

BIZFÖN 2000

BIZFÖN 4000

IP-PBX All-in-One SME Solutions

Manual I: Installation Guide



BIZFÖN



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FCC Statement (Part 15) Class B

The Bizfon2000 and Bizfon4000 have been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the device.
- Connect the equipment to an outlet on a different circuit from the receiver.
- Consult a dealer or an experienced Radio/TV technician for assistance.

You are cautioned that any change or modification to the equipment not expressly approved by the manufacturer could void the user's authority to operate this device.

FCC Statement (Part 15) Class A

You are cautioned that any change or modification to the equipment not expressly approved by the manufacturer could void the user's authority to operate this device.

Administrative Council for Terminal Attachments (ACTA) Customer Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US:AAEQ###TXXX, made out to HX7OT00BHx70100. If requested, this number must be provided to the telephone company.

Any plug or jack that is used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ATCA.

The Ringer Equivalence Number is an indicator of the maximum number of devices allowed for connection to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirements that the sum of the RENs of all the devices does not exceed five. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming line. The REN for this product is part of the product identifier that has the format US:AAEQ###TXXX, made out to HX7OT00BHx70100. The digits represented by ### are the REN without a decimal point (in this case 00B is a REN of 0.0B.)

If the Bizfon causes harm to the telephone network, the telephone company will notify you in advance that a temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice for you to make the necessary modifications to maintain uninterrupted service.

Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission or the corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of the Bizfon does not disable your alarm equipment. If you have any questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Electrical Safety Advisory

To reduce the risk of damaging power surges, we recommend you install an AC surge arrester in the AC outlet from which the Bizfon is powered.

Industry Canada Statement

This product meets the applicable Industry Canada technical specifications.

Safety Information

Before using the Bizfon, please review and ensure the following safety instructions are adhered to:

- To prevent fire or shock hazard, do not expose your Bizfon to rain or moisture.
- To avoid electrical shock, do not open the Bizfon. Refer servicing to qualified personnel only.
- Never install wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specified for wet locations.
- Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying cable or telephone lines.
- Avoid using your Bizfon during an electrical storm.
- Do not use your Bizfon or telephone to report a gas leak in the vicinity of the leak.
- An electrical outlet should be as close as possible to the unit and easily accessible.

Emergency Services

The Bizfon SIP Service is intended to function as a secondary telephone service. This service is made available through the Internet and therefore is dependent upon a constant source of electricity and network availability. If a power outage occurs, the Bizfon SIP Service automatically will be disabled. User understands in the event of a power or network outage, the Bizfon SIP Service will not support 911 emergency services, and further, such services only will be available via the user's regular telephone line that is not connected to the Bizfon. User further acknowledges that any interruption in the supply or delivery of electricity or network availability is beyond Bizfon's control and Bizfon shall have no responsibility for losses arising from such interruption.

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Manual II: see Administrator's Guide

Describes in detail the menus available for administrators only. Furthermore, it includes all the system's default values at a glance.

Manual III: see Extension User's Guide

Describes in detail the menus available for extension users. Furthermore, it includes all the call codes at a glance.

About This Installation Guide

This Installation Guide explains the installation of the Bizfon IP PBXs of Bizfon2000 and Bizfon4000. The Bizfon models differ both in their feature sets and the number of phone lines and extensions that are supported:

- **Bizfon2000** offers 1 phone line (FXO), 2 phone extensions (FXS) and 1 Ethernet WAN port
- **Bizfon4000** supports 4 phone lines (FXO), 4 phone extensions (FXS) and 1 Ethernet WAN port

The installation procedure for all Bizfon IP PBXs is the same. Throughout this Installation Guide, the standard edition of the Bizfon4000 with four FXO ports is shown as the reference system.

This Installation Guide gives step-by-step instructions to provision the Bizfon and configure the phone extensions with the Bizfon SIP Server. After successfully configuring the Bizfon, a user will be able to make SIP phone calls to remote Bizfon devices, make local calls to the PSTN and access the Internet from devices connected to the LAN.

This Installation Guide neither describes the PBX, Auto Attendant, Call Relay, and Voice Mail features of the Bizfon nor does it provide advanced firewall and VPN configuration information. For these features, refer to the Administrator's and Extension User's Guides.

[Step 1: Installing the Bizfon](#) explains the connection of cables and devices to the Bizfon.

Step 2: Configuring the Bizfon describes the configuration steps necessary to integrate the Bizfon into your network environment.

[Step 2-A: Using IP Lines](#) explains how to configure IP lines on the Bizfon IP PBX and to connect IP phones to become functional in the Bizfon's LAN.

[Step 2-B: Using Receptionist](#) refers to the document describing Receptionist's configuration on the Bizfon.

[Step 3: Making/Receiving Calls](#) explains how to enable the Bizfon's various telephony features.

[Appendix: PC DHCP Settings](#) explains how to configure your PC to access the Bizfon Configuration GUI.

[Appendix: Changing the Admin Password](#) explains how to change the default administrator password.

[Appendix: Configuring NAT Traversal](#) explains configuration of the Bizfon if it is placed behind a NAT enabled router.

[Appendix: Checking the Connections](#) gives hints on solving common problems.

Requirements

- One 120/240 VAC power outlet in close proximity to the Bizfon.
- One RJ45 Ethernet 10/100 broadband Internet connection.
- At least one RJ11 telephone connection is recommended to connect the Bizfon to the PSTN network (all Bizfon IP PBXs with FXO ports).
- At least one off-the-shelf analog phone with an RJ11 telephone cable.
- One CAT 5 Ethernet cable with an RJ45 connector to connect to the Bizfon LAN port.
- One PC with a 10/100 Mbps Ethernet card or adapter installed.
- TCP/IP network protocol installed on each PC.
- For optimal results, Internet Explorer 5.5 or higher, or Netscape Navigator 4.7 or higher are recommended.

Please Note: All Bizfon IP PBXs are shipped with one RJ11 cable and one straight RJ45 CAT 5 cable. If the LAN connector of the Bizfon connects to a hub or switch, a crossover cable may be required.

Other cables are added according to the different connectivity requirements of the Bizfon IP PBX types.

Hardware Overview

The Rear Panels of Bizfon2000 and Bizfon4000

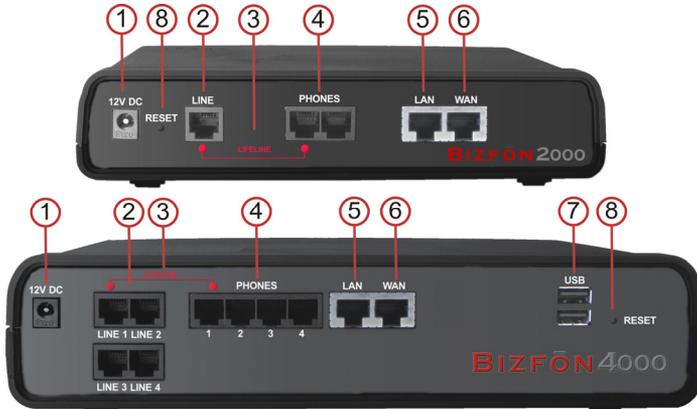


Fig. I-1: Bizfon's Rear Panels (1)

- 1 Power supply socket. **Use only the power adapter delivered with the Bizfon.**
- 2 LINE sockets to connect the Bizfon to the PSTN network using standard analog phone service. These are FXO (Foreign Exchange Office) analog ports.
- 3 In the event of a power failure, PHONE 1 is connected to LINE 1, allowing the phone to send/receive phone calls directly to the PSTN network. PHONE 1 is powered by the PSTN.

Please Note: Only LINE 1 is connected to PHONE 1 during a power failure. The other LINE and PHONE ports are not connected together.

- 4 PHONE sockets with RJ11 connectors enable connectivity of regular analog telephones. These are FXS (Foreign Exchange Station) analog ports. As a factory default, the phones connected to PHONE sockets 1-3 (1-2 for Bizfon2000) are configured as voice extensions. PHONE socket 4 is preconfigured for a fax machine.
- 5 RJ45 socket to attach to the Local Area Network (LAN) via an Ethernet CAT 5 cable. If a PC is connected directly to this socket, a straight cable is used. If an Ethernet hub, router or switch is used; a crossover cable may be required.
- 6 RJ45 socket to attach the Internet Uplink (WAN) via an Ethernet CAT 5 cable.
- 7 The USB socket enables connectivity of USB flash memory providing expansion for additional voice mails and record data. Refer to the Administrator's Guide for supported devices.
- 8 The Reset button may be used in two ways: (1) to initiate a normal reset or (2) to carry out a factory reset. A normal reset is executed by pressing the Reset button with a paper clip for an instant.

Pressing the reset button and holding it down for seven seconds or more will execute a factory reset. This will restore the factory defaults and clear all settings including the IP address and the administration password you entered.

Please Note: A Factory Reset forces the default LAN IP address of 172.30.0.1 and default admin password of 19.

Bizfon’s Front Panel LEDs



Fig. I-2: Bizfon's Front Panel LEDs

1	Busy green Status of CPU	off: no power on or blinking: normal activity
2	Info yellow System information	on: device is booting off: no information blinking: an event occurred; details specified in the System Event section of the Management interface
3	Fault red System status	on either an error or the device is booting off: no error blinking: system unusable
4	USB green Status of the USB interface	on: USB memory device installed correctly off: no USB memory device found (Bizfon2000: not used)
	PWR (Bizfon2000 only) green Status of the power supply	on: power supply ok off: no power supply or device is still booting (Bizfon2000 only)
5	LAN green Status of the LAN interface	on: link ok off: no link flickering: traffic on the link
6	WAN green Status of the WAN interface	on: link ok off: no link flickering: traffic on the link
7	Line1 green Status of the: FXO LINE (Bizfon2000) FXO LINE 1 (Bizfon4000)	on: line in use off: line not in use
8	Line2 green Status of the: FXO LINE 2 (Bizfon4000) (Bizfon2000: not used)	on: line in use off: line not in use

LED indication during a firmware update

A firmware update is indicated by the red (**Fault**) and yellow (**Info**) LEDs. Both will blink simultaneously for about two minutes while the firmware is being updated. The Bizfon will then reboot automatically showing the boot LED sequence.

LED indication during a boot sequence

A boot sequence is indicated as follows: The red **Fault** LED will glow for a few seconds, then the yellow **Info** LED will glow for another four or five minutes while the green **Busy** LED is blinking. Once the **Info** LED is off, the boot sequence has been completed successfully.

LED indication during emergency firmware upload

The red **Fault** LED and the yellow **Busy** LEDs will stop blinking alternately and start blinking in parallel. This shows that Bizfon has accepted the emergency firmware and is loading it. After a few seconds, Bizfon will boot, indicated as follows: The red **Fault** LED will glow for a few seconds, then the yellow **Info** LED will glow for another few seconds while the green **Busy** LED is jittering. When the yellow **Info** LED extinguishes, the boot sequence has been completed successfully.

Step 1: Installing the Bizfon

Networking Overview

To establish a connection between the Internet and your local area network (LAN), an access router is needed. The Bizfon IP PBX serves, among other functions, as an access router, and will perform the task of connecting your LAN, or a group of one or more PCs, to the wide area network (WAN) or the Internet. The Bizfon will process and regulate the data traffic between these two networks. All Bizfon IP PBXs have one LAN port that can connect to Ethernet hubs and switches on the LAN, allowing additional devices to be connected to the network.

The Bizfon is a device with two sides: one side connects to your LAN, and the other side connects to the Internet, or the WAN. Bizfon's firewall and Network Address Translation (NAT) functionality protects your LAN from being seen from the Internet side making the LAN private and secure.

The Ethernet WAN port transmits up to 10 Mbps, and the LAN port transmits at 10 Mbps or 100 Mbps. The ADSL and G.SHDSL WAN port will adjust to the transmission rates that are available.

Every device within an IP network requires a unique IP address to identify itself. Since the Bizfon connects to both the LAN and the WAN, it has to be part of both networks, and must have two IP addresses: one for the WAN side and one for the LAN side. The Bizfon's integrated firewall/NAT functionality will hide the LAN IP address from the WAN (Internet) side.

There are two ways of assigning an IP address: statically or dynamically.

A Static IP address is a fixed, manually assigned IP address that remains valid until changed. If you plan to use the Bizfon as your Internet access router, contact your Internet Service Provider (ISP) to find out if a static IP address is assigned to your account. If so, you will need this static IP address when configuring the Bizfon device.

A dynamic IP address is a temporary address that is automatically assigned by your ISP and will change periodically. If your ISP offers a dynamic IP address, the Bizfon will act as a DHCP client and will receive a new IP address from the ISP's DHCP server or PPPoE feature.

Please Note: A DHCP client is a piece of software that requests an IP address from a DHCP server. A DHCP server assigns on request a unique IP address to a device. The Bizfon, like many routers, acts as a DHCP client on its WAN interface and as a DHCP server on its LAN interface.

The Bizfon must be visible to the Internet to be able to receive and send VoIP calls. When the Bizfon is placed in a private network, typically behind existing routers, it will by default attempt to pass through the NAT of this router with its STUN (Simple Traversal of UDP over NAT) feature. STUN will work without user configuration with the majority of basic routers. In some scenarios, port forwarding on the router is required to make the Bizfon accessible to other Bizfon devices and the Bizfon SIP Server on the Internet. Another configuration option is to use the Bizfon as the Internet access router, connected directly to the WAN, eliminating the traverse to the local NAT firewall.

LAN/WAN Connection Options

- A Bizfon IP PBX with an Ethernet WAN port behind a router, which is connected to a cable or xDSL modem.

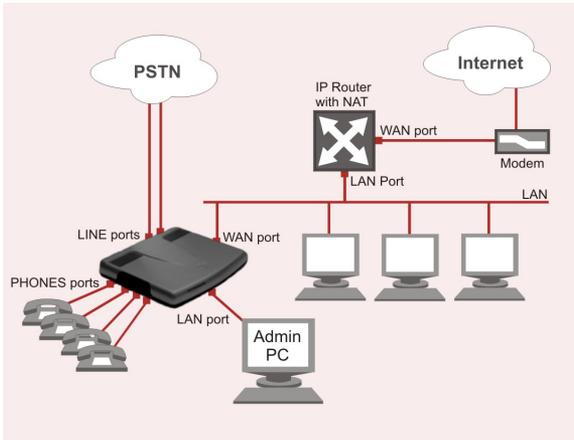


Fig. I-3: Configuration: Bizfon behind a router

In this configuration (Fig.I-5), the IP router typically acts as a DHCP server for the LAN and assigns the IP addresses to the PCs and other devices. The Bizfon can be connected through its WAN port directly to one of the router's LAN ports and will get an IP address from the router. By default, the Bizfon acts as a DHCP client on the WAN port.

Please Note: Since Bizfon uses STUN by default, it will work with most basic routers without any further configuration.

Please Note: Initially, the Admin PC must be connected to the Bizfon LAN port to access Web Management of the Bizfon. Later, this PC can be moved to the router's LAN. The Bizfon Web Management can be accessed from any PC in the router's LAN as soon as the firewall is disabled on the Bizfon.

- A Bizfon IP PBX used as an Internet Access Router, connected directly to the Internet

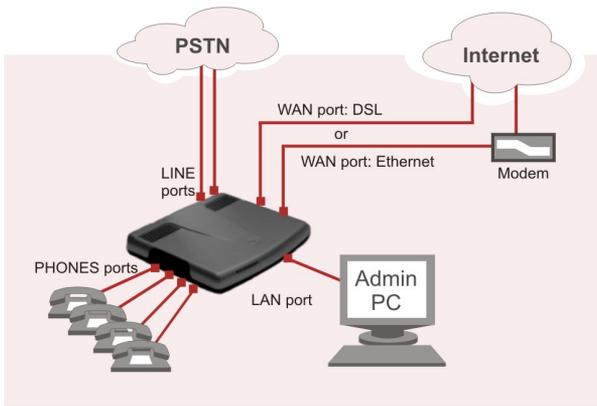


Fig. I-4: Configuration: Bizfon used as Internet Access Router

Please Note: The Admin PC is connected to the Bizfon LAN port to access the Web Management of the Bizfon. After the initial configuration has been completed, this PC can then be moved to the LAN and connect to the Bizfon over a switch (see Fig.I-7). You also may reach the Bizfon for its first configuration from an Admin PC within the LAN, but this may cause collisions in case of non-fitting IP addresses and competing DHCP servers.

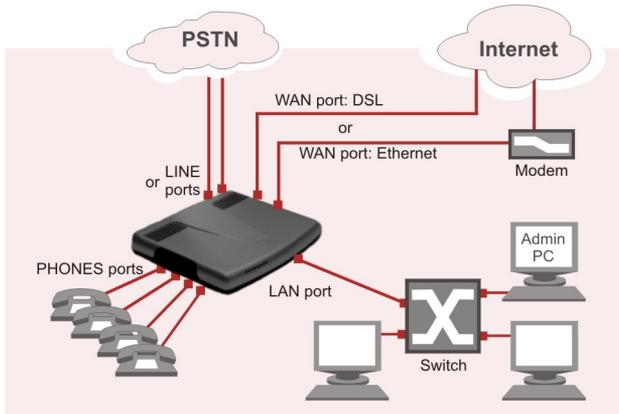


Fig. I-5: Configuration: Bizfon used as Internet Access Router with a switch connected to the LAN port

If the user already operates a router connected to the cable or DSL modem and has devices behind the router, the router is disconnected from the modem and the Bizfon is inserted between the modem and the router (see Fig.I-8). The Bizfon serves as an Internet access router and DHCP server. The Bizfon will be configured to connect directly to the Internet through a cable or DSL modem. The router then is connected to the Bizfon LAN port.

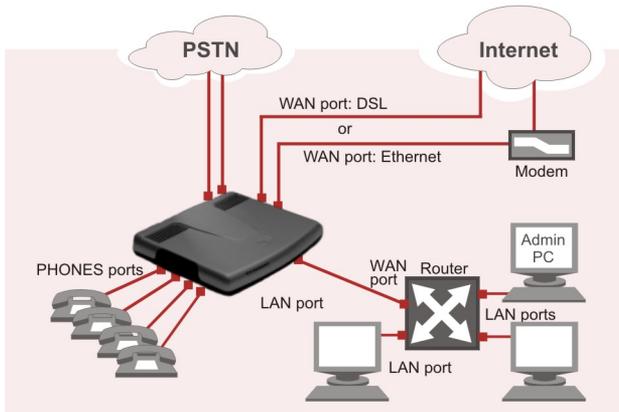


Fig. I-6: Configuration: Bizfon used as Internet Access Router with a router connected to the LAN port

Please Note: If there are services configured behind the existing router such as Web or gaming servers, these services also must be configured through the Bizfon firewall for proper operation. Refer to the Administrator's Guide for more information.

Connecting the Hardware

- **Bizfon4000 behind a router**
Bizfon2000 is connected accordingly.

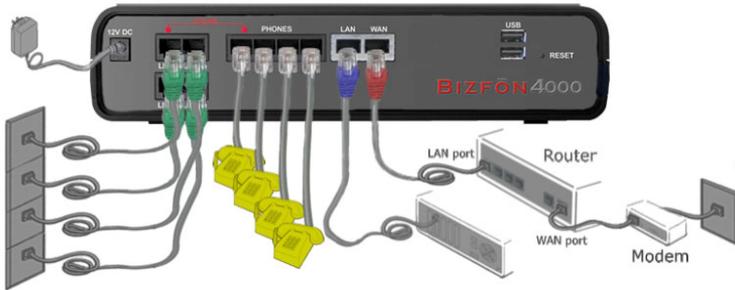


Fig. I-7: Installation: Bizfon4000 behind a router

- **Bizfon4000 used as Internet access router**
Bizfon2000 are connected accordingly.

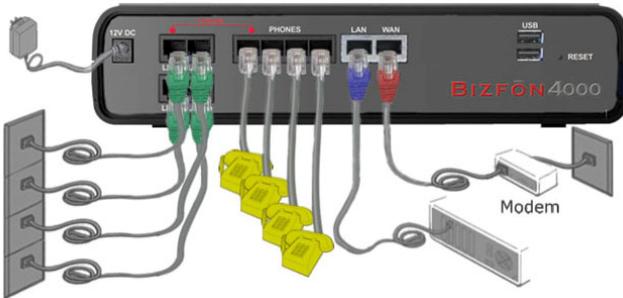


Fig. I-8: Installation: Bizfon4000 used as an Internet Access Router

- Verify the product package contents are complete. Refer to the contents sheet included in the packaging to determine if all the items were shipped in the box.
- Before you connect the hardware, make sure that all devices are powered off.
- Connect telephones to the PHONE ports on the Bizfon's rear panel. You may connect as many phones as there PHONE sockets available. PHONE socket 1 must be connected to a telephone to enable lifeline support functionality.
Please Note: PHONES 1-3 (1-2 in case of Bizfon2000) will ring simultaneously, if a PSTN call comes in. PHONE 4 is preconfigured for a fax machine.
- Connect at least one of Bizfon's LINE (FXO) ports to the telephone service from the PSTN. The Bizfon2000 offers connectivity of one line, Bizfon4000 offers two lines.
Please Note: If your Internet connection is a DSL modem, you may need to use a micro filter between the FXO LINE port and the phone line. Micro filters are typically provided by your ISP but are also available at most computer stores. If a micro filter is al-

ready installed, simply connect the RJ11 from the existing phone to the Bizfon FXO port leaving the micro filter connection as is.

- Connect the Ethernet port on your PC via a straight CAT 5 cable with an RJ45 connector to the LAN socket of the Bizfon. If a hub or switch is connected between the Bizfon and your PC, use a crossover cable from the LAN interface of the Bizfon to the hub/switch.
- Connect the WAN port of the Bizfon to the Internet service via a cable or DSL modem.
- Power up the DSL or Cable modem first.
- Connect the power adapter to the POWER port on the Bizfon's rear panel and plug the power adapter into a power outlet. Only use the original Bizfon power adapter and plug it into a power strip with surge protection or to a UPS if available.
The red LED (Fault) will glow for several seconds followed by the yellow LED (Info), which will glow for several minutes. When Info LED is off, the Bizfon is operational.
- Power up any hub or switch followed by any PC and other devices on the LAN side.
Please Note: The PC must be configured for DHCP to receive an IP address directly from the Bizfon. Refer to [Appendix: PC DHCP Settings](#) for instructions on setting up a PC for DHCP operation.
- Check the LEDs: The green Busy LED must glow continuously. The green LAN and WAN LEDs will blink when cables are connected to these ports and all devices are powered up. If the green LAN and WAN LEDs do not blink, verify cabling and ensure that all devices are powered up.
Please Note: CAT 5 cables can be faulty without any visual indication. The LAN and WAN LEDs verify that the Ethernet connection is established between the end points. If these LEDs are not illuminated, there is a connection problem between the Bizfon and the other device. Some modems, hubs, switches and routers will require the use of crossover cables.

Step 2: Configuring the Bizfon

Bizfon IP PBXs with Ethernet WAN up-link do not require further configuration in two cases:

- **The Bizfon is connected behind a basic router that has no conflicts with the STUN protocol.**
- **The Bizfon is used as the Internet access router and your ISP supports DHCP.** There are no other router devices between the Bizfon and the DSL or cable modem and you get the IP address assigned automatically by the ISP.

Simply power up the modem. Once the modem is up and running (after a few minutes) power up the Bizfon.

Verify functionality of both IP and PSTN calls:

- **PSTN telephony:** Make an outbound PSTN call and arrange to receive an incoming call. The incoming PSTN calls will be routed to the Auto Attendant by default, and the caller has to enter a valid extension number, e.g., 11, followed by the # sign to reach a phone connected to the first PHONE port of the Bizfon.
- **IP telephony:** Dial **888#** and you will hear a voice message that confirms you have successfully established an IP call. If this call is not successful, go to [Appendix: Checking the Connections](#) for troubleshooting.

You may customize the following settings by connecting the PC to Bizfon's LAN port and logging in to the Bizfon's Web Management:

- **Bandwidth** - to regulate the number of calls allowed by the Bizfon to avoid degradation in low bandwidth conditions.
- **Time/Date** - to ensure the correct time and time zone are used for call records.
- **Regional Settings** - if your Bizfon is located outside the United States, it is important to properly configure your line connections to the PSTN in your location.
- **Firewall** - if your Bizfon is connected behind a router with its own firewall service running, disable the firewall to make Bizfon accessible for management purposes.

Step 2.1: Logging in to Bizfon

- Start a browser (MS Internet Explorer, Netscape, Opera) on a PC connected to the LAN port.
- Enter **http://172.30.0.1** (Bizfon's default LAN IP address) into the address field.
- The **Login** page of the Bizfon will be displayed (see Fig.I-13).

BIZFON™

Bizfon4000 Management
Login

Login as an Administrator or Extension

Username / Extension:

Password:

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Fig. I-9: Login page

Enter **admin** as the Username and **19** as the password to log in as the administrator. Once you log in, you will enter into the Bizfon Management Menu.

Please Note: If you consecutively enter a wrong password and/or username for five times the device will be unavailable for login for five minutes.

After log in, the **Bizfon Management** page will be displayed.

Main System Users Telephony Internet Upload LAN Services

BIZFON™
Refresh in 560 seconds

Bizfon4000 Management

Active Calls

Call Start Time	Call Duration	Calling Phone	Called Phone
No items in list.			

Run Loader: 0.0.38/Release
 Firmware Version: 0.1.13/Release
 User currently logged in:
 - admin from 255.255.0.101, supplier 02/28
 Internet connection status: static IP
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Fig. I-10: Bizfon Management page

Please Note: The illustrations above and the following screenshots show the screens of a Bizfon4000. The management screens of the other Bizfon IP PBXs differ only slightly, therefore the Bizfon4000 management screens will be used as reference through this document.

Step 2.2: System Configuration Wizard

Select the **System Configuration Wizard** from the **System** menu. The **System Configuration Wizard** is a tool for the administrator to define the Bizfon's Local Area Network settings and to specify regional configuration settings to make Bizfon operational in its LAN. **The System Configuration Wizard must be run upon Bizfon first startup.**

For the basic configuration, some pages in this wizard may be skipped and left default for the basic configuration.

Please Note: It is strongly recommended that factory default settings are left unchanged if their meanings are not completely understandable to the party administering the Bizfon.

System Configuration

The first page of System Configuration Wizard shows all items to be configured. Click the **Next** button to start. Enter into the **Host Name** field the unique name (top right corner, under Bizfon logo) for the Bizfon device.

For a basic configuration, the **LAN IP address** does not need to be changed, but if you must change it (for example, to integrate the device into an existing LAN), record the new LAN IP address and have it handy. You'll need it for subsequent access to Bizfon's management.

Please Note: The **Host Name** is very useful when many Bizfon's are part of a network and one administrator has remote access to all of them. All Bizfon pages show the hostname on the top right corner under Bizfon logo.

Fig. I-11: System Configuration page

Clicking **Next** shows the page **DHCP Settings for the LAN Interface**.

DHCP Settings for the LAN Interface

If the DHCP server is enabled, the Bizfon will automatically assign dynamic IP addresses to the stations connected to its LAN port.

If you didn't change the default LAN IP address of the Bizfon, you also may leave the default values for the **IP Address Range**. Make sure your connected LAN devices belong to the same network as the LAN port of your Bizfon.

Please Note: Make sure there is only one DHCP server on the LAN, otherwise, unpredictable network behavior can occur.

The screenshot shows the 'System Configuration Wizard' window with the 'LAN Services' tab selected. The 'DHCP Settings for the LAN Interface' section is active. It includes a checkbox for 'Enable DHCP Server' which is checked. Below it, the 'IP Address Range' is set from '172.30.0.100' to '172.30.0.254', and the 'WINS Server' is set to '0.0.0.0'. At the bottom of the wizard, there are buttons for 'Previous', 'Next', 'Cancel', and 'Help'. The Bizfon logo is visible in the top right corner.

Fig. I-12: DHCP Settings for the LAN Interface page

Click on **Next** to display the **Regional Settings** page.

Regional Settings

If your Bizfon is located outside of the United States, it is important to properly configure your line connections to the PSTN in your location.

The screenshot shows the 'System Configuration Wizard' window with the 'Regional Settings and Preferences' section active. It includes a dropdown for 'Your locale (location)' set to 'US', a dropdown for 'Timezone' set to 'US/Central', and radio buttons for 'Plain' and 'Dynamic' under 'Choose OUI theme'. The 'Dynamic' option is selected. At the bottom of the wizard, there are buttons for 'Previous', 'Next', 'Cancel', and 'Help'. The Bizfon logo is visible in the top right corner.

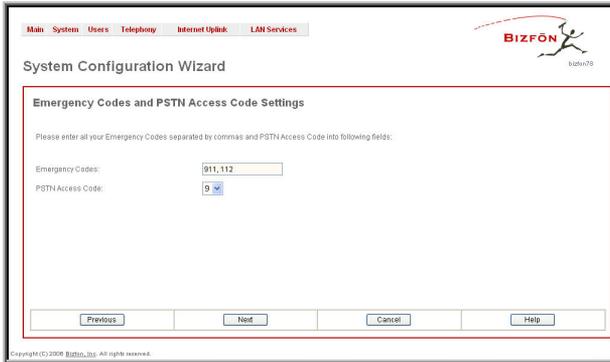
Fig. I-13: Regional Settings page

Proper configuration of Regional Settings is important for the functionality of the voice sub-system. The Regional Settings determine the proper telephony parameters on the LINE (ISDN) and PHONE ports of the Bizfon for the specified country. Select the country where the Bizfon is located. If you do not find your country in the list, pick the closest in your time-zone.

The Bizfon obtains the correct time automatically over the Internet from a time server. If you are not located in the US/Central standard time zone, you will need to change the **Time-zone** to your region.

Click on **Next** to display the **Emergency and PSTN Access Code Settings** page.

Emergency and PSTN Access Code Settings



The screenshot shows the 'System Configuration Wizard' interface. At the top, there is a navigation bar with tabs: 'Main', 'System', 'Users', 'Telephony', 'Internet Uplink', and 'LAN Services'. The 'Telephony' tab is selected. The Bizfon logo is in the top right corner. The main content area is titled 'System Configuration Wizard' and contains a section for 'Emergency Codes and PSTN Access Code Settings'. Below this title, there is a text prompt: 'Please enter all your Emergency Codes separated by commas and PSTN Access Code into following fields:'. There are two input fields: 'Emergency Codes:' with the value '911,112' and 'PSTN Access Code:' with the value '9'. At the bottom of the form, there are four buttons: 'Previous', 'Next', 'Cancel', and 'Help'. A small copyright notice 'Copyright (C) 2006 Bizfon, Inc. All rights reserved.' is visible at the bottom left of the window.

Fig. I-14: Emergency and PSTN Access Code Settings page

You may enter your local specific emergency codes into the appropriate field. For example, in the United States the emergency number is 911, whereas in Germany it is 112,110. In case of an emergency you can then pick up any FXS phone and dial your configured emergency code without any prefixes for PSTN calls (see [Step 3: Making/Receiving Calls](#)).

The PSTN Access Code is the prefix number you choose to dial to tell the Bizfon to “make this call over PSTN” (see [Step 3: Making/Receiving Calls](#)). Users in the United States will usually choose 9 here. European users usually would want to enter zero (0). If you do not enter anything into this field the currently configured PSTN Access Code will stay unchanged.

Click on **Next** to display the **Summary Page**.

Finishing the System Configuration Wizard

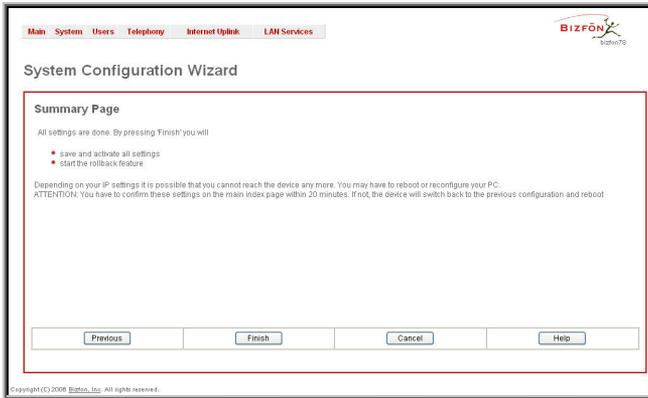


Fig. I-15: System Configuration Wizard finishing page

Click on **Finish** to complete the System Configuration Wizard. The Bizfon will then stop internal functions and apply the changes made in the Wizard.



Fig. I-16: Wizard Execution Progress page

After this is complete, the Bizfon will reply with the **Confirm Settings** page requesting confirmation of the changes. Press on **OK** to confirm the settings.

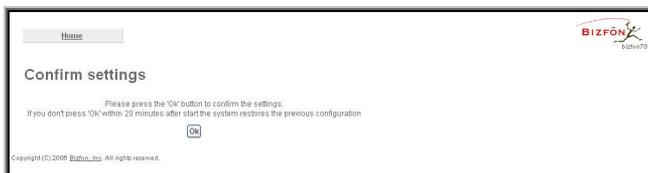


Fig. I-17: Confirm Settings page

Please Note: you must confirm the settings within 20 minutes, otherwise the device will **revert back to the previous configuration and reboot.**

Please Note: If you do not use DHCP for your LAN and you have changed your LAN set-

tings, make sure that the IP address of the PC connected to Bizfon is still within the specified IP address range, otherwise your PC may not establish a connection to Bizfon.

If you changed the network configuration of the LAN, restart your LAN connection to receive a new IP address from the new network. Then you can access the Web Management of the Bizfon on the new IP address you've assigned to the Bizfon.

Step 2.3: Internet Configuration Wizard

Open the **Internet Configuration Wizard** by selecting the corresponding menu item on the **System** menu. The **Internet Configuration Wizard** is a tool for the administrator to configure the WAN settings and to adjust Bizfon's connectivity in the global network. It must be run if Bizfon is desired to be connected to the Internet.

The page **Getting Started** will be displayed:

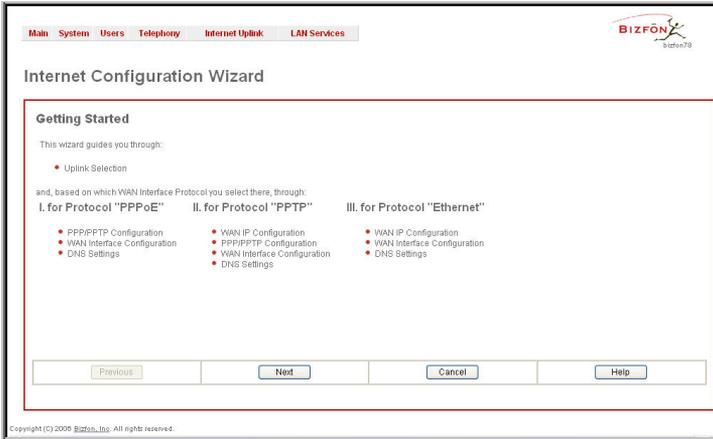


Fig. I-18: Internet Configuration Wizard

This first page of the **Internet Configuration Wizard** is for informational purposes only and lists the items to be configured, Click on the **Next** button for the **Uplink Configuration** page.

Before configuring the WAN port to the Internet, you need to get the following information from your internet service provider:

- Bandwidth - how much is available upstream and downstream?
- WAN IP Configuration - is DHCP supported? If yes, no more information is needed. If DHCP is not supported, the following data is needed: the WAN IP address, the sub-net mask, the IP address of the standard gateway and the IP address of the Domain Name Server (DNS).
- MAC address - needed when the ISP requires a specific MAC address for the WAN.

Additionally, for Point-to-Point Protocol over Ethernet (PPPoE) WAN interface, you need to get the following information from your internet service provider:

- PPP Configuration - does your ISP use a dynamic or fixed WAN IP address? If the WAN IP address is dynamic, no more information is needed. If the WAN IP address is fixed, you will have to enter it.
- Authentication - does your ISP require authentication? If authentication is required, information about the corresponding method (PAP, CHAP or MSCHAP) is needed including the username and password of the PPPoE account.

This information will be needed to be inserted in the Internet Configuration Wizard.

Uplink Configuration

Select the desired WAN Interface Protocol and enter the **WAN Interface Bandwidth** to assure the quality of IP calls.

Fig. I-19: Uplink Configuration

If the available bandwidth is used to the point where the quality of an additional IP call would suffer, then new IP calls are rejected.

The bandwidth provided by your ISP must be specified for both **Upstream** and **Downstream** fields. The default entry in both fields is **10000**, the maximum bandwidth of the 10 MB uplink module. For basic DSL and cable modem service in the United States, typical values are **300** for Upstream and **1500** for Downstream.

The **Min Data Rate** text field is used to specify the amount of bandwidth reserved for data applications. The value entered here needs to be smaller than the value specified for **Upstream Bandwidth**.

Specify the **WAN Interface Protocol** by choosing between available WAN interface protocols: **PPPoE** (Point to Point over Ethernet), **PPTP** (Point to Point Tunneling Protocol) and **Ethernet**. Use Ethernet for DHCP or static IP.

For **Ethernet**, clicking **Next** will display the **WAN IP Configuration** page. If **PPPoE** is the selected WAN Interface Protocol, the next page will be [PPP/PPTP Configuration](#). For **PPTP** WAN Interface Protocol, [PPP/PPTP Configuration](#) page will follow the **WAN IP Configuration**.

WAN IP Configuration

Your Internet Service Provider (ISP) should provide this information.

- **Assign automatically via DHCP** - The parameters are set automatically by the ISP. This is common with cable modem and DSL service.
- **Assign Manually** requires the administrator to enter the external **IP Address**, the corresponding **Subnet Mask**, and the IP address of the **Standard Gateway**. This is common when you have a static IP address with your ISP.

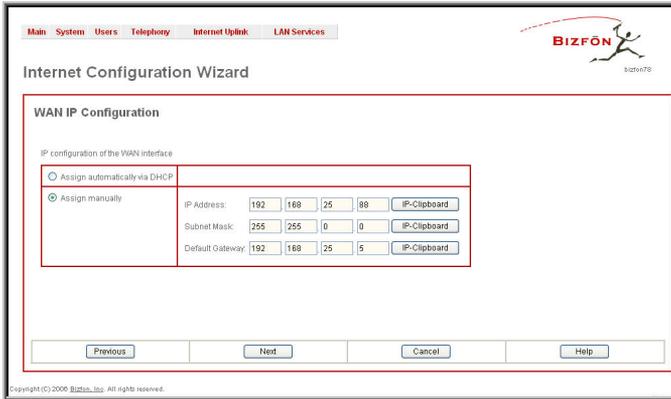


Fig. I-20: WAN IP Configuration page

Click on **Next** to display the **WAN Interface Configuration** page.

PPP/PPTP Configuration

Enter the IP address of the PPTP server into the **PPTP Server** text field.

Choose the encryption for the traffic over the PPTP interface from the **Encryption** drop down list.

Authentication Settings require the Username and the Password used for the authentication on the ISP server.

Dial Behavior radio buttons:

- **Dial Manually** - If this radio button is activated, a button will be displayed in the main management window that serves to switch the Internet connection on/off. When accessing the Internet, every station of the connected LAN has to connect to Bizfon first.
- **Always connected** - Bizfon stays in the always connected mode. This will allow Bizfon always remain online in the network.

The **IP Address Assignment** field is used to specify the external IP address given to the Bizfon. Usually it is a dynamic address but in some cases you may be given a static IP address.

The screenshot displays the 'Internet Configuration Wizard' window, specifically the 'PPP / PPTP Settings' tab. At the top, there are navigation tabs: 'Main', 'System', 'Users', 'Telephony', 'Internet Uplink', and 'LAN Services'. The Bizfon logo is in the top right corner. The main content area contains the following fields and options:

- PPTP Server:** A text input field with an 'IP-Clipboard' button to its right.
- Encryption:** A dropdown menu currently set to '128 Bit'.
- Authentication Settings:**
 - User name:** A text input field containing 'bizfon_user'.
 - User password:** A text input field with masked characters '****'.
- Dial behaviour:** Two radio buttons: 'Dial manually' (unselected) and 'Always connected' (selected).
- IP Address Assignment:** Two radio buttons: 'Dynamic IP Address' (unselected) and 'Fixed IP Address' (selected). Below the 'Fixed IP Address' radio button is a text input field for the 'Fixed IP Address' containing the values '172', '16', '169', and '30', followed by an 'IP-Clipboard' button.
- Keep connection alive:** A checked checkbox.

At the bottom of the form, there are four buttons: 'Previous', 'Next', 'Cancel', and 'Help'. A small copyright notice is visible at the bottom left: 'Copyright (C) 2006 Bizfon, Inc. All rights reserved.'

Fig. I-21: PPP/PPTP Configuration page

If your ISP assigns a dynamic IP address, activate the **Dynamic IP Address** radio button, otherwise activate the **Fixed IP Address** radio button and enter the IP address you were assigned by your ISP.

Keep Connection alive checkbox enables keeping the connection alive by sending control packets dedicated for the link state verification.

Click the **Next** button to display the **WAN Interface Configuration** page.

WAN Interface Configuration

If your ISP requires a specific MAC address, (for example, for authentication), it can be entered on this page. The required MAC address can be entered into the **User defined** field. If a specific MAC address is not required, leave the default selection **This device** selected.

Internet Configuration Wizard

WAN Interface Configuration

MAC Address Assignment

This device: 00:03:00:78:01

User defined: 1E A8 00 78 68 10

Maximum Transfer Unit (MTU)

MTU: 1500 Bytes

Previous Next Cancel Help

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Fig. I-22: WAN Interface Configuration page

Use the **MTU** drop down list to select the maximum packet size on the Ethernet (in bytes). Click **Next** to display the **DNS Settings** page.

DNS Settings

For DNS, the selection is set to **Dynamically by Provider**. When using a static IP address, fixed values must be entered.

Internet Configuration Wizard

DNS Settings

Nameserver assignment

Dynamically by provider

Fixed Nameserver Address

Nameserver: 192 168 0 2 IP-Clipboard

Alternative Nameserver: 192 168 0 156 IP-Clipboard

Previous Next Cancel Help

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Fig. I-23: DNS Settings page

The Bizfon will suggest the correct settings. If **Dynamically by Provider** is selected, the DNS server settings will be set automatically whenever a connection to the Internet is established.

If **Fixed Nameserver Address** is selected, manually enter the IP addresses provided by your ISP for the name server and the alternative name server.

Clicking **Next** shows the summary page of the Internet Configuration Wizard.

Finishing the Internet Configuration Wizard

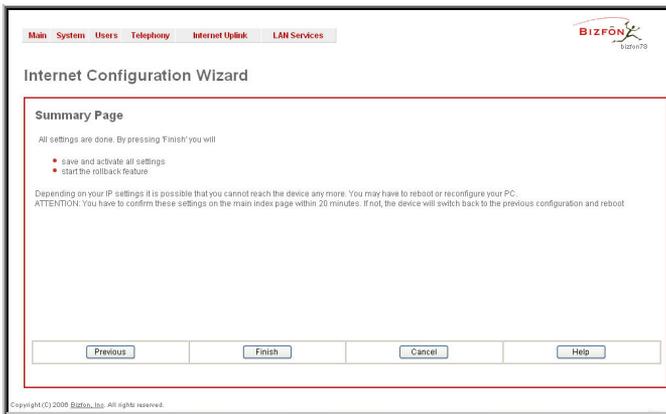


Fig. I-24: Internet Configuration Wizard Summary page

Click the **Finish** button to complete the Internet Configuration Wizard. The Bizfon will then stop internal functions and apply the changes made in the Wizard. After this is complete, the Bizfon will display the **Confirm Settings** page requesting confirmation of the changes. Press the **OK** button to confirm the settings.

Please Note: the settings should be confirmed within 20 minutes; otherwise, the device will **revert back to the previous configuration and reboot**.

Step 2.4: Firewall Configuration

By default, Firewall configuration on the Bizfon has medium security, which denies any incoming traffic from the WAN except for voice traffic.

Disabling the firewall is only required to access the Bizfon's management when the Bizfon is connected behind a router. To disable the firewall, open **Firewall Configuration** from the **Internet Uplink** menu. Disable the firewall by deselecting the corresponding checkbox and save changes.

The screenshot shows the 'Firewall Configuration' page in the Bizfon web interface. The navigation menu at the top includes 'Main', 'System', 'Users', 'Telephony', 'Internet Uplink', and 'LAN Services'. The 'Internet Uplink' menu item is active. The page title is 'Firewall Configuration'. There are three checked checkboxes: 'Enable IDS', 'Enable NAT', and 'Enable Firewall'. Below these are three radio button options for security levels:

<input checked="" type="radio"/> Low Security	Everything is allowed that's not explicitly forbidden! This policy doesn't block anything per default. You have to configure the filters manually. This option is recommended if this device is already located behind another firewall or if you are sure that you have configured every filter correctly. Basic protection against the most common attacks (port scans, flooding, etc) is still provided with this policy.
<input type="radio"/> Medium Security	Traffic originating from the LAN-side may pass and traffic from the WAN-side will be blocked per default. This is the recommended policy.
<input type="radio"/> High Security	Everything that is not explicitly allowed will be blocked. This includes traffic from the LAN-side. You have to configure the filters to open up the firewall as desired.

Below the table, there is a link for 'Advanced Firewall Configuration' and a link for 'View Filtering Rules'. At the bottom, there are 'Save', 'Back', and 'Help' buttons. A copyright notice at the bottom left reads: 'Copyright(C) 2008 Bizfon, Inc. All rights reserved.'

Fig. I-25: Firewall Configuration page

Please Note: The **Enable IDS** checkbox is not available for some Bizfon IP PBX models.

Step 2-A: Using IP Lines

The basic configuration procedure for Bizfon IP PBXs that use IP lines is exactly the same as described in Step 2.

Before starting the IP Lines specific configuration, the appropriate IP Phone (the list of SIP phones supported by Bizfon is presented below) should be connected to the LAN port of the Bizfon.

Each IP Line should be configured individually from the **Telephony** menu, **Line Settings** page, **IP Line Settings** tab.

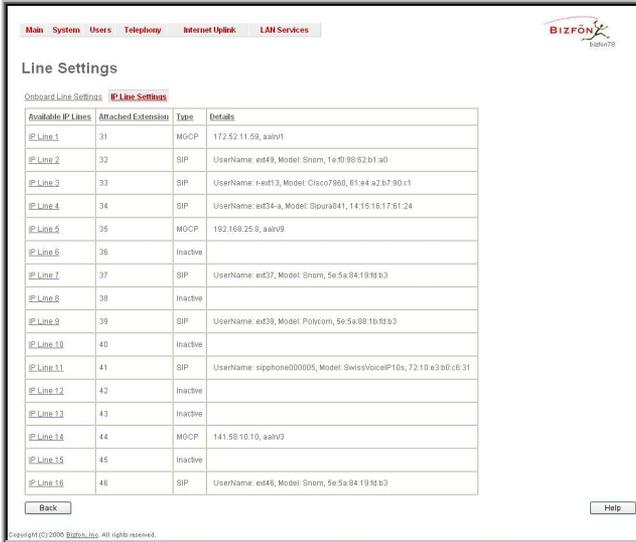


Fig. I-26: Line Settings page

Click on the IP Line number to enter the **IP Lines Settings** page.

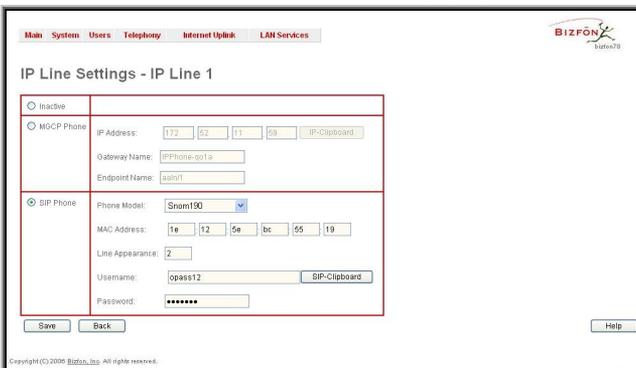


Fig. I-27: IP Line Settings – Edit IP Line page

Select the **SIP Phone** radio button. Select the SIP IP phone model from the **Phone Model** drop down list.

Insert the SIP Phone's **MAC address** in the corresponding fields. The MAC address of an IP phone is usually printed on the back of the phone's base unit.

In the **Line Appearances** text box, enter the number for simultaneous calls supported by the SIP IP phone – which is the sum of the number of active and held calls. For example, if this field is set to **1**, only one active call is possible to have on the phone and making or accepting a second call while the other is on hold will not be allowed. Note, that this number depends on the phone brand and model, and cannot exceed the number of simultaneous calls supported by the phone.

To simplify the configuration procedure, Bizfon generates unique identification parameters (see **Username** and **Password**). You may use either these values or specify new ones.

Press **Save** to apply the settings for the IP line.

Reset the SIP Phone. After restart, the appropriate configuration will be automatically downloaded from the Bizfon to the SIP Phone.

Please Note: If you have decided to make the IP phone configuration manually, it is recommended to select the **Other** option from the Phone Model drop down list and to make the configuration manually on the SIP phone also. The SIP phone's configuration is different dependent on the SIP phone model. For more information about SIP Phone configuration, refer to the SIP phone manual or user's guide.

Some SIP phones require only reboot for configuration download. Other SIP Phones may require additional configuration. For example, by default IP Dialog SIP Tone II is in non-auto-provisioning mode, therefore the user has to manually enable it on the phone.

To make sure the line configuration works properly, do the following:

- Go to **Bizfon Status- SIP Registration status – Registered IP Lines** to see if IP Line registration is successful.
- Dial *74 to get the line information.
- Make outgoing and accept incoming calls.

To make the IP line functional (for example, to be able to make/receive calls), refer to the [Step 3: Making/Receiving Calls](#) chapters further in this guide, with the difference that the extensions should be attached to the configured IP line.

If an MGCP IP phone is connected to the Bizfon's LAN, the MGCP Phone configuration should be done manually. The **MGCP Phone** radio button should be selected and the **IP Address**, **Gateway Name** and **Endpoint Name** fields should be manually filled in with the appropriate information. The information can be taken from the MGCP Phone or provided by its administrator.

Supported SIP Phones

Below is the list of SIP phones that can be automatically configured to work with Bizfon IP PBXs:

- Snom 190 (Application version 3.60s)
- Snom 200 (Application version 3.56m)
- Snom 220 (Application version 3.56m)
- Snom 320 (Application version 4.2)
- Snom 360 (Application version 4.1)
- Polycom Soundpoint IP 300SIP (Application version 1.3.1)
- Cisco IP Phone 7960 (Image version 7.4 (P0S3-07-4-00))
- Swissvoice IP 10S (Application version IP10 SP v1.0.0 (Build 16))
- IP Dialog SIP Tone II (ST201) (Firmware Version SipTone 1.2.0 rc_Z_21)
- Aastra 480i (Application version 1.3.0.1080)
- Sipura SPA-841 IP (Software version 3.1.4(a))

Step 2-B: Using Receptionist

If you wish to use the Receptionist's features, the Receptionist should be set up on the Bizfon. The Bizfon's basic configuration should be done in the same way as described in the Step 2.

To get the Receptionist related setup, with detailed instructions on how to configure the Bizfon and the attached IP Phones, contact Bizfon's Technical Support.

Step 3: Making/Receiving Calls

Attention: By default, the Bizfon is preconfigured with default SIP registrations that allow Bizfon users to call other Bizfon users over IP. These registrations are included for test purposes and can not be modified. If a user changes the registration information, only a factory reset will restore the values.

- To make a call to the PSTN, lift the handset and dial **9** and the local phone number. You may accelerate the dialing process by adding the **#** after the last digit, e.g., 9 + 972-661-1335#. You are making a local call through the PSTN. It is assumed an FXO phone line is connected to the Bizfon.
Please Note: In case you had changed the default value of the **PSTN Access Code** in the System Configuration Wizard to something other than 9, you will need to dial your chosen digit instead.
- To make a VoIP call to a user on the remote Bizfon, lift the handset and dial **8 + SIP Address** (of the user on the remote Bizfon) + **#**. You are calling over the Internet to a remote user.
Please Note: Bizfon has a SIP Address test line to test newly provisioned Bizfon devices. Call **8 + 88 + #** and you will hear a message if the call was successful. This message comes from a Bizfon in one of our offices. SIP Addresses are described below.
- Received IP calls will ring the extensions automatically.
- Received PSTN calls will be directed to the Bizfon's default Auto Attendant (00).

Using the Default SIP Addresses

Making Internet IP calls is simple with the Bizfon. By default, every standard (analog) telephone connected to one of Bizfon's phone lines functions as an IP phone. If you open the **Extensions Management** page, you will see that some **SIP Addresses** are available, one attached to the Auto Attendant and one to each extension. These SIP addresses are the IP telephone numbers of these extensions. Anyone with a Bizfon or any other SIP IP device on the Internet can place a call to **SIPAddress@sip.bizfon.com** and the call will ring the associated extension.

Under **Extensions Management**, you may edit the **Display Names** to assign extensions to people.

Add Edit Delete Select all Inverse Selection						
Extension	Display Name	Attached Line	SIP Address	Percentage of System Memory	Call Relay	Codecs
00	Attendant		73072000@sip.bizfon.com:5060	3% (5 min 35 sec)		PCMU...
<input type="checkbox"/> 11		Line 1	73072011@sip.bizfon.com:5060	1% (1 min 51 sec)	No	PCMU...
<input type="checkbox"/> 12		Line 2	73072012@sip.bizfon.com:5060	1% (1 min 51 sec)	No	PCMU...
<input type="checkbox"/> 13		Line 3	73072013@sip.bizfon.com:5060	1% (1 min 51 sec)	No	PCMU...
<input type="checkbox"/> 14		Line 4	73072014@sip.bizfon.com:5060	1% (1 min 51 sec)	No	PCMU...
<input type="checkbox"/> 31		IP Line 1	73072031@sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 32		IP Line 2	73072032@sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 33		IP Line 3	73072033@sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 34		IP Line 4	73072034@sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 35		IP Line 5	73072035, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 36		IP Line 6	73072036, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 37		IP Line 7	73072037, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 38		IP Line 8	73072038, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 39		IP Line 9	73072039, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...
<input type="checkbox"/> 40		IP Line 10	73072040, Proxy:sip.bizfon.com:5060	2% (3 min 43 sec)	No	PCMU...

Fig. I-28: Extensions Management page

To do so, click on the box in the first column next to the extension to edit and click the **Edit** button. When the page opens, go to **General Settings** and edit the **Display Name** and click the **Save** button. Do not change any other settings at this time. For more information on the **Extensions Management** settings, refer to the Administrator’s Guide. The default SIP addresses are based on internal parameters unique to each Bizfon device. If the Bizfon undergoes a factory reset, the default addresses will be restored.

Appendix: PC DHCP Settings

The Bizfon LAN port has a DHCP server that provides DHCP IP addresses to devices connected to the LAN either directly or through an Ethernet hub or switch. This appendix describes how to configure Windows PCs for DHCP. The PC used to access the Bizfon must meet the following conditions:

- TCP/IP network protocol has to be installed.
- DHCP has to be activated in order to request the IP address automatically.

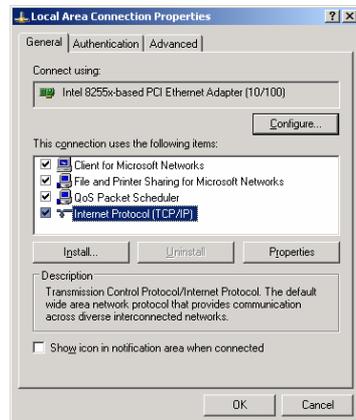
Please Note: If your PC is already configured for DHCP and connected directly to the Bizfon, then simply power it on and verify the LAN LED is lit. If LED is off, check the cable connections.

Follow the instructions below to install TCP/IP and enable DHCP functionality:

TCP/IP and DHCP under Windows 2000/XP

Windows 2000 and Windows XP PCs with Ethernet cards or adapters normally are configured with a TCP/IP network connection by default. Nothing in addition is required. To enable the DHCPs functionality, you may have to modify the properties of TCP/IP:

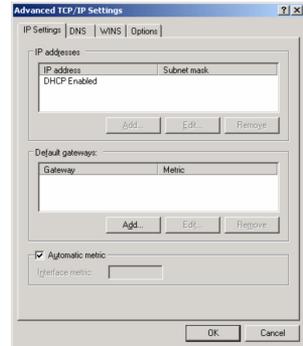
1. Click the **Start** button. Choose **Settings**, then **Control Panel**.
2. Double-click on the **Network Connection** icon to open the corresponding window. Select **Local Area Connection** with the right mouse button and select **Properties**.
3. Highlight **Internet Protocol (TCP/IP)** under **General** tab and click **Properties**. The corresponding window will be displayed.



4. Choose **Obtain an IP address automatically** and **Obtain DNS server address automatically** selections and press **Advanced** button.



5. You will see the entry **DHCP Enabled**.
6. Click **OK** three times to close all windows.



TCP/IP and DHCP under Windows 95/98/ME

1. Click the **Start** button. Choose **Settings**, then **Control Panel**.
2. Double-click on the **Network** icon to open your Network window. Select the **Configuration** tab.
3. Click **Add**.
4. Double-click on **Protocol**.
5. Highlight "Microsoft" under the list of manufacturers.
6. Find and double-click on **TCP/IP** in the list to the right.
7. The Network window will appear with the TCP/IP protocol now listed.
8. Highlight "TCP/IP" and click on **Properties**.
9. Select **Getting IP address automatically** to enable the DHCP functionality.
10. Click **OK**.
11. Windows will ask you to restart the PC. Click **Yes**.

The TCP/IP installation is now complete and the DHCP functionality is enabled.

Appendix: Changing the Admin Password

For security reasons, it is recommended that you change the default admin password. The username of the administrator (**admin**) cannot be changed.

To change the administrator password, go to the **System** menu, **User Rights Management**.

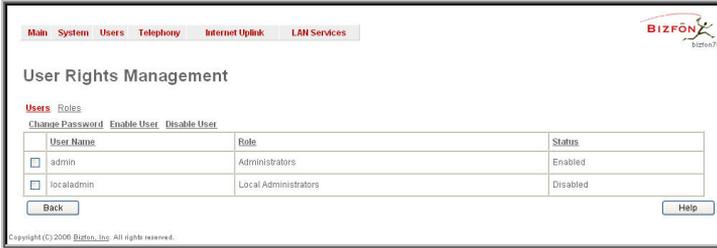


Fig. I-29: User Right Management page

Choose **admin** from the list and press the **Change Password** functional button from the **User Right Management** page toolbar.

The **Change Password** page will be displayed.

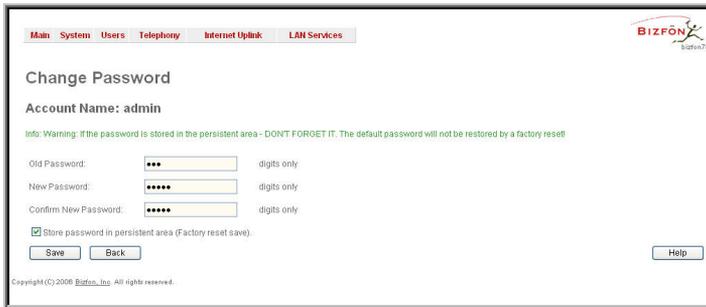


Fig. I-30: Change Password page

Enter the **Old Password** (19) and the **New Password** in both the **New Password** and **Confirm New Password** fields. Please note that only numeric digits may be entered here. Leave **Store password in persistent area (Factory reset save)** disabled.

Write down the password somewhere and keep it in a secure place. If the password is lost, a factory reset will be required on the unit (see Administrator's Guide, Hardware Overview). All settings are lost after a factory reset. After a factory reset the default password (19) will be restored.

Appendix: Configuring NAT Traversal

NAT or Network Address Translation is a common feature used to expand the use of connected PCs and other networked devices without having to use multiple global Internet public IP addresses. Most ISP's will assign one public IP address to each customer that is connected to the Internet. The customer can use a router to provide NAT capability and create a private network of PCs and other devices not visible from the Internet. This method offers security and also eliminates the need to assign global Internet public IP addresses to each device on the LAN.

The Bizfon initiates and receives SIP calls from the Internet (or the network connected to the WAN port). To receive SIP calls, the Bizfon must be able to receive packets from the SIP server or any other device that is trying to make an incoming call. If the Bizfon is placed behind a router with NAT, like most basic routers on the market today, the Bizfon will not be able to receive calls. To resolve this issue, either STUN must be enabled on the Bizfon or SIP NAT traversal must be set up in the router and in the Bizfon to route the incoming calls properly.

Please Note: NAT traversal only works with Internet connections that have static IP addresses. Verify from your provider that this is the case for your Internet connection. Some ISPs provide dynamic IP addresses that may change from time to time, and are not appropriate for SIP NAT traversal.

Please Note: If you have more than one router in series between the Bizfon and the Internet, the same port forwarding setup must be configured on each router.

NAT Traversal Setup

- Install the Bizfon behind the router. If the Bizfon is configured with its factory default settings, it is already configured for DHCP and will obtain an IP address automatically from the router.
- Connect a PC to the Bizfon LAN port and power it up.
- Verify the Bizfon can connect to the Internet by opening a browser window and browsing to a familiar WEB site. If the Bizfon cannot reach the Internet, verify the LAN/WAN LEDs and the cabling. Verify the Bizfon is set up for DHCP on the WAN and that the router has the DHCP server enabled for the devices behind it.
- Find the address of the router and log into the router. Refer to the router's user manual on how to open the router configuration.
- Set up port forwarding on the router to forward UDP ports 5060, 6000-6099 to the IP address assigned to the Bizfon. You can see the IP address of the Bizfon in the **System** menu under **Status**, submenu **Network Status**. The IP address will be listed as the WAN IP address. Your router also may indicate the IP address assigned to the Bizfon.
- Find out the public Internet address (WAN IP address) of the router. To do so, open a browser and go to www.whatismyip.com. The site will return your public Internet IP address. Record this IP address.
- From the **Telephony** menu of the Bizfon Management go to the **NAT Traversal Settings** page, go to **General Settings** and set the enable **NAT Traversal for SIP** radio buttons selection to **Force**. **Save** the selection.

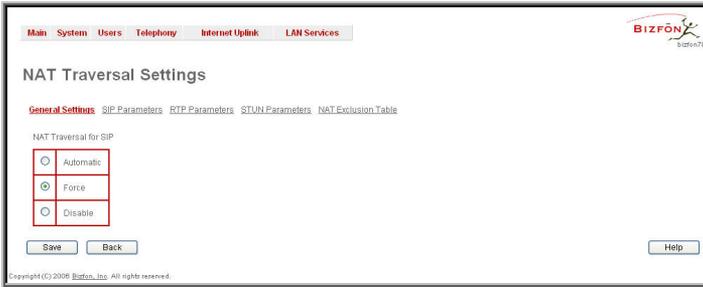


Fig. I-31: NAT Traversal Settings – General Setting

Go to **SIP Parameters** page.



Fig. I-32: NAT Traversal Settings - SIP Parameters

Select **Use Manual NAT Traversal** and enter the WAN IP address of the router into the **Mapped Host** text field. For **Mapped Port**, enter the router's corresponding port number, in this case **5060**. **Save** the entries.

- Go to the **RTP Parameters** page and select **Use Manual NAT Traversal**.

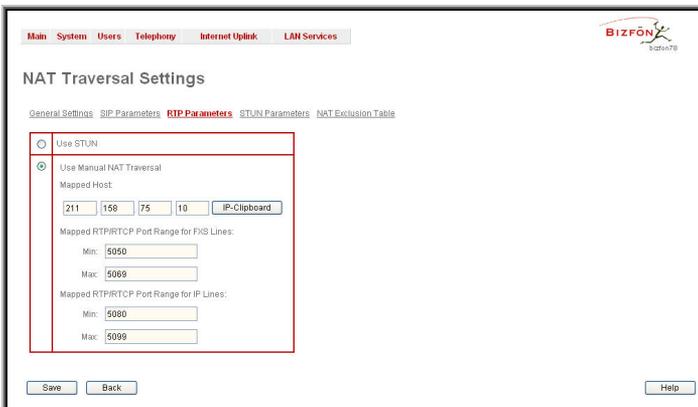


Fig. I-33: NAT Traversal Settings - RTP Parameters

- Enter the WAN IP address of the router into the **Mapped Host** text field. Set the **Mapped RTP/RTCP Port Range for FXS lines** and the **Mapped RTP/RTCP Port Range for IP lines** according to the values specified on the router, in this case to **6000 (Min)** and **6049 (Max)** and **6050 (Min)** and **6065 (Max)**, respectively. Click the **Save** button to save the contents.

The Bizfon will activate the settings and register the extensions on the Bizfon SIP Server after a few minutes. You can verify the settings from the main **Bizfon Management** menu under **Status** in the **SIP Registration Status** section.

Appendix: Checking the Connections

If the system doesn't seem to be working properly, even when all the cables are connected properly, it may be helpful to **Start Network Diagnostics**: The WAN link, IP configuration, gateway, DNS server, and STUN-NAT will all be checked.

To start diagnostics, open the **System's** menu item **Diagnostics** and click **Start Network Diagnostics**.

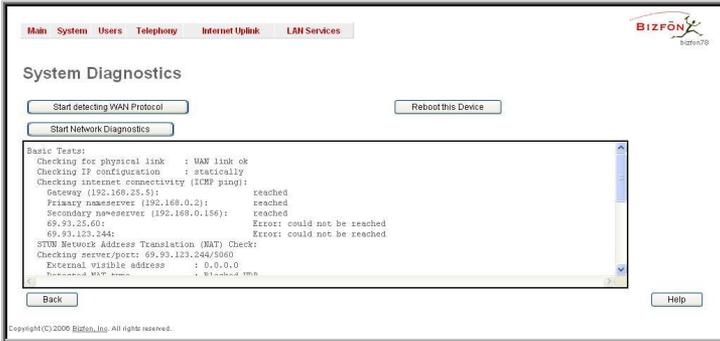


Fig. I-34: System Diagnostics - Network Diagnostics page

If the test passes, the output of the system may look as follows:

Basic Tests:

```

Checking for physical link:           WAN link ok
Checking IP configuration:           dynamically via DHCP Client
DHCP Client is running
Checking internet connectivity (ICMP ping):
Gateway:                             reached
Primary nameserver:                 reached
Secondary nameserver:               not configured
www.bizfon.com:                     reached
STUN Network Address Translation (NAT) Check:
External visible address:           212.126.210.179
Detected NAT type                   : Restricted cone

Performing MTU Discovery:
preparing system
Sending UDP Datagram of size 1500   got answer
clean up

Largest usable MTU size is: 1500 Bytes
Test successful.

```

Depending on where the test is failing, the diagnostic can give some advice on how to solve the problem. See the example below of a failed test:

Basic Tests:

```

Checking for physical link:           no WAN link
Please check the physical connection of the WAN interface. Cable not
plugged or broken?

Test failed.

```

If diagnostics are successful, but you are still unable to place a call to 899# then check the SIP registration status.

Open the SIP Registration Status page using the Bizfon management **System** menu item **Status**. Besides the SIP registration information for the auto attendant and each connected extension, the **Detected Connection Type** is shown. If Bizfon is placed behind a NAT router and the STUN is enabled, the detected connection type and the IP address of this router's WAN port are displayed.

Bizfon Status - SIP Registration Status

General Information

Network Status

Lines Status

Memory Status

Hardware Status

SIP Registration Status

MGCP Registration Status

Registration on SIP Servers

Extension	Ext. Name	Server	Registered	Registration Time
00	73072000	sip.bizfon.com	Yes	20-Sep-2005 16:35:19
34	73072034	sip.bizfon.com	Yes	20-Sep-2005 16:35:19
33	73072033	sip.bizfon.com	Yes	20-Sep-2005 16:35:18
32	73072032	sip.bizfon.com	Yes	20-Sep-2005 16:35:18
31	73072031	sip.bizfon.com	Yes	20-Sep-2005 16:35:18
14	73072014	sip.bizfon.com	Yes	20-Sep-2005 16:35:17
13	73072013	sip.bizfon.com	Yes	20-Sep-2005 16:35:17
12	73072012	sip.bizfon.com	Yes	20-Sep-2005 16:35:17
11	73072011	sip.bizfon.com	Yes	20-Sep-2005 16:35:17

Registered IP Lines

Username	Binding IP Address	Registration Time	Registration Expires In
No items in list.			

Back Help

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Fig. I-35: SIP Registration Status page

Bizfon cannot work behind your router if **Detected Connection Type** is one of the following:

- Unknown connection - unexpected error
- Symmetric NAT
- Symmetric Firewall
- Blocked UDP

If you get one of the above mentioned Detected Connection Types, either connect the Bizfon in front of the router, or configure NAT traversal manually as explained in [Appendix: Configuring NAT Traversal](#).

If you are unable to resolve your problems, please contact Bizfon's Technical Support.

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