether you want the device to ask this before retrieving.
- *Max.. size of e-mail* — Define how large e-mails are retrieved to your device. Note that this setting is not available if you have defined *Mail headers (stay online)* in the *Retrieve* setting.
- *Sync. e-mails in Inbox* — Select the number of e-mails you want to download from the remote server to your *Inbox*.

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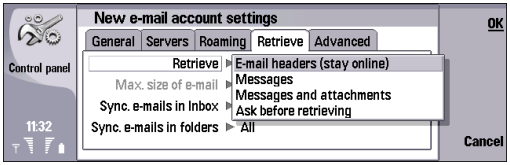
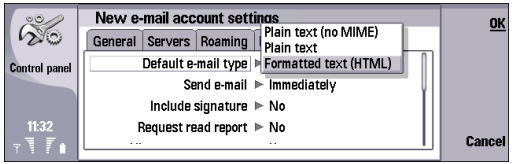
- *Sync. e-mails in folders* — Select the number of e-mails you want to download from the remote server to your folders.



7 Press **Menu** to access the *Advanced* page, and define the following:

- *Default e-mail type* — Select whether to send e-mail as *Plain text*, *Plain text (no MIME)* if the receiving e-mail system cannot display e-mail sent in the regular Internet format, or *Formatted text (HTML)* to be able to use enhanced text formatting options.
- *Send e-mail* — Select *Immediately* to send the e-mail as soon as possible, *During next connection* to send it the next time you retrieve e-mail, or *Upon request* to store the e-mail in the *Outbox*, from which you can send it later.
- *Include signature* — Select whether you want to use a signature. Select *Use my contact card* to use the contact card in the device, or *Custom* to use a signature file that you can create for the e-mail account.
- *Request read report* — Select whether you want to receive a note when the recipient has opened your e-mail.
- *Allow report requests* — Select whether you want the sender of the e-mail to receive a note that you have read the e-mail.
- *Copy to my mail address* — Select whether you want to receive a copy of every e-mail you send.
- *Incoming secure connection* — Select whether you want the incoming connection to be secure (*TLS* or *SSL*). Note that your service provider must support this feature.
- *Outgoing secure connection* — Select whether you want the outgoing connection to be secure (*TLS* or *SSL*). Note that your service provider must support this feature.
- *IMAP4 folder path* — Type the path to the IMAP4 inbox location in case the server cannot open it automatically. Normally you do not need to define the path.



8 Press **Done** to return to the *Messaging* view, then **Exit**. To edit an existing account, select the account type that you want to edit, and press **Select**.

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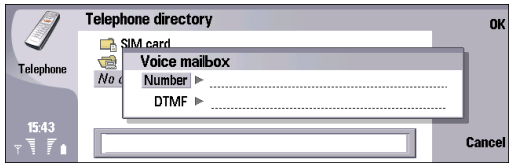
Configuring voice mailbox (network service)

Press **Telephone**→ **Voice mailbox**; or press **Telephone**→ **Menu**→ **Settings**→ **Voice mailboxes**.

Before you can use your voice mailbox, the following conditions must exist:

- The phone must be turned on.
- You must have obtained a voice mailbox number from your service provider.
- The voice mailbox settings must be defined.

1 In the *Voice mailbox* view, define the following:
   - *Number* — Enter the phone number of your voice mailbox. Contact your service provider for this setting.
   - *DTMF* — Enter a DTMF tone sequence to use with the voice mailbox. Contact your service provider for this setting.
2 Press **OK**.



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