

Operafone IP Professional installation guide

Specifications are subject to change without notice.
Facilities described may or may not be supported by your network.
Operafone is the registered trademark of MDS Gateways.
This documentation refers to software version 20.044 or higher for the IP system phones,
60.100 or higher for the Opera Flexicom/4.12em and
software version 11.100 or higher for the Opera 20IP/4IP.

DM 1032

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1. Introduction

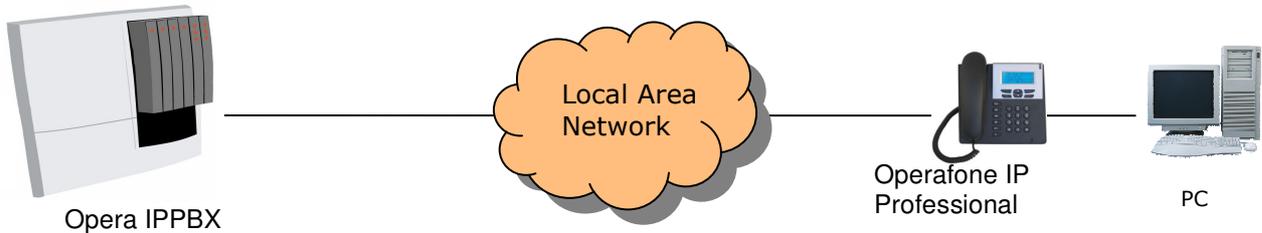
The Operafone IP Professional is a user-friendly Voice Over IP (VoIP) telephone, which can be connected remotely to the Opera system via the Internet or locally via an internal IP network (LAN). Whether locally or remotely connected, the Operafone IP Professional can be used as a fully featured key set with LEDs indicating trunk line and user status and with access to the full range of functions.

- It is shipped with the following accessories:
- One Ethernet cable (straight through)
- Quick Reference Guide

There are two possibilities for connecting the Operafone IP Professional to the Opera system – locally, on the same LAN, or remotely, across a wide area network.

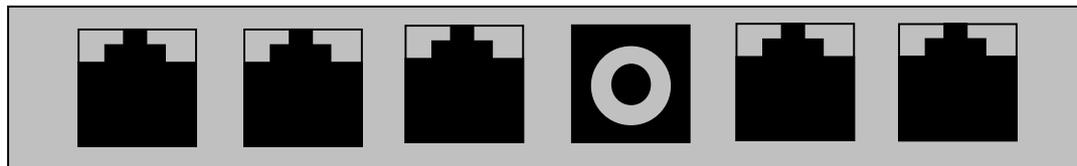
2. Local LAN Connection

The Operafone IP Professional may be connected to the Opera system on the same local area network.



2.1 Wiring Connections

There are six sockets on the back of the Operafone IP Professional:



Headset

DSS

LAN

DC Power

PC

Handset

Headset: This port is used to connect an optional headset

DSS: This port is used to connect to the optional DSS (Direct Station Select) Module. This is a block of 48 keys that can be used for single touch access to all users on the system.

LAN: This is an Ethernet port, which is connected to the Ethernet switch. From here the calls are sent over the LAN to the Opera system. Power can be supplied to the phone through this LAN port from an Ethernet switch/hub that complies with the 802.3af 'Power over the LAN' standard.

DC Power: This is an alternative method to power the phone if power is not supplied from the Ethernet switch. The DC connector of the plug top power supply unit is connected to this socket.

PC: This Ethernet port can be connected to a PC using a straight Ethernet cable. This facilitates a single Ethernet cable to the desk from the LAN carrying both voice and data traffic as shown in the diagram.

Handset: The telephone handset is plugged in to this port.

2.2 Connecting to the Opera system on the LAN

Step 1 Cabling

Connect the LAN port of the phone to the connection point of the local area network using the straight Ethernet cable supplied.

Step 2 Power

Connect the plug top power supply to the DC Power socket on the phone and to the electrical mains.

The phone displays the message:

```
IP Professional
Booting.....
■■■■■■■■■■
** Please Wait **
```

Step 3 Getting an IP address from the LAN

The phone displays the message:

```
Connecting to
DHCP server

Please Wait ...
```

While this message is displayed, the phone obtains an IP address automatically from a DHCP server on the LAN. DHCP is the Dynamic Host Control Protocol that is commonly used to assign IP addresses automatically on a network. When the phone has received its IP address it proceeds to step 4.

However if there is no DHCP server present on the LAN the phone will display the following message:

```
Could not connect to
DHCP server
```

followed by:

```
Press 'Menus' for
manual setup or
Auto Retry in 15
Menus          Retry
```

The phone will now count down to 0 before auto retrying to obtain an IP address. During this period you may press the 'Menus' key to manually programme the IP address of the phone as follows:

-Under the menu option 'Local IP Params' select the option 'DHCP client', and disable it and press set.

- Under the menu option 'Change IP Address' type in the IP address of the phone and press set.
- Similarly set the subnet mask and the IP address of the Internet gateway.
- Press Back and Exit to get to the next step in the process

Step 4 Auto Registration

The phone displays the message:

Attempting to
Auto Register in
15 seconds
Cancel

The phone will count down from 15 seconds to 0 before auto-registering on the Opera system0 system. (During this period you may cancel the Auto-registration and programme the IP address of the advantage IPPBX using the Installation wizard as explained below in step 5.)

The phone now displays the following messages in sequence:

Searching for
advantage

Please Wait....

Connecting to
advantage at
192.168.1.250
Please wait....

Once the phone is registered on the Opera system, the screen will display the date, the day, time and user number as shown below.

16:50 Thu 29/11/08
User 20

Menus ↑↓ Phone Bk

It is now ready to make calls.

Step 5 Optional - Running the Installation Wizard instead of Auto-Registration

The phone displays the message:

Press Start to run
Installation Wizard

Start

Pressing the start button will begin to step through the installation wizard.

Enter the address of the Opera system

The private LAN IP address of the Opera system is entered here. This is necessary to allow the phone to connect to the Opera system.

Enter Server IP: 192.168.1.250 Next

Press next when the IP address has been entered.

IP registration name and IP registration PIN

The Opera system administrator must allocate a unique IP registration name and IP registration password to each IP phone connected to the system. The procedure for this is described in section 6 of this document (Configuring the Opera system for IP system phones). This IP registration name and IP registration password must be entered in the Operafone IP Professional phone. If you do not know them, contact the system administrator and obtain them. When the phone registers with the Opera system, this unique IP registration name and IP registration password are authenticated.

At the prompts, enter the IP registration name from the phone keypad. Please pay particular attention to upper case and lower case letters. Upper and lower case letters can be obtained by pressing the keys repeatedly.

IP registration name — Next Delete

Press Next and proceed to enter the IP registration password.

IP registration password Enter password: _ Next

Press Next to proceed to the next step.

Quality of Service

The last option in the wizard allows you to enable quality of service. Once you have answered Yes or No to this question, the setup wizard is complete and the advantage IP phone will attempt to connect to the Opera system.

Enable Quality of Service ? Yes No

During this time the phone will display the message:

Connecting to Eircom advantage at 192.168.1.250 Please wait...

Once the phone is registered on the Opera system, the screen will display the date, the day, time and user number as shown below.

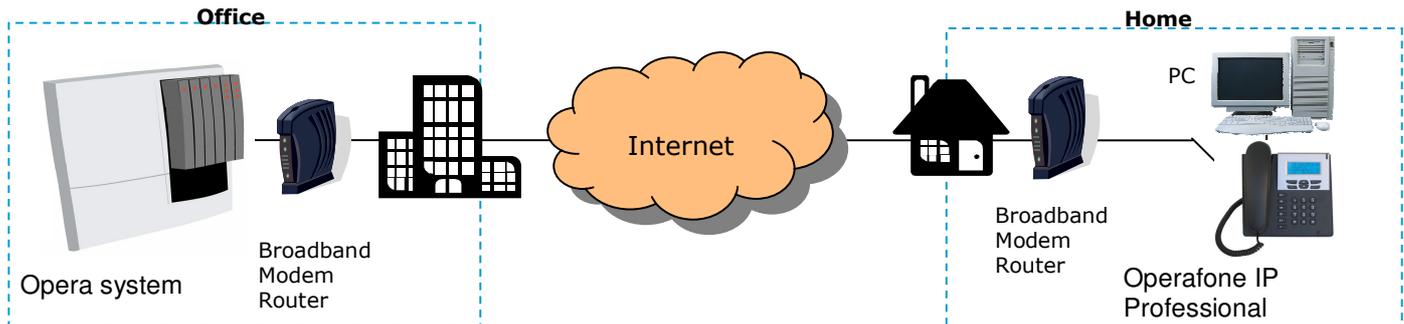
16:50	Thu	29/11/07
User 20		
Menus	↑↓	Phone Bk

It is now ready to make calls.

3. Remote Connection over the Internet

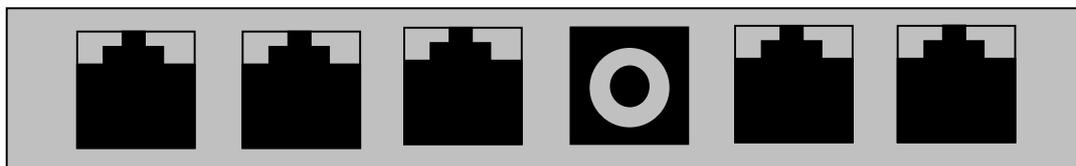
A remote teleworker with a broadband Internet connection can connect the Operafone IP Professional to the Opera system in the main office across the Internet. The remote Operafone IP Professional will have the full system phone capability of an internal user.

First registering the IP system phone on the same LAN as the Opera system, using the auto-registration procedure described above, simplifies remote connection over the Internet. When the phone is registered over the LAN it automatically obtains the public IP address of the Opera system, as well as the local IP address. This eliminates the need to manually programme the public IP address of the Opera system as part of the remote registration procedure.



3.1 Wiring Connections

There are six connection sockets at the back of the Operafone IP Professional phone, as shown below.



Headset

DSS

LAN

DC Power

PC

Handset

Headset: This port is used to connect an optional headset

DSS: This port is used to connect to the optional DSS (Direct Station Select) Module. This is a block of 48 keys that can be used for single touch access to all users on the system.

LAN: This is an Ethernet port, which is connected to the broadband router. From here the calls are sent over the WAN to the Opera system. Power can be supplied to the phone through this LAN port from an Ethernet switch/hub that complies with the 802.3af 'Power over the LAN' standard.

DC Power: This is an alternative method to power the phone if power is not supplied from the Ethernet switch. The DC connector of the plug top power supply unit is connected to this socket.

PC: This Ethernet port can be connected to a PC using a straight Ethernet cable. This facilitates a single Ethernet cable to the desk from the broadband router carrying both voice and data traffic as shown in the diagram.

Handset: The telephone handset is plugged into this port.

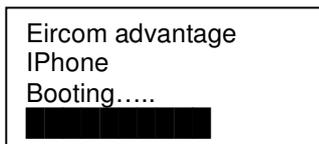
3.2 Installing and Programming the Operafone IP Professional for remote working

Step 1 Cabling

Connect the LAN port of the phone to the connection point of the local area network using the straight Ethernet cable supplied.

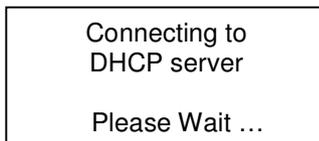
Step 2 Power

Connect the plug top power supply to the DC Power socket on the phone and to the electrical mains. The phone displays the message:



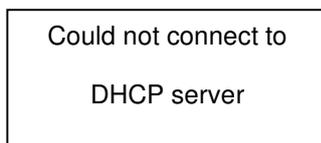
Step 3 Getting an IP address from the Broadband Router

The phone displays the message:

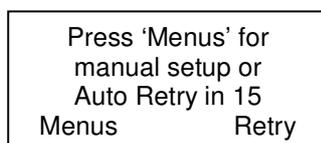


While this message is displayed, the phone obtains an IP address automatically from a DHCP server in the Broadband Router. DHCP is the Dynamic Host Control Protocol that is commonly used to assign IP addresses automatically and is usually provided by the router. When the phone has received its IP address it proceeds to step 4.

However if there is no DHCP server available the phone will display the following message:



followed by:



The phone will now count down to 0 before auto retrying to obtain an IP address. During this period you may press the 'Menus ' key to manually programme the IP address of the phone as follows:

- Under the menu option 'Local IP Params' select the option 'DHCP client', and disable it and press set.
- Under the menu option 'Change IP Address' type in the IP address of the phone and press set.
- Similarly set the subnet mask and the IP address of the Internet gateway.
- Press Back and Exit to get to the next step in the process

Step 4 Auto Registration

The phone displays the message:

Attempting to
Auto Register in
15 seconds
Cancel

The phone will count down from 15 seconds to 0 before auto-registering on the Opera system. If the phone has previously been connected locally to Opera system, it will have received the public IP address necessary to allow it to find the Opera system on the Internet and Auto-Register on the Opera system.

The phone now displays the following messages in sequence:

Searching for
eircom advantage

Please Wait....

Connecting to
eircom advantage at
192.168.1.200
Please wait.....

Once the phone is registered on the Opera system, the screen will display the date, the day, time and user number as shown below.

16:50 Thu 29/11/09
User 20

Menus ↑↓ Phone Bk

It is now ready to make calls.

If the phone has not previously been connected to the Opera system locally, it will be necessary to program the IP address of the Opera system manually. In this case, the Auto registration will fail and the following screen will be displayed:

Attempting to
Auto Register in
15 seconds
Cancel

The phone will count down from 15 seconds to 0 before attempting again to auto-register on the Opera system. During this period, press the cancel button and programme the IP address of the Opera system using the Installation wizard as explained below in step 5.

Step 5 Running the Installation Wizard

The phone displays the message:

Press Start to run Installation Wizard
Start

Pressing the start button will begin to step through the installation wizard.

Enter the address of the Opera system

The public IP address of the Opera system is entered here. This is necessary to allow the phone to connect to the Opera system.

Enter Server IP:
192.168.1.250
Next

Press next when the IP address has been entered.

IP registration name and IP registration PIN

The Opera system administrator must allocate a unique IP registration name and IP registration password to each IP phone connected to the system. The procedure for this is described in section 6 of this document (Configuring the Opera system for IP system phones). This IP registration name and IP registration password must be entered in the Operafone IP Professional phone. If you do not know them, contact the system administrator and obtain them. When the phone registers with the Opera system, this unique IP registration name and IP registration password are authenticated.

At the prompts, enter the IP registration name from the phone keypad. Please pay particular attention to upper case and lower case letters. Upper and lower case letters can be obtained by pressing the keys repeatedly

IP registration name
—
Next Delete

Press Next and proceed to enter the IP registration PIN.

IP registration PIN
Enter reg PIN: _
Next

Press Next to proceed to the next step.

Quality of Service

The last option in the wizard allows you to enable quality of service. Once you have answered Yes or No to this question, the setup wizard is complete and the phone will attempt to connect to the Opera system.

Enable Quality of Service ?	
Yes	No

During this time the phone will display the message:

Connecting to Eircom advantage at 192.168.1.250 Please wait...

Once the phone is registered on the Opera system, the screen will display the date, the day, time and user number as shown below.

16:50 Thu 29/11/07 User 20
Menus ↑↓ Phone Bk

It is now ready to make calls.

4. Connected and Unconnected States

4.1 Connected State

When the above steps have been completed successfully, the Operafone IP Professional will connect to the Opera system, and the display will indicate the date, time and user number. The Operafone IP Professional now has access to the full range of system features and functions in the same way as any other digital user.

4.2 Unconnected State

Once the phone is in the connected state, the IP settings are no longer accessible. In order to check or change the IP settings it is necessary to return the phone to the unconnected state. This can be done by pressing the Menu button and holding it for more than 5 seconds.

In the unconnected state the following menu options can be verified or changed:

Local IP Parameters	DHCP Client Current Settings Change IP Address Change Subnet Mask Change Gateway
Server IP Parameters	Current Settings Change IP Address Change Alt IP Change SIG Port Change RTP Port
Registration Info	IP registration Name IP reg. PIN
Audio Settings	Codec Frame size Silence Compression
Restart Phone	
View log	
MAC address	
Change Language	
Firmware Upgrade	Request Firmware Set FTP Server
Restore defaults	
QoS settings	VLAN Tagging Diffserv
Disable all QOS	
Encryption	

5. Programming the phone using a web browser

The Operafone IP Professional may be programmed via a web browser interface. Open a browser on any PC that is on the same LAN and point it to the IP address of the Operafone IP Professional phone. Authentication details are as follows:

Username: admin
Password: 1000

There is an on-line context sensitive help on each page to guide you.

6. Configuring the Opera 20IP/4IP system for IP system phones

6.1 Auto discovery on the LAN

When the IP system phone is plugged into a LAN and powered up by Power-over-Ethernet or from the mains via its plug-top adaptor, it auto-discovers the Opera 20IP/4IP system on the LAN and is automatically allocated an IP registration name and an IP registration PIN. It also stores the internal and the public IP addresses of the Opera system.

It's ready for use.

Note: The Opera 20IP/4IP system must be equipped with the appropriate software licenses if more than eight IP system phones are connected.

6.2 Universal Plug and Play at the Advantage site

As soon as the Opera system is powered up it broadcasts a Universal Plug and Play (UPnP) request to the Default Gateway address programmed in its IP Addresses table.



The screenshot shows the 'IP Addresses' configuration page. The page has a dark blue header with 'Home' on the left, 'IP Addresses' in the center, and 'Help' on the right. The main content area is light blue and contains a form with the following fields:

System Name	<input type="text" value="advantage.ie"/>
IP Address	<input type="text" value="192.168.1.250"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="192.168.1.254"/>
Preferred DNS Server	<input type="text" value="192.168.1.254"/>
Alternate DNS Server	<input type="text" value="0.0.0.0"/>

At the bottom of the page, there are two buttons: 'Save' and 'Back'.

If the Opera system gets a positive response at the programmed Default Gateway address (default 192.168.1.254), it sets port forwarding at the Gateway, based on the settings in the Gateway Configuration page (see below). It also queries the Gateway for its WAN IP address (public IP address).

Gateway Configuration		
Local IP Address	192.0.0.229	
UPNP Status	OK	
WAN IP Address	213.190.156.142	
Port	Enable Port Forwarding	WAN Port
Diagnostic Logging Port (5040)	<input checked="" type="checkbox"/>	5040
Streaming Diagnostic Logging Port (5041)	<input type="checkbox"/>	5041
Call Logging Port (5070)	<input type="checkbox"/>	5070
Http Port (80)	<input checked="" type="checkbox"/>	7000
VoIP Signalling Port (5075)	<input checked="" type="checkbox"/>	5075
VoIP RTP Ports (50000-50031)	<input checked="" type="checkbox"/>	50000-50031
VoIP Networking Signalling Port (5076)	<input type="checkbox"/>	5076
VoIP Networking RTP Voice Ports (7000-7099)	<input type="checkbox"/>	7000-7099

By default the Opera system implements port forwarding of UDP packets on ports 50000 to 50031 from the Gateway to the local IP address of the Opera system. Similarly, for TCP packets on port 5075. It also forwards port 7000 to port 80 on the Opera system to allow remote browser access. Note: For security, remote access to the Opera system browser is restricted to only those public IP address listed in the RAS IP addresses table.

6.3 If the modem router is not at the default Gateway IP address

If the default local IP address of the modem router has been altered from 192.168.1.254, the Opera system must be manually programmed with the IP address of the Default Gateway (i.e. the router) for Internet access. The local Default Gateway IP address is entered on the IP Settings browser page. This allows the Opera system to direct outgoing traffic to the correct Internet gateway. The Gateway Configuration page is updated automatically to display the Local IP Address entered (192.0.0.229 in the screen example shown above).

6.4 If the modem router does not support Universal Plug and Play

If the SIP ports of the modem router are not open by default and it does not support UPnP, the appropriate VoIP ports on the modem router gateway must be forwarded to the internal IP address of the Opera system, as described in Section 7.4 of this manual, Port Forwarding, and also lower the level of Firewall protection, as described in Step 2 of that section.

6.5 Connecting an IP system phone remotely over Internet

Once an IP system phone has learned its IP registration details by auto-discovery on a LAN, it may be connected to its Opera 20IP/4IP system, securely, remotely over the public Internet by simply plugging it into a broadband router. It automatically registers with its remote Opera system, from anywhere in the world, over the public Internet.

6.6 Entering the system phone IP registration parameters manually

If the system phone had not been connected with its Opera 20IP/4IP system on a LAN before delivery to the end user location, the phone will prompt the user to enter the following parameters at power up at the remote location:

1. Public IP address of the server (remote Opera system).
2. User IP registration name
3. User IP registration PIN

These parameters may be altered at any time by depressing the Menus key on the Executive phone display for 10 seconds and scrolling and selecting the options required.

7. Configuring the Opera Flexicom/4.12em system for IP system phones

7.1 Hardware and Software requirements

The Opera Flexicom/4.12em system must be equipped with an Applications card and a software license for each Operafone IP using an IP channel. The number of IP channels active on the system can be checked, by logging into the Opera system using the installer login and password as described in the system manual. The main installation page is similar to the following.



By Clicking on the System Properties link in the System Settings column the following page is displayed.

System Properties

Software Version Number :	56.359 (UN)
Hardware Revision :	002
MAC Address :	00-09-19-0B-0C-0D
Number of Digital Extensions :	24 (8 + 8 + 8)
Number of Analogue Extensions :	24 (8 + 8 + 8)
Number of T Interfaces :	3 (0 + 3)
Number of Primary Interfaces :	1
Applications Card Version Number :	5.9 more
No DSL Card Connected	
Analogue Modem Not Present	

[Call History](#)
[System Status](#)

[Back](#)
[Help](#)

Click in the link called 'more' after the Applications Card version number to display the following screen.

Applications Card Details

Applications Card Version Number :	5.9
Language :	English
Percentage Used :	31%
Capacity for Additional Messages :	875
Total Storage Capacity :	8 Hours
Number of Channels Available :	8
Number of Voice Mail Channels :	1
Number of Auto-Attendant Channels :	1
Number of Call Record Channels :	2
Number of IP Compression Channels :	3
Number of Music On Hold Channels :	1

[Back](#)
[Help](#)

The number of active IP Compression channels is shown here. Each channel requires a software license, which can be purchased from your Opera system supplier.

7.2 Extension Name and Extension PIN

The Opera system administrator must configure an extension name that will act as the IP registration name and an extension PIN that will act as an IP registration PIN for each Operafone IP on the system. In order to configure a user, connect to the Opera system, through the web browser interface, using the installer login and password as described in the Opera system Manual. The main Installation page is displayed, as shown above.

In the second column headed 'Extension Settings', Click on the link 'Extension Names' and then on the link 'Digital' and the following page will be displayed.

Extension	Name
11	Extn 11
12	Extn 12
13	Extn 13
14	Extn 14
15	Extn 15
16	Extn 16
17	Extn 17
18	Extn 18
60	John
61	Extn 61
62	Extn 62
63	Extn 63
64	Extn 64
65	Extn 65
66	Extn 66
67	Extn 67

Digital Analogue SBus

Save Back Help

The extension name is entered here opposite the relevant Extension number. In the example shown here the default numbering scheme has allocated extensions 60 to 67 as digital IP extensions with default names 'Extn 60' to 'Extn 67'. The Administrator types the name of the Advantage IP user opposite the extension number and clicks on the 'Save' button. Press the 'Back' Button to return to the main page.

By clicking on the link 'PIN Codes' under the heading 'Extension Settings' and then on the link 'Digital' the following page is displayed. The pin code must be entered in the white box opposite the extension number and name. Press 'Save' and 'Back' to exit.

Pin Codes

Digital Extensions:

Extension	Name	Pin Code
11	Extn 11	****
12	Extn 12	****
13	Extn 13	****
14	Extn 14	****
15	Extn 15	****
16	Extn 16	****
17	Extn 17	****
18	Extn 18	****
60	John	****
61	Extn 61	****
62	Extn 62	****
63	Extn 63	****
64	Extn 64	****
65	Extn 65	****
66	Extn 66	****
67	Extn 67	****

Digital **Analogue**

The extension name and PIN code are now registered on the Opera system.

7.3 Default Gateway

The IP Addresses page of the Opera system must be programmed with the IP address of the default gateway for Internet access. This allows the Opera system to direct outgoing traffic to the correct Internet gateway. This page is reached by clicking on the link in the Router Settings column.

IP Addresses

System Name	<input type="text" value="iBox"/>
IP Address	<input type="text" value="192.0.0.85"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="192.0.0.246"/>
Preferred DNS Server	<input type="text"/>
Alternate DNS Server	<input type="text"/>
RAS IP Address 1	<input type="text" value="192.0.0.207"/>
ADSL IP Address	<input type="text" value="192.0.0.16"/>

7.4 Port Forwarding

In the Office location, incoming VoIP calls to the Opera system are routed from the Internet through a gateway modem/router on the LAN to the Opera system. This modem/router must be configured to direct this traffic to the local IP address of the Opera system on the LAN.

In the case of the Opera Flexicom/4.12em, traffic on the following three ports must be sent to the local IP address of the Opera system:

Port 5075 for TCP packets (allows registration and signaling)

Port 50000 for UDP packets (for speech)

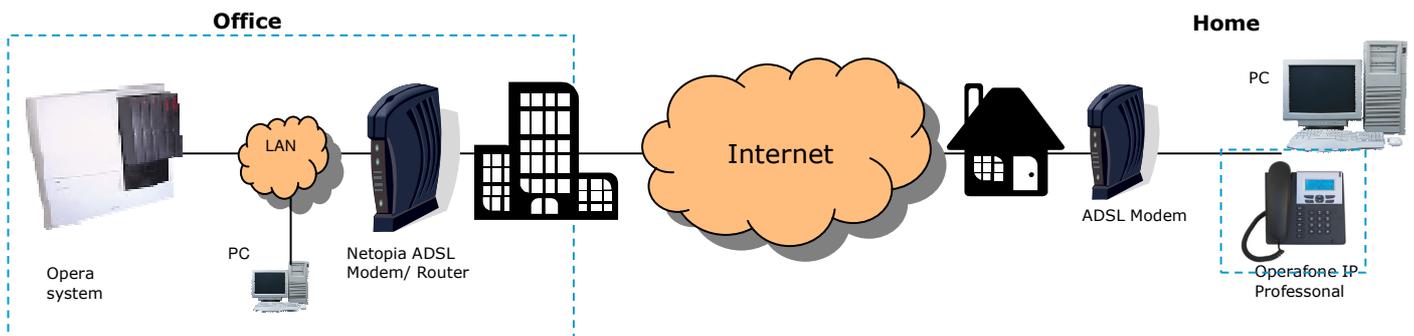
Port 50001 for UDP packets (for speech)

In the case of the Opera 20IP/4IP, UDP packets on ports 50000 to 50031 from the Gateway must be forwarded to the local IP address of the Opera system. Similarly, for TCP packets on port 5075. Packets on the gateway port 7000 should also be forwarded to port 80 on the Opera system to allow remote browser access

7.4.1 Example: How to Configure Port Forwarding on the Netopia Modem Router Cayman 3346

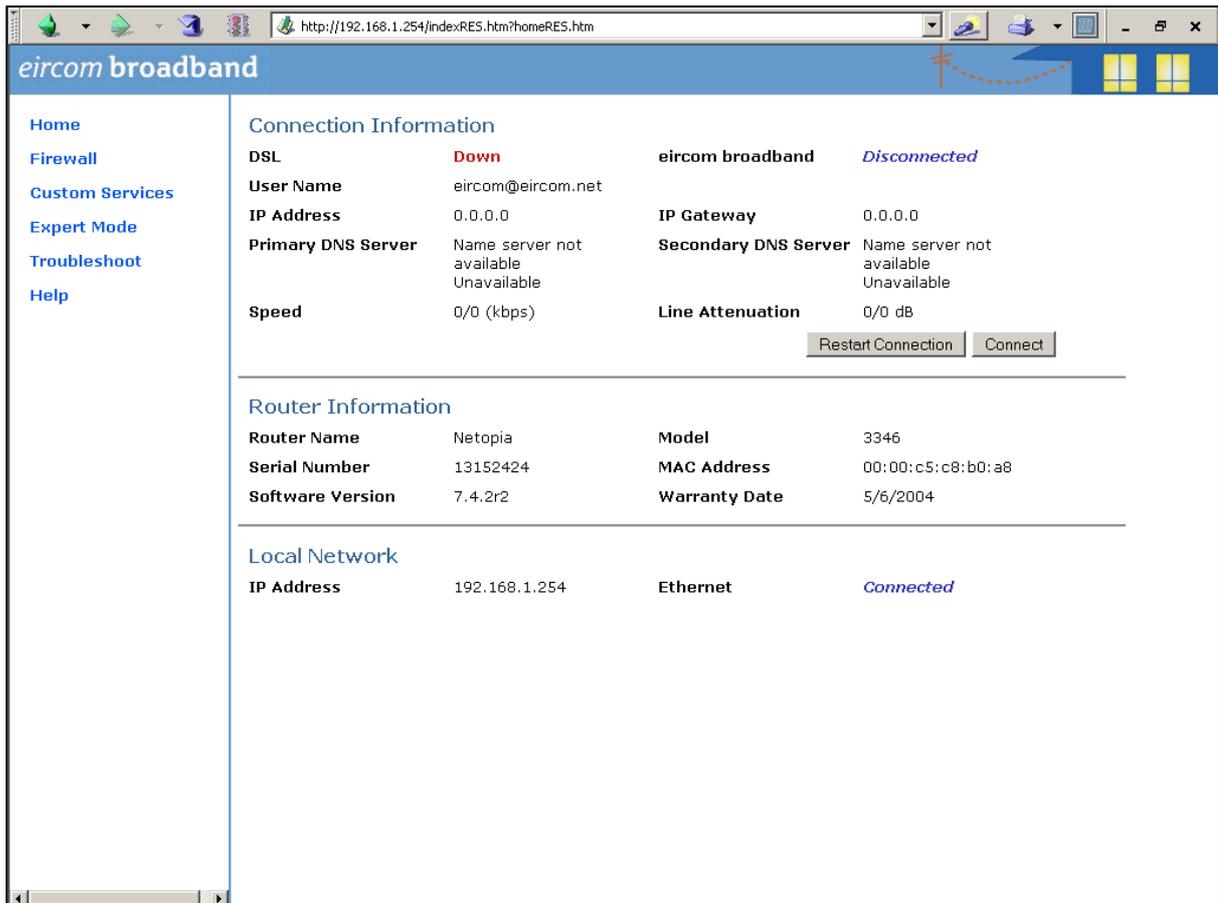
This section describes how to configure port forwarding for Voice over IP traffic on the Netopia Modem Router Cayman 3346, to the Opera Flexicom/4.12em system.

Voice traffic coming from the Internet to the Opera system in the Office location is routed through the Netopia ADSL Modem router as shown in the diagram below. This device implements a firewall to protect the internal LAN from intrusion from the Internet. The firewall must be opened up to allow voice traffic from the Internet to pass through and it must be configured to forward this voice traffic to the internal IP address of the Opera system.



Step 1 Connect to the home page.

Using a PC connected on the LAN as shown in the diagram, open a browser and type in the LAN IP address of the Netopia Modem Router. The default IP address is 192.168.1.254. This may have been changed however by the LAN administrator at installation. In this case check with the LAN administrator and enter the current address. When this is done the home page of the modem/router is displayed as shown below.



The screenshot shows a web browser window displaying the eircom broadband router's home page. The browser's address bar shows the URL `http://192.168.1.254/indexRES.htm?homeRES.htm`. The page has a blue header with the eircom broadband logo and navigation icons. A left sidebar contains links for Home, Firewall, Custom Services, Expert Mode, Troubleshoot, and Help. The main content area is divided into three sections: Connection Information, Router Information, and Local Network.

Connection Information			
DSL	Down	eircom broadband	Disconnected
User Name	eircom@eircom.net	IP Gateway	0.0.0.0
IP Address	0.0.0.0	Secondary DNS Server	Name server not available Unavailable
Primary DNS Server	Name server not available Unavailable	Line Attenuation	0/0 dB
Speed	0/0 (kbps)	<input type="button" value="Restart Connection"/> <input type="button" value="Connect"/>	

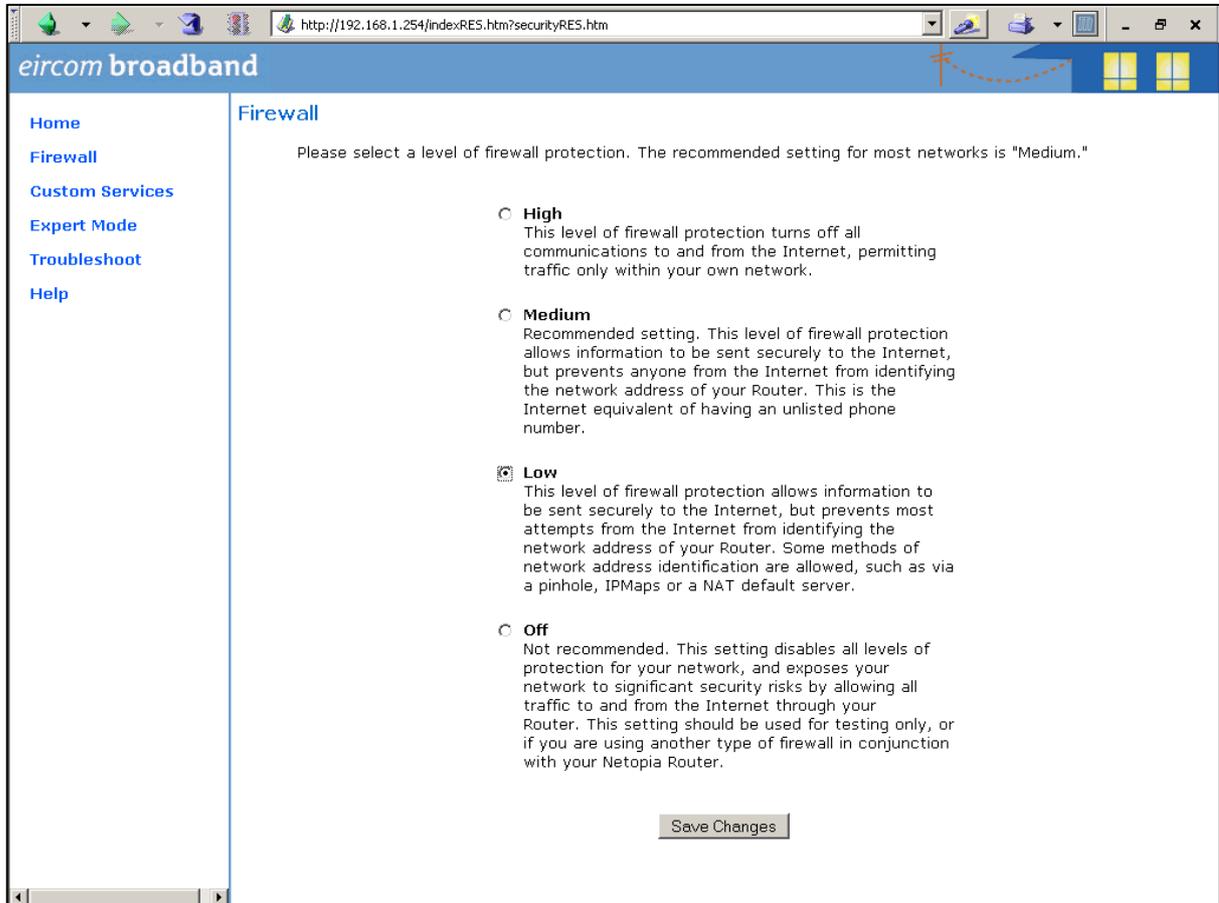
Router Information			
Router Name	Netopia	Model	3346
Serial Number	13152424	MAC Address	00:00:c5:c8:b0:a8
Software Version	7.4.2r2	Warranty Date	5/6/2004

Local Network			
IP Address	192.168.1.254	Ethernet	Connected

If you have difficulty connecting to this home page, please check that the PC you are using has an IP address which is in the same subnetwork range as the Netopia modem router.

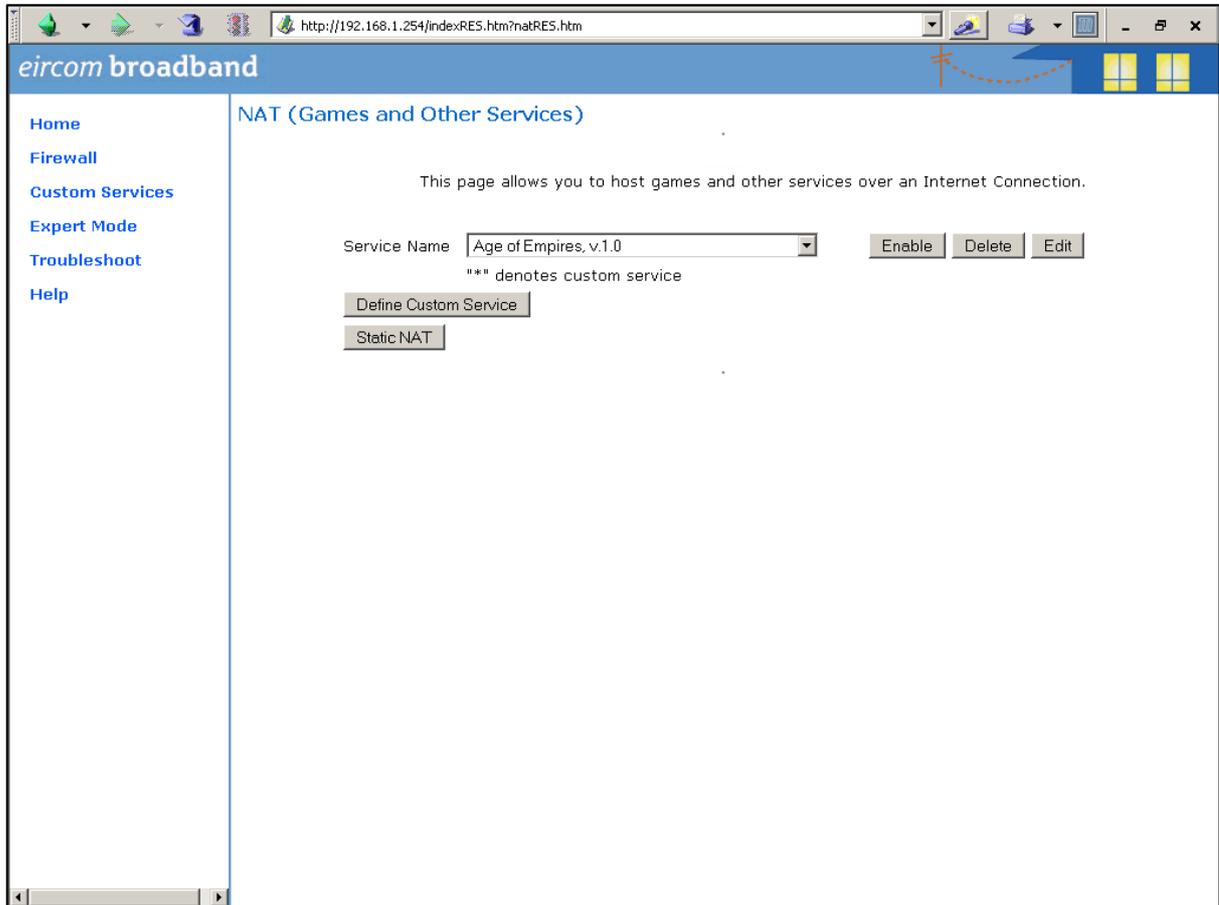
Step 2 Lower the level of Firewall protection

Click on the link Firewall in the top left corner of this page and the following screen will be displayed
Set the level of firewall protection to LOW and press the button 'Save Changes'.

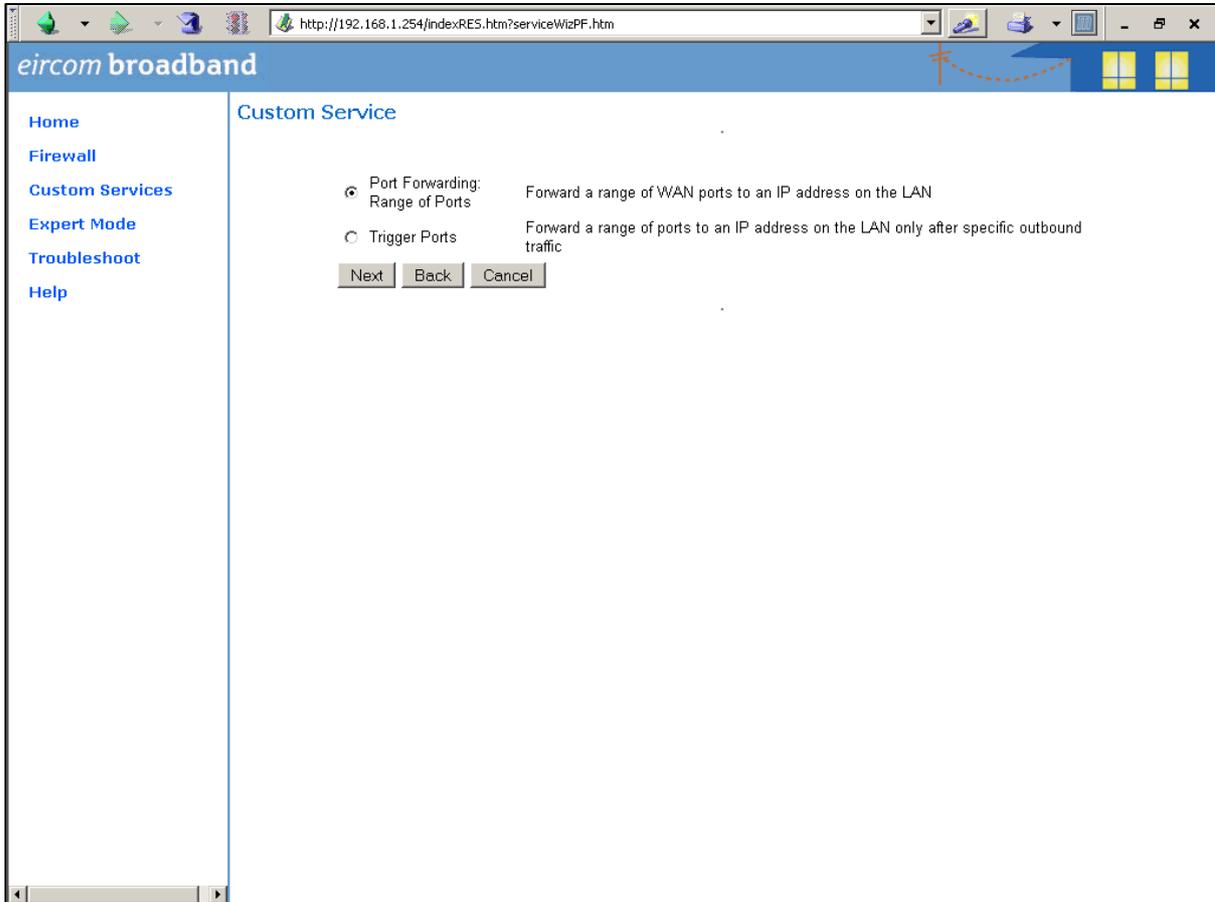


Step 3 Define the port forwarding for TCP

Click on the link 'Custom Services' on the top left corner of the screen and the following screen is displayed



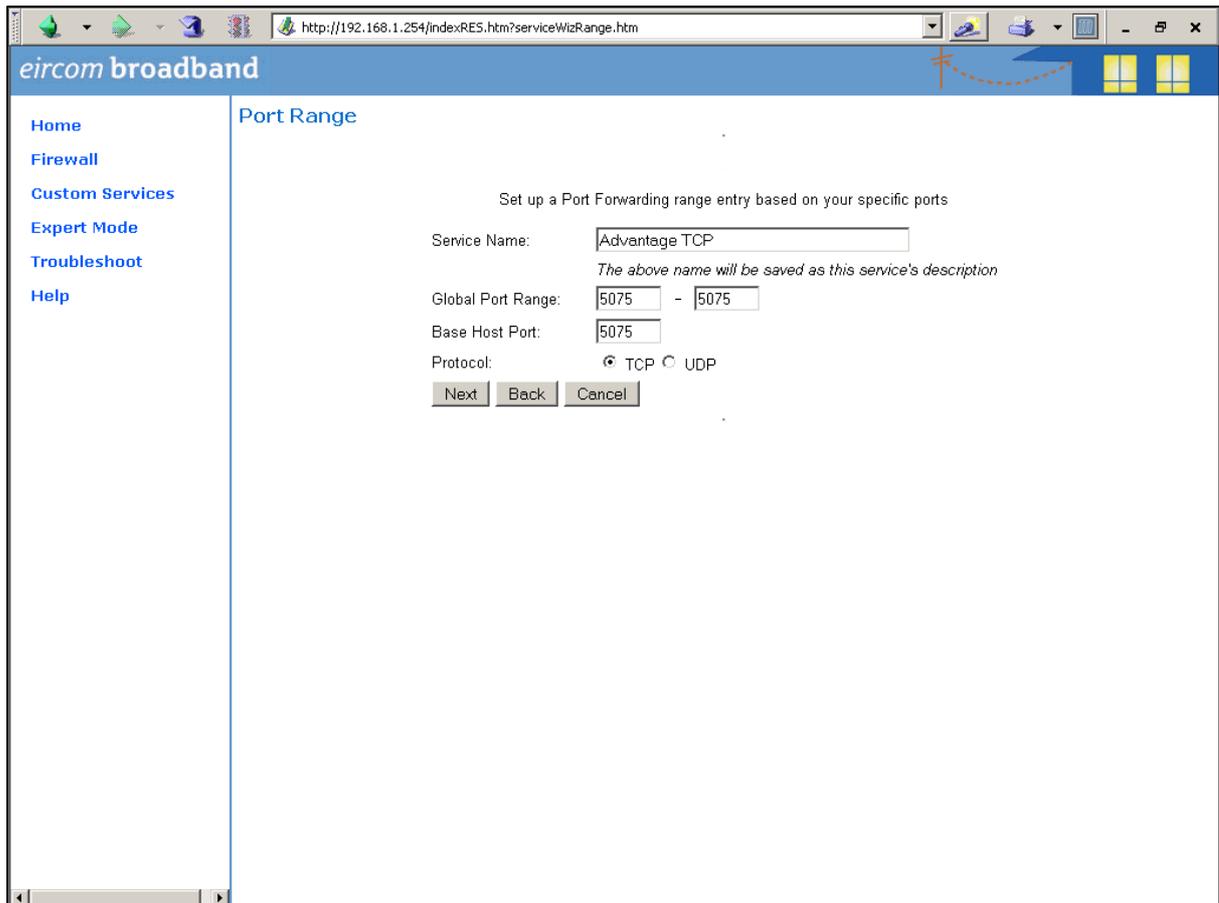
Click on the button 'Define Custom Service' to display the next screen:
Select the button 'Port Forwarding: Range of Ports' as shown and press 'Next'.



At the next screen type in the following information as shown:

Service Name: Advantage TCP
Global Port Range: 5075 - 5075
Base Host Port: 5075
Protocol: TCP

Press 'Next' and on the following screen press 'Done'.



The screenshot shows a web browser window with the URL <http://192.168.1.254/index:RES.htm?serviceWizRange.htm>. The page title is "eircom broadband" and the main heading is "Port Range". The page content includes the following text and form fields:

Set up a Port Forwarding range entry based on your specific ports

Service Name:
The above name will be saved as this service's description

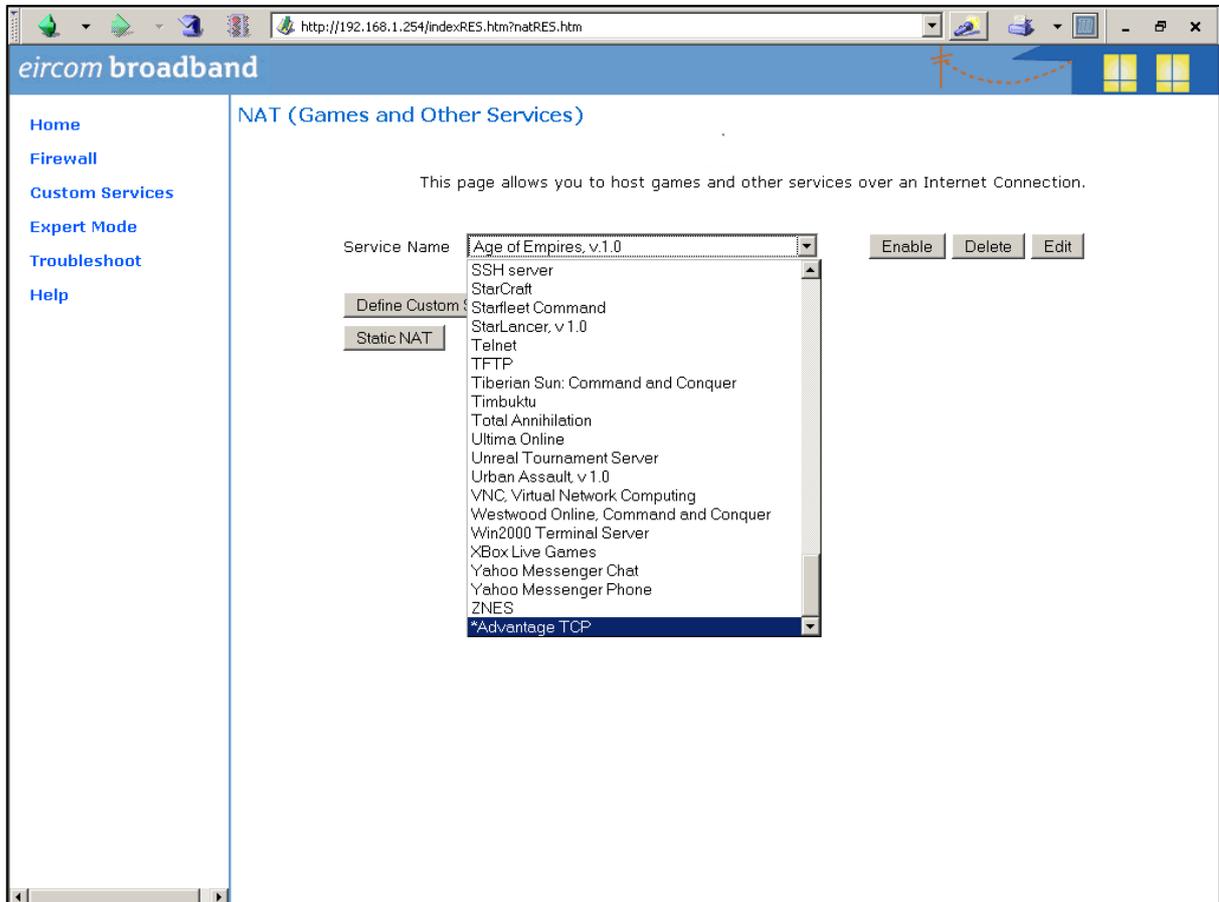
Global Port Range: -

Base Host Port:

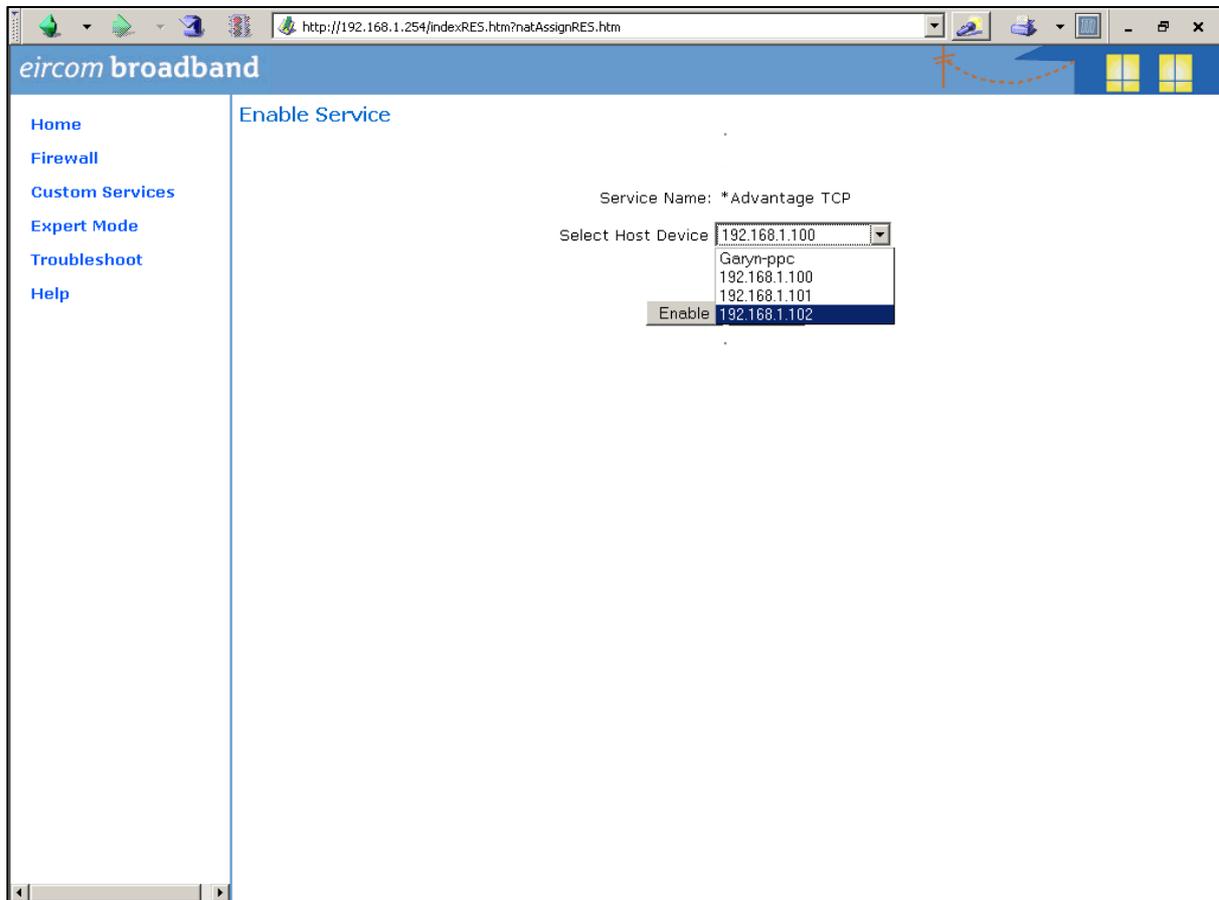
Protocol: TCP UDP

The left sidebar contains navigation links: Home, Firewall, Custom Services, Expert Mode, Troubleshoot, and Help.

On the next screen, open the dropdown list and select the service 'Advantage TCP' which you have defined and press the button 'Enable'.

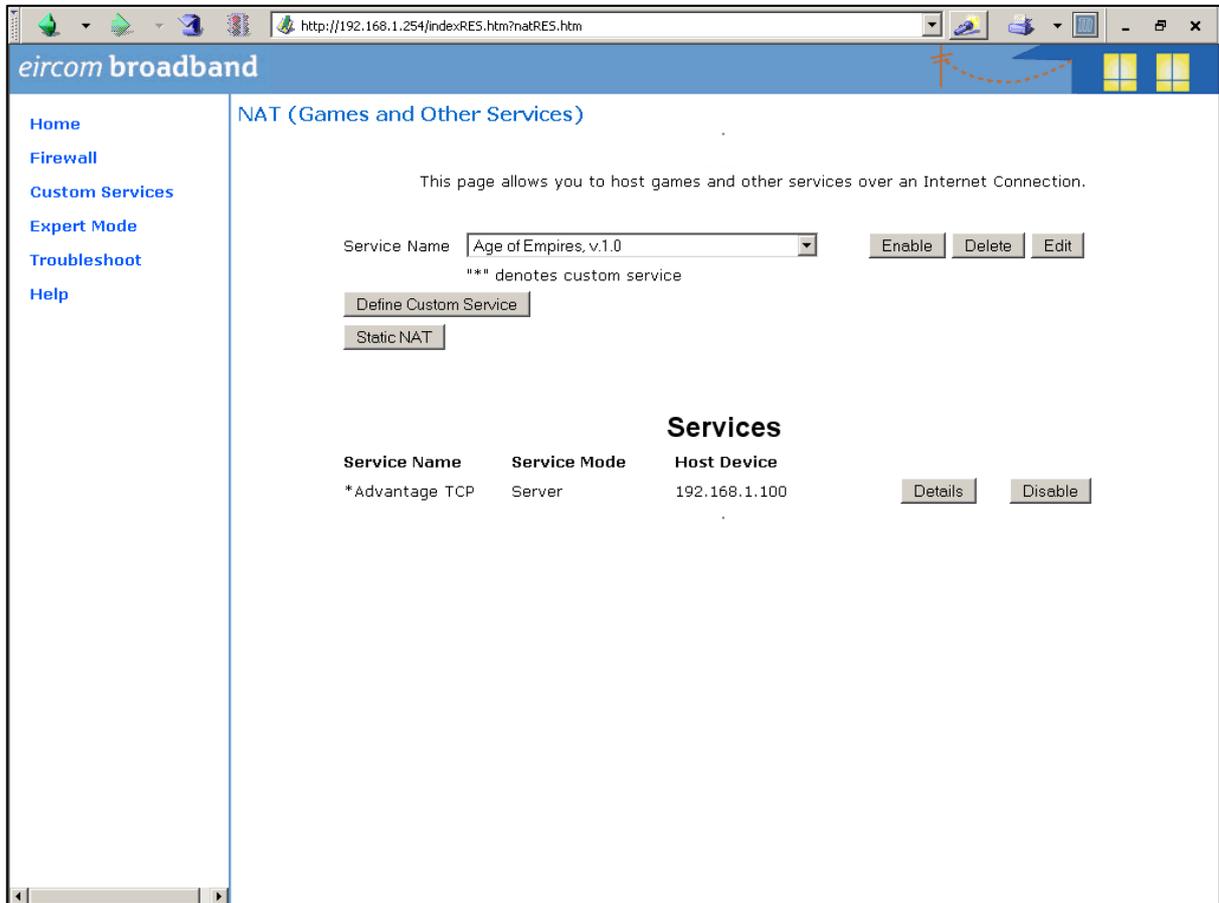


The following screen is displayed:



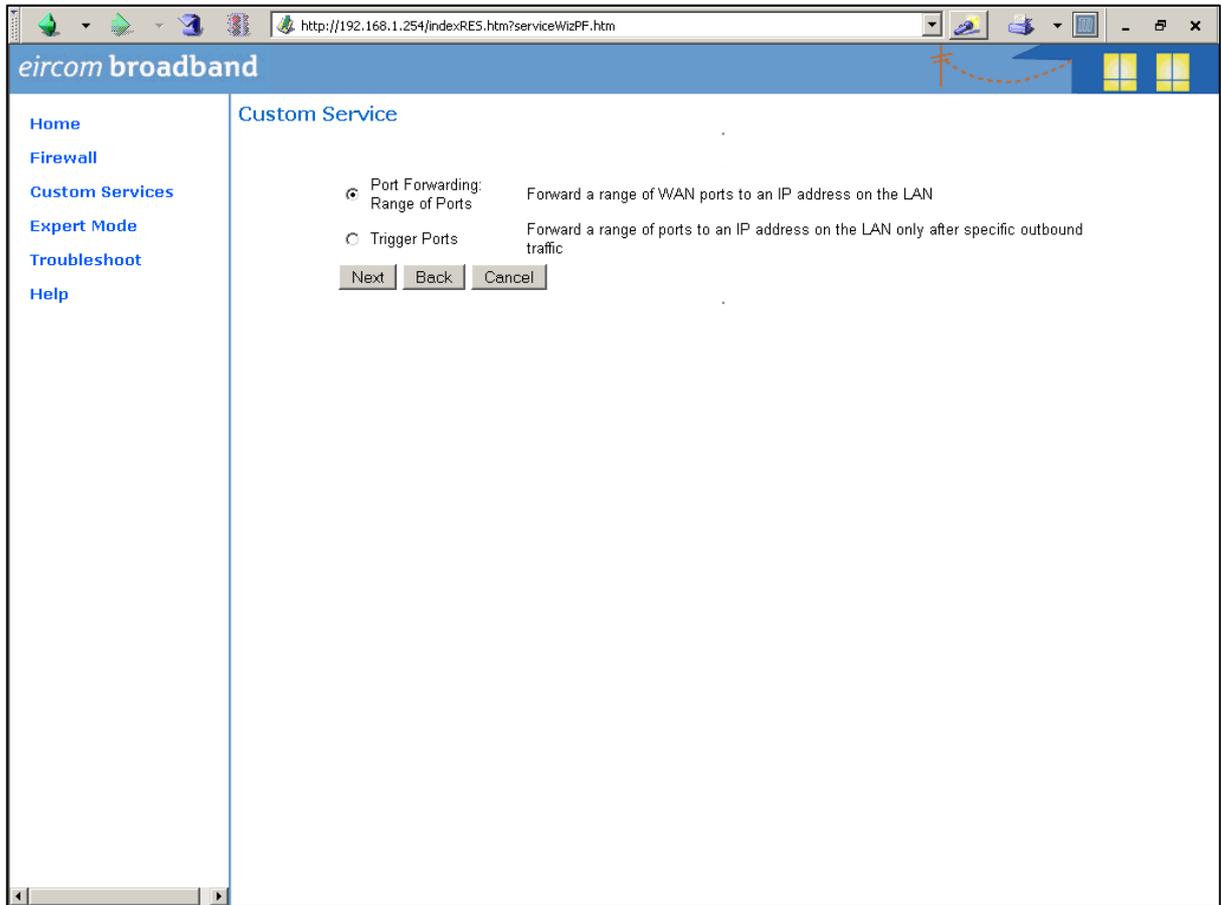
In the dropdown box 'Select Host Service' choose the local LAN IP address of the Opera system. Press 'Enable'.

All TCP traffic on port 5075 will now be forwarded to the Opera system and this is recorded as shown on the following screen.



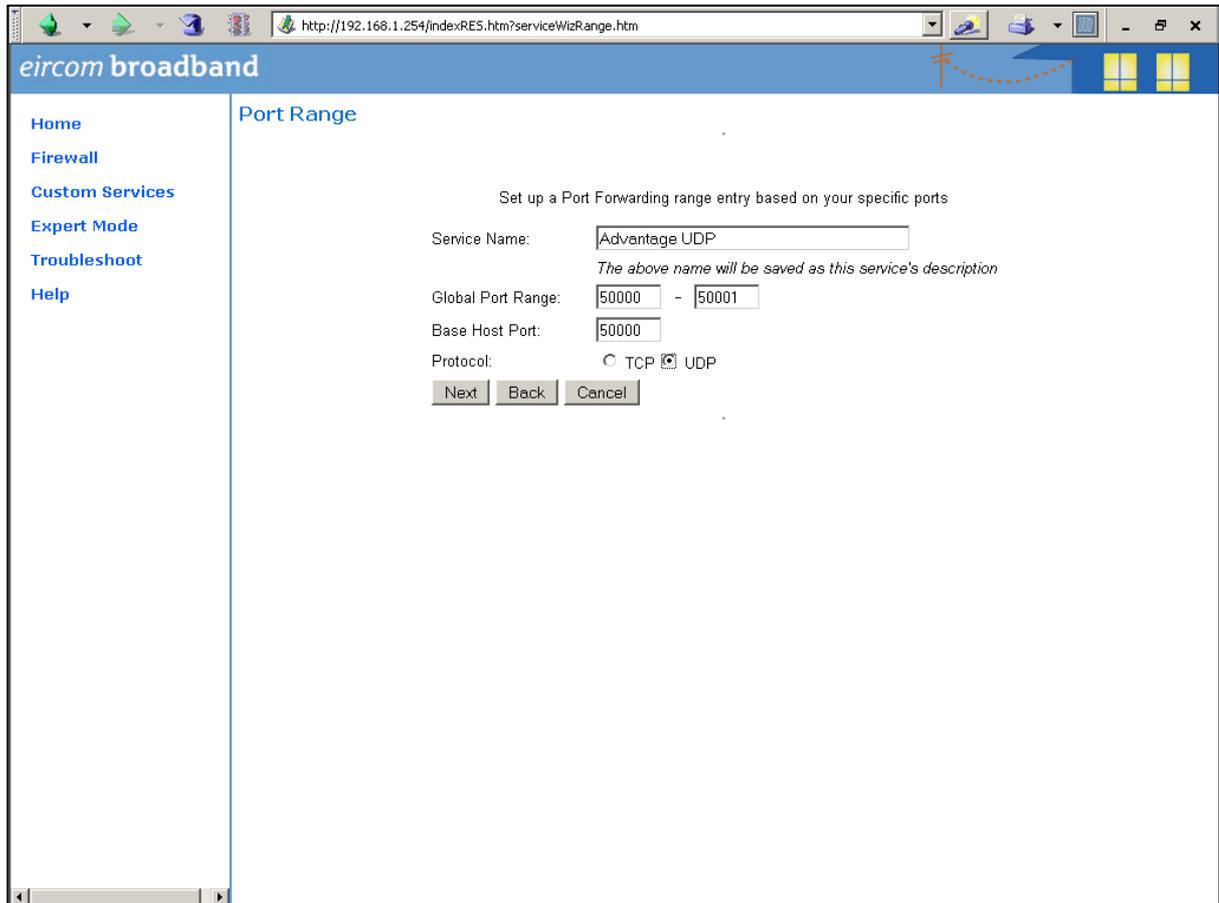
Step 4 Define port Forwarding for UDP

Press the button 'Define Custom Service' to display the following screen.
Select 'Port Forwarding: Range of Ports' and press 'Next'.



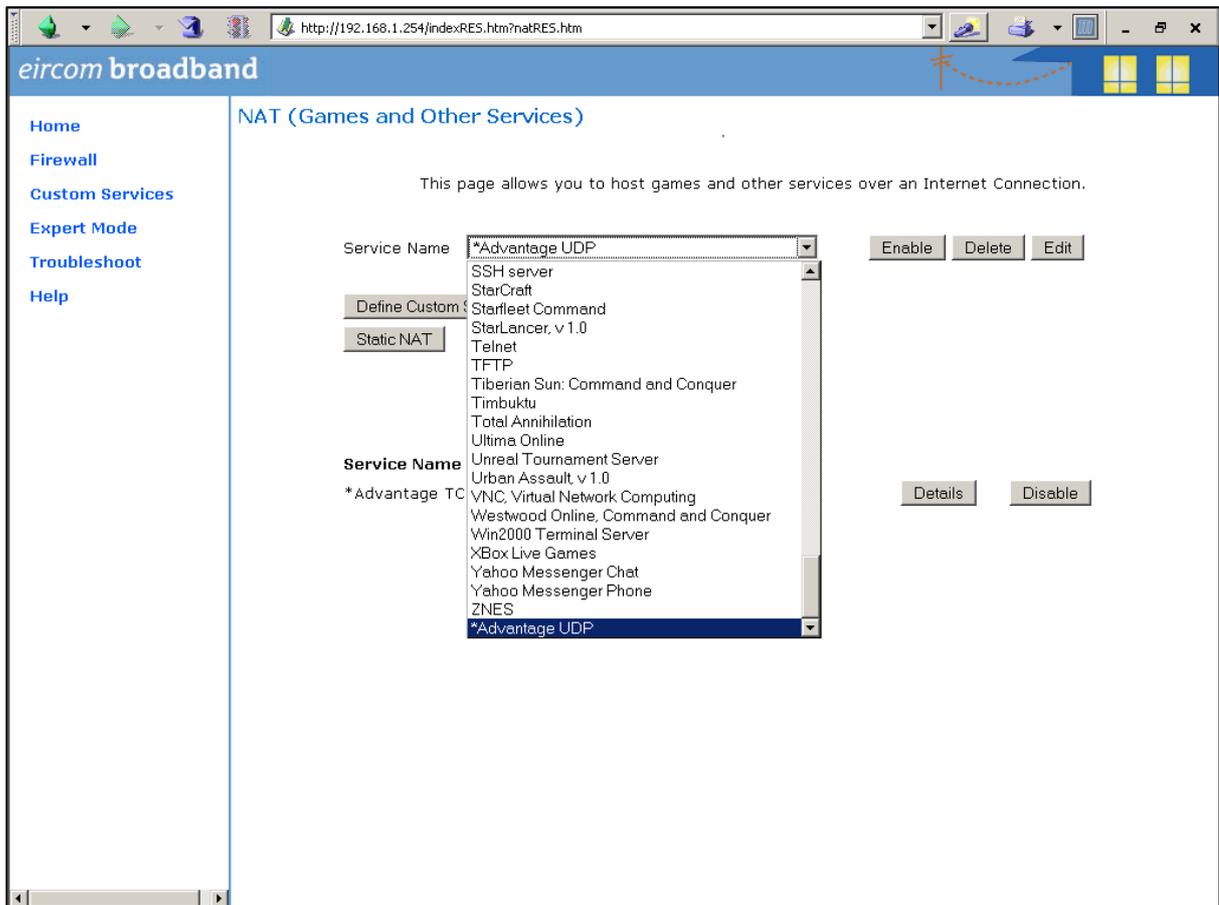
Type in the following information on the next screen as shown:

Service Name: Advantage UDP
Global Port range: 50000 – 50001
Base Host Port: 50000
Protocol: UDP

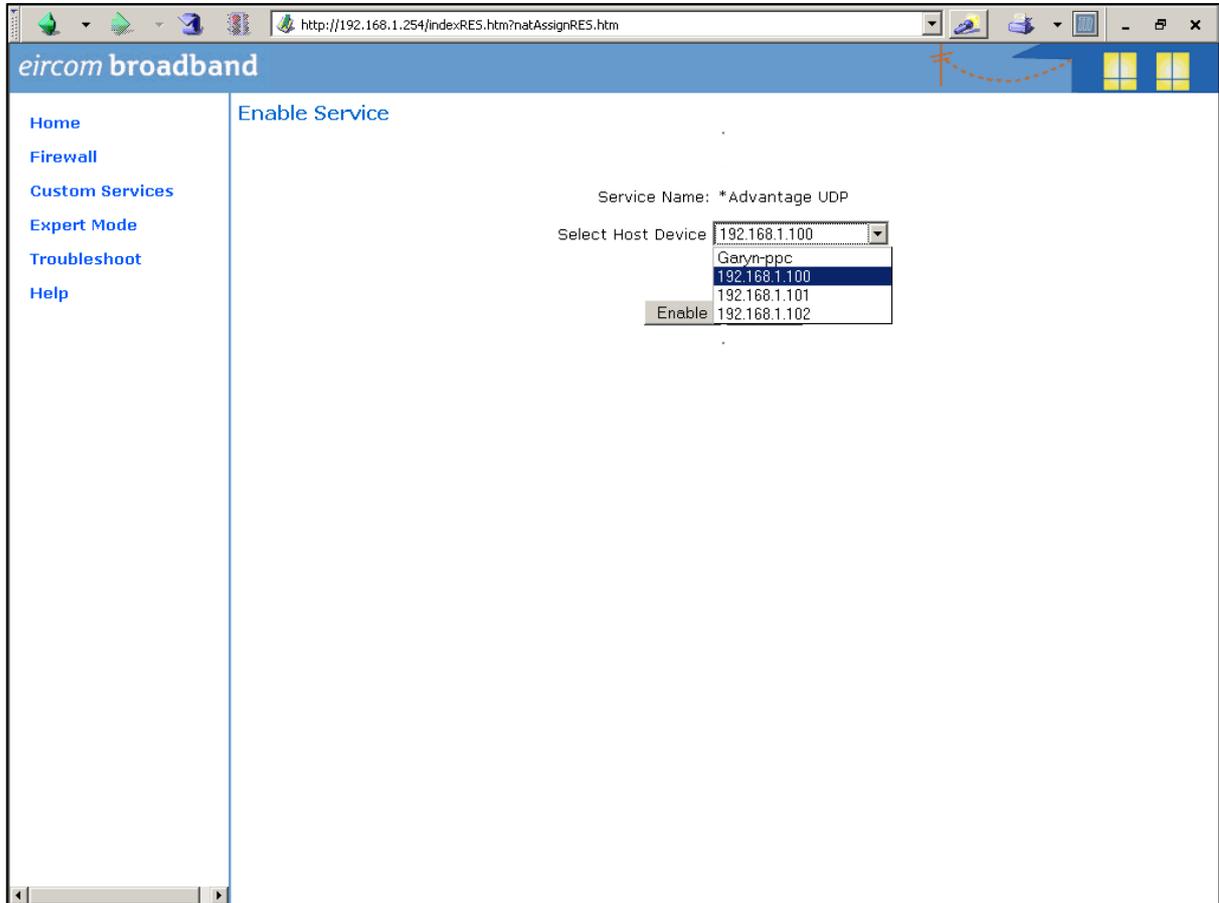


Press 'Next' and on the following screen, press 'Done'. The next screen is displayed.

Select 'Advantage UDP' from the drop down menu and press Enable.



In the following screen select the local LAN IP address of the Opera system in the box 'Select Host Device' and press 'Enable'.



All UDP traffic on ports 50000 and 50001 will now be forwarded to the Opera system and this is recorded as shown on the next screen.

The screenshot displays the NAT configuration interface for eircom broadband. The page title is "NAT (Games and Other Services)". The main content area includes a form for adding a new service, with a dropdown menu showing "Age of Empires, v.1.0" and buttons for "Enable", "Delete", and "Edit". Below the form are buttons for "Define Custom Service" and "Static NAT". A table titled "Services" lists two entries: "* Advantage TCP" and "* Advantage UDP", both in "Server" mode on host device "192.168.1.100". Each entry has "Details" and "Disable" buttons. The page is viewed in a browser window with the address bar showing "http://192.168.1.254/indexRES.htm?natRES.htm". The Windows taskbar at the bottom shows the Start button, several open applications, and the system tray with the time "16:05" and date "Wednesday".

This completes the configuration of the Port Forwarding.

8. Trouble Shooting

8.1 No information on the display

Check that the power adaptor is plugged into the IP phone and into the mains. Alternatively that the LAN actually supports Power over Ethernet

8.2 Failure to register with the Opera system

If the display shows the message "Failed to register with Server. Check Extn name & PIN", Press the Menus key and verify that the following are correct:

- 'Registration Info', select and check that the Extension Name and the Extension PIN are correct, paying particular attention to maintaining capital letters, small letters and spaces.

- Local IP Parameters

- o If the Opera system is remote (i.e.) the connection is over the public Internet
 - Check that the DHCP Client setting is set to enabled.
 - Check that the following ports in the local firewall are open:
5075 for TCP packets (allows registration and signalling)
Opera Flexicom/4.12em:
50000 for UDP packets (for speech)
50001 for UDP packets (for speech)
Opera 20IP/4IP:
50000 to 50031 for UDP packets (for speech)

o If the Opera system is on the local LAN

- Check that the Opera system and the Operafone IP phone are in the same IP address range and also connected to the same LAN.

o If there is no DHCP server active to allocate an IP address to the Operafone IP, then the DHCP client in the phone must be set to disabled and the IP address entered manually. In this case check that the IP address, which has been entered manually in the phone, is within the same address range as the local router.

- Server IP parameters

- o Check that the IP address of the Advantage server is entered correctly. You may enter a second server IP address under the menu option 'Change Alt. IP'. This allows both the local LAN IP address and the public Internet IP address of the Advantage server to be entered on the phone. This will facilitate the connection of the phone either locally on the LAN or remotely across the Internet.

8.3 Echo during speech

If there is persistent echo on the line that interferes with normal conversation and that does not go away after the first ten or fifteen seconds of a call, check with your network manager or dealer to ensure that sufficient VoIP channels are available: i.e. that an Applications card with sufficient IP channels is installed in the case of the Opera Flexicom/4.12em system, or that an expansion licence is in place in the case of an Opera 20IP/4IP with more than eight VoIP users.

8.4 Loud noises, clicking or interruption of speech

IP traffic is subject to a level of noise, depending on the configuration conditions and traffic on the network. Persistent levels of noise that interfere with normal conversation can result from absence of appropriate voice compression or failure of quality of service mechanisms. In any case, consult with your network manager or dealer to ensure that Quality of Service is activated

and that an Applications card with sufficient IP channels is installed in the case of the Opera Flexicom/4.12em system, or that an expansion licence is in place in the case of an Opera 20IP/4IP with more than eight VoIP users.

8.5 Failure to boot up

If the display is stuck in “Operafone IP, Booting....., Please Wait...” mode for longer than 2 minutes, please contact your dealer or service point for assistance.