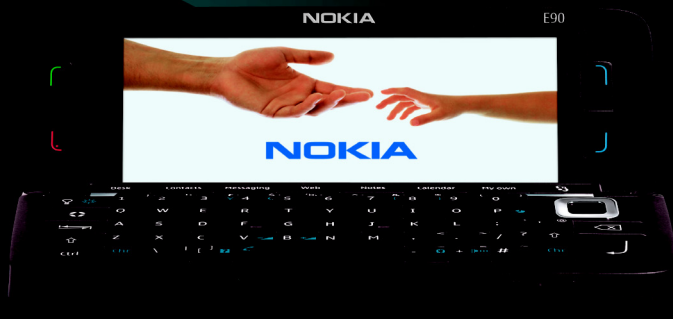


# Net calls



Nokia E90 Communicator

**NOKIA**  
Eseries

# Nokia E90 Communicator Net calls

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# Net calls

Your Nokia E90 Communicator supports voice calls over the Internet (net calls). With the net call service (network service), you can make and receive calls over the Internet. Net calls can be made from places that have a broadband connection and WLAN access, e.g. homes, hotspots at airports, and cafes.




**Note:** The Net Call service must be set up on your Nokia E90 Communicator before you can make or receive calls. In addition to an active WLAN connection, you need a net call account from a SIP VoIP service provider.

VoIP (Voice Over Internet Protocol) technology is a set of protocols that facilitate phone calls over an IP network, such as the Internet. VoIP phone calls can be established between computers, between mobile phones, and between a VoIP device and a traditional telephone. To make or receive a VoIP call, your device must be within WLAN coverage.

The availability of the net call service may vary according to your country or sales area.

## Define the net call settings

If your net call service provider offers provisioning for the SIP VoIP settings, it is suggested to use the provisioning service instead of defining the settings manually. For details, contact your service provider.

Before you can make net calls, you need to define the net call settings. After you have defined the net call settings with these instructions, your device logs in to the net call service automatically when you select  > [Connectivity](#) > [Internet tel.](#)



To define the net call settings, do the following:

- 1 Define a SIP profile.
- 2 Define a net call profile.
- 3 Select a preferred net call profile (optional).

## Define a SIP profile

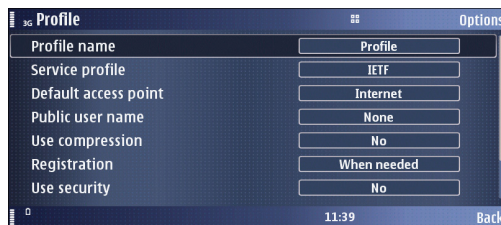
- 1 Select **☰** > **Tools** > **Settings** > **Connection** > **SIP settings** > **Options** > **New SIP profile**.

Contact your net call service provider for the correct information.

Define the following settings:

- **Profile name** — Enter a name for the SIP profile.
- **Service profile** — Select **IETF** or **Nokia 3GPP** as specified by your service provider. The default is **IETF**.
- **Default access point** — Select the access point to use for the Internet connection.
- **Public user name** — Enter your user name received from your service provider.
- **Use compression** — Select **Yes** or **No** as specified by your service provider. The default is **No**.
- **Registration** — For automatic login, set the registration mode to **Always on**. For manual login, set it to **When needed**.
- **Use security** — Select **Yes** or **No** as specified by your service provider. The default is **No**.
- **Proxy server** — Enter the proxy server settings for this SIP profile. See "Define SIP proxy server details", p. 5.

- **Registrar server** — Enter the registration server settings for this SIP profile. See "Define registration server details", p. 6.



- 2 Select **Back** until you return to the **Connection** menu.

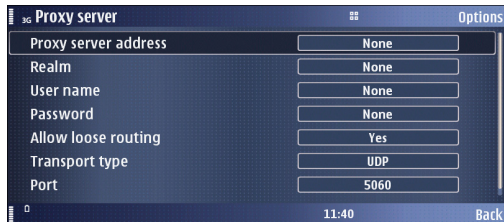
## Define SIP proxy server details

- 1 Select **Proxy server**.

Proxy servers are intermediate servers between a browsing service and its users used by some service providers. These servers may provide additional security and speed up access to the service.

Define the following settings:

- **Proxy server address** — Enter the host name or IP address of the proxy server in use.
- **Realm** — Enter the proxy server realm.
- **User name** and **Password** — Enter your user name and password for the proxy server.
- **Allow loose routing** — Select **Yes** or **No** as specified by your service provider. The default is **Yes**.
- **Transport type** — Set the **Transport type** to **Auto**.
- **Port** — Enter the port number of the proxy server.



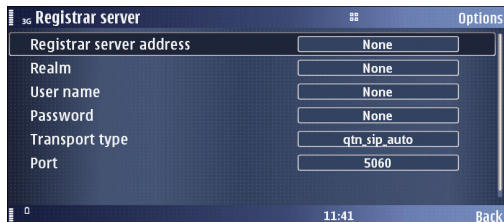
- 2 Select *Back* until you return to the *Connection* menu.

## Define registration server details

- 1 Select *Registrar server*.

Define the following settings:

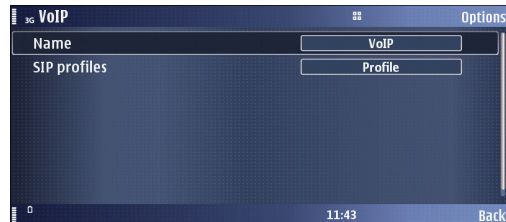
- *Registrar serv. addr.* – Enter the host name or IP address of the registrar server in use.
- *Realm* – Enter the registrar server realm.
- *User name* and *Password* – Enter your user name and password for the registrar server.
- *Transport type* – Set the *Transport type* to *Auto*.
- *Port* – Enter the port number of the registrar server.



- 2 Select *Back* until you return to the *Connection* menu.

## Define a net call profile

- 1 Select *Tools* > *Settings* > *Connection* > *Internet tel.* > *Options* > *New profile*. Enter a name for the profile, and select the SIP profile you just created.




- 2 Select *Back* until you return to the main menu.

## Select a preferred net call profile

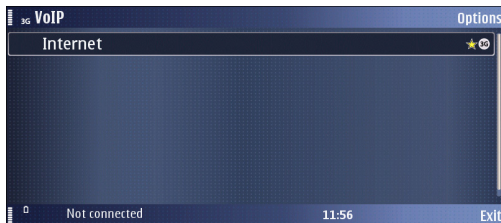
If you select a preferred net call profile, *Internet tel.* automatically uses this network profile to connect to the net call service.

- 1 Select *Connectivity* > *Internet tel.*
- 2 Select *Options* > *Change service* and the net call profile you just created.
- 3 Select *Back* until you return to the main menu.

## Connect to the net call service

To make or receive a net call, your device must be connected to a net call service. Select  > **Connectivity** > **Internet tel.**

If you have selected automatic login, your device automatically connects to the net call service. If you manually login to the service, choose an available connection network from the list, and press the scroll key to connect to the net call service. The saved networks, which are marked with a star icon, are shown first on the list. If you want to stop the connection from establishing, select **Cancel**.



Select **Options** and from the following:

- **Connect to service** – Establish a connection to a service, when there is a net call service and suitable connection network available.
- **Disconnect from service** – End the connection to the net call service.

- **Change service** – Choose the net call service for outgoing calls if the device is connected to more than one service. This option is shown only if there is more than one configured service available.
- **Configure service** – Configure new services. This option is shown only if there are services that have not been configured.
- **Save network** – Save the network to which you are currently connected. The previously saved networks are marked with a star icon on the list of connection networks. This option is shown only if you are connected to an unsaved WLAN network.
- **Use hidden network** – Connect to a net call service using a hidden WLAN network.
- **Refresh** – Manually refresh the list of connection networks. Use this option, if your WLAN network is not shown on the list. The list is also refreshed automatically every 15 seconds.

The available options may vary.

Your device can be connected only to one WLAN access point at a time. If you use two or more net call services, which use the same access point, your device may be connected to multiple services at the same time. The service used for outgoing net calls is shown in the view, where the connection networks are listed, and can be changed by selecting **Change service**.


After you have successfully connected to a service, you can save the used WLAN as a known access point.

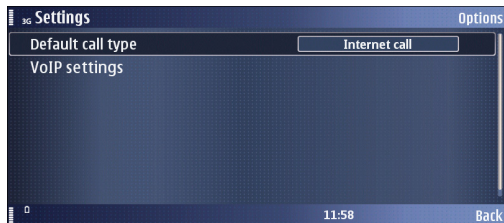
## Connect using a shortcut


You may have a shortcut for [Internet tel.](#) in the active standby or you can add a shortcut if it is not available. By using the shortcut, you can register manually if a net call service and an access point are available. If you are already connected to a net call service, the device asks if you want to disconnect from the service.

## Make net calls

If you set [Internet call](#) as the preferred call type and your device is connected to a net call service, calls are made as net calls as the default.

To set the preferred call type for outgoing calls, select  > [Connectivity](#) > [Internet tel.](#) > [Options](#) > [Settings](#) > [Default call type](#) > [Cellular](#) or [Internet call](#).



After you have connected to a net call service,  icon appears on the display in the standby mode, indicating that you have an active WLAN connection and that the


device is registered with a SIP server so you can make Internet calls.


You can make a net call from all applications where you can make a regular voice call.

To make a net call in the standby mode, enter the phone number or Internet address, and press the call key.




**Note:** To make a net call to an address that does not start with a digit, press any number key when the device is in the standby mode; then press # to clear the display and to switch the device from number mode to letter mode. Write the address, and press the call key.

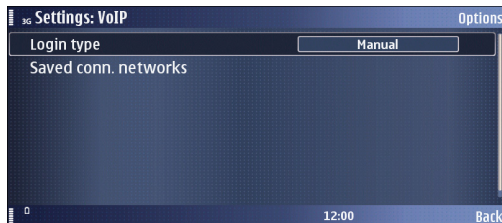
You can also make a net call from [Contacts](#) and [Log](#). To make a call from [Contacts](#), select  > [Contacts](#), and scroll to the desired contact. Select [Options](#) > [Call](#) > [Internet call](#).

To make a call from [Log](#), select  > [Log](#) > [Recent calls](#) and [Missed calls](#), [Received calls](#) or [Dialled numbers](#), and scroll to the desired contact. Select [Options](#) > [Call](#) > [Internet call](#).



## Service settings

Select  > [Connectivity](#) > [Internet tel.](#), and a service.  
Select [Options](#) > [Settings](#), and a service, and press the scroll key.



Select [Login type](#) to view or change the way [Internet tel.](#) connects to the net call service. Select from the following:

- [Automatic](#) – Login automatically to the net call service. When a known network is found, the device automatically connects to the net call service. If you use the automatic login type for WLAN networks, the device periodically scans for WLAN networks, which increases the demand on battery power and reduces the battery life.
- [Manual](#) – Login manually to the net call service.


Select [Saved conn. networks](#) to view the connection networks you have saved for the net call service or the connection networks, which are recognized by the net call service. These networks are used for automatic login and are marked with a star icon on the list of connection


networks. To remove a connection network from the service, select [Options](#) > [Remove](#).

Select [Edit service settings](#) to open the service-specific settings. This option is only available if a service-specific software plugin has been installed in the device.

## Profile settings


Select  > [Connectivity](#) > [Internet tel.](#) to change settings.

Before you can select the default profile, you must create profiles in  > [Tools](#) > [Settings](#) > [Connection](#) > [Internet tel.](#).

To select the profile that is used by default when you make net calls, select  > [Connectivity](#) > [Internet tel.](#) > [Options](#) > [Change service](#). Select the desired profile, and press the scroll key.

To view or change the registration of your Internet telephone profiles in the local WLAN network, select [Registration status](#), and press the scroll key. Scroll to the profile that you want to register or unregister, and press the scroll key. Press the scroll key again to select [Registered](#) or [Not registered](#).







**Note:** Only those profiles where you have selected [Registration](#) > [When needed](#) setting in  > [Tools](#) > [Settings](#) > [Connection](#) > [SIP settings](#) are shown in the list.

To save your settings, select [Back](#).

## Other features

The net call implementation includes the following features:

- Multiple net call profiles.
- Support for cable and Bluetooth headset.
- DTMF support.
- Volume control and mute.
- You can place an ongoing net call on hold, and make a new call. You can also switch between the call on hold and the new call.
- During an ongoing net call, you receive an alert of another incoming call. To activate net call waiting, select  > *Tools* > *Settings* > *Phone* > *Call* > *Internet call waiting*. Press the scroll key to activate net call waiting.
- You can restrict anonymous net calls by activating net call barring. Select  > *Tools* > *Settings* > *Phone* > *Call barring* > *Internet call barring*, and set *Anonymous calls* to *On*.
- You can hide your identity from the net call receivers. Select  > *Tools* > *Settings* > *Phone* > *Call* > *Send my internet call ID*, and press the scroll key to select *No*. To enable the call ID to be sent, select *Yes*.
- You can reject incoming net calls automatically and inform the caller that you cannot answer incoming calls. Select  > *Tools* > *Settings* > *Phone* > *Call* > *Internet call alert*. Press the scroll key to set the alert *Off*. To enable net call alerts, select *On*.

- If you forward an incoming call, the caller is informed that the call is being forwarded to another recipient.

## Network Address Translation (NAT)

Nokia E90 Communicator supports STUN (Simple Traversal of UDP Through NATs) servers for NAT (Network Address Translation) traversal, for networks where you do not have a public IP address. Even with STUN servers in use it is possible that the connection will not work, as some types of NATs still block the traffic.

The settings for NAT traversal can only be provisioned by the service provider, for example over the air or via download, but cannot be edited manually by the user.

Unlike the SIP settings and net call settings, the NAT settings cannot be defined manually, and it is therefore recommended to use provisioning offered by the net call service provider.

Note that NAT settings can be provisioned with an OMA client by using a Nokia Intellisync Device Manager (OMA DM) server. For more information about provisioning, see [forum.nokia.com](http://forum.nokia.com). Note also that NAT can be handled by SIP service providers, too, when they have Session Border Controller (SBC) available to handle the NATted client connections.

## NAT

There are two types of network address translation. The type often popularly called simply NAT (also named Network Address Port Translation or NAPT) refers to network address translation involving the mapping of port numbers, allowing multiple machines to share a single IP address. The other, technically simpler form – also called NAT or basic NAT or static NAT – involves only address translation, not port mapping. This requires an external IP address for each simultaneous connection. Broadband routers often use this feature to allow a designated computer to accept all external connections even when the router itself uses the only available external IP address.

## STUN

STUN (Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NATs)) is a network protocol allowing a client behind a NAT (or multiple NATs) to find out its public address, the type of NAT it is behind and the Internet side port associated by the NAT with a particular local port. This information is used to set up UDP communication between two hosts that are both behind NAT routers.

STUN is a client-server protocol. Nokia E90 Communicator includes a STUN client which will send a request to a STUN server. The server then reports back to the STUN client the public IP address of the NAT router, and the port opened by the NAT to allow incoming traffic back in to the network.

The response also allows the STUN client to determine what type of NAT is in use, as different types of NATs handle incoming UDP packets differently.

Protocols like SIP use UDP packets for the transfer of sound/video/text signaling traffic over the Internet. As both endpoints are often behind NAT, a connection cannot be set up in the traditional way. This is where STUN is useful.

## Emergency calls

Your device attempts emergency calls primarily over cellular networks. If an emergency call using cellular networks is not successful, your device attempts an emergency call through your net call provider. Due to the established nature of cellular telephony, you should use cellular networks for emergency calls, if possible. If you have cellular network coverage available, make sure that your cellular phone is switched on and ready to make calls before you attempt an emergency call. The capability for an emergency call using Internet telephony depends on the availability of a WLAN network and your net call provider's implementation of emergency call capabilities. Contact your net call provider to check the Internet telephony emergency call capability.