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From Bicom Systems Wiki

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System Requirements

What is needed to get the PBXware up and running?

Server Hardware

- Standard x86-compatible server hardware
- 1.6 GHz or faster CPU minimum (2.6 GHz or more recommended)

- Compatible processors include:

Intel®: Celeron®, Pentium® II, Pentium III, Pentium 4, Xeon™, Core® series, Core® 2, Core® iX, Atom

AMD™: Athlon™, Athlon MP, Athlon XP, Athlon X series, Duron™, Opteron™

Via: C3, C7

Memory

- 1 GB minimum (2 GB or more recommended)

Display

- None required. (Exception is during the installation only for)

Disk Drives

- Free space for installation:
- 15 GB minimum for CD ROM/USB Installation Method
- For PBXware in Vserver environment, please check disk space requirements for Bicom Systems SERVERware
- Standard CD-ROM/DVD-ROM drive

Local Area Networking

- Any Ethernet controller supported by the operating system
- Network configured and fully setup with DHCP service
- Optional: If the server is to operate from a private LAN IP then the firewall must be opened to the following ports: TCP: 80, 81, 443, 10001, 5038, 5060-5069, UDP: 4569, 5060-5069, 10000-20000

Supported Browsers

System can be administered by using one of the following web browsers:

- Internet explorer 7.0+
- Firefox 3.5+
- Opera 10.*+
- Safari 4.0+
- Chrome 9+

Support Requirements

In order to provide system support we need the access to the system server by SSH, HTTP/HTTPS protocols, following is required:

- Access to system server as user 'root'

- Networking setup and fully configured to port forward (or firewall opened) to ports 2020, 80, 81 and 443.

With above in place our technicians will be able to troubleshoot issues. We regret that we are not able to support systems, that do not satisfy above requirements. We ask for understanding.

If not sure how to install PBXware we offer a professional installation service. Please contact sales or visit our web site for full details.

Installation Guide

The PBXware can be installed by one of the following installation methods:

CD ROM installation method is used to install the PBXware onto a commodity PC/server hardware. The installation process installs a Linux operating system, PBXware and all other necessary applications onto the system hard drive. Installation is easy, fast and includes everything needed to successfully install and operate.

WARNING:

CDROM will install the PBXware on hard disk and will erase all existing data, operating system and other files.

- **USB** installation method is similar to CD ROM. Only difference is the boot medium which holds PBXware installation files.
- **VIRTUAL SERVER** installation is a PBXware system contained within a VSERVER (also known as VPS) on Bicom Systems SERVERware installation.
- **VMware image** is pre-installed with PBXware system so you can test it on your own computer without the special hardware dedicated for this.

Any of the above formats will start the machine/Vserver/image and all necessary software allowing administrator to login with browser into this machine/Vserver. The Administrator can then license the system by entering the licence number or use it in FREE mode. The system will contact our licensing server for authorization. Upon successful licensing, systems can be used normally by logging into the system.

CD ROM

To install the system using the CD ROM do the following:

1. Download and burn CD image from <http://bicomsystems.com/download>
2. Boot up the system, wait for installer to start and follow the instructions
3. The system will be installed and rebooted. Once the system is booted, the display will show obtained IP address.
4. Please login into setup wizard using your favorite web browser by navigating to [http://\\$IPADDRESS](http://$IPADDRESS) (For Example: <http://192.168.1.2>). Default username is "root". Default password is "pbxware"

IMPORTANT:

- Before continuing please read System Requirements.
- The setup wizard has a security username/password to prevent unauthorized access. Defaults are: username: root and password: pbxware. The setup wizard will ask for the password to be changed in one of the setup wizard steps. After it is changed, It is very important to remember this password since it is the system root and setup wizard password.

USB

Installing the system from USB is no different than using CD ROM version. Only difference is how you put downloaded image to the USB:

1. Download USB image from <http://bicomsystems.com/download>
2. Download *PBXware image writer* from downloads page
3. Copy USB image to USB drive using PBXware image writer
4. Set your machines BIOS to boot from USB device
5. Boot the system from USB device

After the image boots from USB device, everything else is the same as the system booted from CD ROM.

IMPORTANT:

- Before continuing please read System Requirements.
- The setup wizard has a security username/password to prevent unauthorized access. Defaults are: username: root and password: pbxware. The setup wizard will ask for the password to be changed in one of the setup wizard steps. After it is changed, It is very important to remember this password since it is the system root and setup wizard password.

Vserver installation

Installing PBXware in Vserver environment is only different in the beginning of the process of installation.

1. Create a Vserver in SERVERware, for which you need to reference the SERVERware documentation.
2. After Vserver with PBXware is created, go to Setup Wizard and configure your PBX system.

VMware image

VMware image is used solely for testing purposes and is not supported for deployment. This means that the user needs to supply the FREE license when asked for, and use the system **only** for testing purposes.

1. Download and extract the package to your disk
2. Go to PBXware_3 folder that you get after extracting the image
3. Open *PBXware_3.vmx* file in VMware Player/Workstation/Fusion
4. Run the virtual machine

Important

Since this is already installed PBXware system inside VMware image, you only need to go through Setup Wizard for initial configuration of the system and then you will be able to use it.

Image is made with bridged networking so the system should get its own IP address which you can access in any compatible web browser.

Obtaining IP Address

The PBXware IP address can be obtained by:

- Connecting a monitor to the PBXware unit and obtaining the IP from the command prompt by entering **ifconfig** command
- Installing the PBXware Finder on a Windows machine which is also connected to the same network. PBXware Finder can be obtained at:
http://downloads.bicomsystems.com/pbxware_finder/pbxware-finder-1.0.exe
- Obtaining it from the DHCP server

Setup Wizard

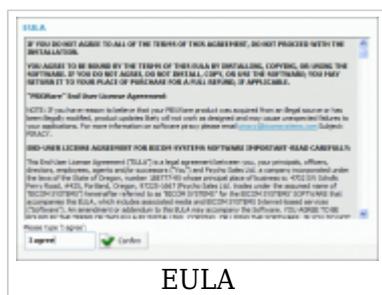
Setup Wizard is designed to collect essential data in order to get the system up and running. After the setup wizard has finished, the system should be fully licensed, fully operational and ready for use.

In order to login to the setup wizard, please point your browser to: [https://\\$IPADDRESS:81/](https://$IPADDRESS:81/) (For example: <https://192.168.1.2:81/>)

IMPORTANT:

The setup wizard has a security username/password in order to prevent unauthorized access. The defaults are: username: root and password: pbxware . The setup wizard will ask for the password to be changed in one of the setup steps. After it is changed, it is very important to remember this password since it is the system root and the setup wizard password.

EULA



EULA

The EULA (end user license agreement) is the first setup wizard step. Please read the EULA and type "I agree" to proceed.

NOTE:

If you do not agree with the EULA, please remove the installation media, and system software and return the license issued.

Administrator Details

Provide the details of the user who will administer the system. These values are used when logging into PBXware

- **E-mail/Confirm E-mail**



The screenshot shows a web form titled "Administrator Details". It contains four input fields: "E-mail" with the value "admin@domain.com", "Confirm E-mail" with the value "admin@domain.com", "Password" with masked characters "*****", and "Confirm Password" with masked characters "*****". Below the fields is a green checkmark icon and a "Next" button.

Provided email address is used as a username for logging in ([a-z] [0-9] [@_.-])

- **Password/Confirm Password**

Provided password is used for logging in ([a-z] [0-9])

Server Details (CD ROM and USB version)

These are system and network fields necessary for proper system operation.

- **Root Password**

PBXware prompts for this password during the system/ssh login and when accessing system services through the interface.

- **Confirm Password**

Re-type the Root Password entered in the field above

- **Time zone**

Select the time zone, in which PBXware is located.

- **Hostname**



The name given to the machine which will identify the system on the network (ex. "myhost")
([a-z] [0-9])

- **Interface**

The PBXware interface uses (LAN/WAN). If the PBXware is in the LAN interface, select it here. In some cases where PBXware is installed on appliances in WAN mode, select WAN here.
(Select box)

- **Use DHCP**

Whether PBXware is using DHCP or the static IP address. It is recommended to always set PBXware on a static IP address, in that case this option should be set to 'No'.
(Option buttons)

- **IP Address**

If PBXware is in the LAN, provide its static IP address here.
([0-9])

- **Netmask**

This field is calculated automatically and contains your IP address Netmask.
([0-9])

- **Gateway**

If PBXware is located in LAN, set the gateway IP address here.
(ex. 192.168.1.1)
([0-9])

- **DNS server**

If PBXware is located in LAN, set the preferred DNS server IP address here
(ex.192.168.1.1)
([0-9])

- **DHCP Server**

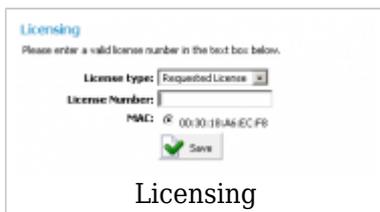
If there is no DHCP server on LAN, PBXware can start its own and provide UADs/Phones with this service. If you already have DHCP server on your network, choose 'No'.
([0-9])

Server Details (Vserver version)



Server Details (Vserver version)

These are system and network fields necessary for proper system operation



Licensing

- **Root Password**

PBXware prompts for this password during the system/ssh login and when accessing system services through the interface.
(ex. do34ffjk)
([a-z] [0-9])

- **Confirm Password**

Re-type the Root Password entered in the field above.
(ex. do34ffjk)
([a-z] [0-9])

- **Time zone**

Select the the time zone, in which PBXware is located, ex. USA/East-coast.
(USA/East-coast)
(Select box)

- **Hostname**

The name given to the machine which will identify the system on the network, ex. myhost.
(ex. myhost)
([a-z] [0-9])

▪ Server name

Virtually the same as the 'Hostname' field, only this name will appear during system notifications, sent emails, etc.
(domain.com)
([a-z] [0-9])

Licensing

Licensing allows you to enter a valid non-active license and displays the MAC address with which the license will be valid. If the system has more than one network adapter, all found MACs will be shown for selection.

▪ License Type

Select a system license type. The system comes with two license types: FREE license and 'Requested License'
(Select box)

▪ License Number

Enter the PBXware license number, select the MAC address if more than one is present and click 'Next' to register the PBXware
([a-z] [0-9])

▪ MAC

The MAC address associated with the PBXware.

NOTE: The system must have access to a fully operational Internet connection in order to license the system. If more than one MAC address is present, select the one you wish to associate with PBXware and click 'Next'.

(Select box)

Locality



The screenshot shows a web form titled "Locality" with the following fields: "Country:" (dropdown menu), "Indications:" (dropdown menu with "Other" selected), "Area codes:" (text input), "Number of digits:" (dropdown menu with "Please select..." selected), "Police:" (text input), "Fire:" (text input), and "Ambulance:" (text input). A "Next" button is located at the bottom of the form.

Locality allows for 'local' system values to be entered in order to setup all the necessary values for normal system operation.

▪ Country

Select the country in which PBXware is located, ex. United Kingdom.
(Select box)

▪ Indications

Typical telephony sounds PBXware will use. A different signal is heard when the handset is picked up in different countries. This field will be set automatically. If your country is not on the list, select 'Other'.
(Select box)

▪ Area Code

The area code of the city where PBXware is located, for example, if your PBXware is in New York, you would set '212' here.
([0-9])

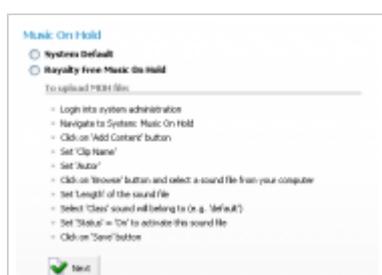
▪ Number Of Digits

The number of digits PBXware will associate with local extensions. If this field is set to '4', all local extensions will have a range from 1000-9999.
(0-9)

WARNING: After you create first extension, queue or an agent on your system, you will not be able to change this setting anymore.

▪ Police/Fire/Ambulance

The number of Emergency Services in the area where PBXware is located. PBXware has an option to dial these emergency services through certain trunks. If all trunk channels are busy, an active call will get dropped in order to dial these numbers.
(If in the USA, for example, set these fields to '911')
(Select box)



Music On Hold

The system comes with a default 'silence' music on hold sound file, or royalty free music on hold file which can be changed later on.

TIP:

This field is available for: Virtual Server, VMWare, CD, and Appliance PBXware packages

▪ Royalty Free Music On Hold

This will upload royalty free music which can be used as default music on hold but it can be changed later on.
(Option button)

UADs

The UADs step (not available in Vserver instances of PBXware) allows an installer to search the network for supported devices. PBXware will automatically scan the network, list all of the devices found, and offer auto configuration.

▪ Start IP



The screenshot shows a window titled 'UADs' with the following text: 'Make sure that all User Agent Devices are set to Factory Defaults. Make sure that all User Agent Devices are using port 9060.' Below this is the label 'Input range of IP addresses:' followed by two input fields. The first field is labeled 'Start IP:' and contains the value '192.168.1.1'. The second field is labeled 'End IP:' and contains the value '192.168.1.254'. At the bottom of the form are two buttons: a green 'Start' button with a checkmark icon and a yellow 'Skip' button with a right-pointing arrow icon.

UADs

Start the search from this IP address.
(ex. 192.168.1.1)
([0-9])

▪ End IP

End the search with this IP address.
(ex. 192.168.1.254)
([0-9])

▪ Start

Enter the Start and End IP address and click this button to perform the search
(Command button)

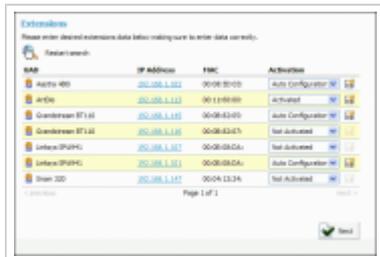
▪ Skip

Skip the search for UADs/Phones on the local network and proceed to the next Setup

Wizard step.
(Command button)

Extensions

After selecting the 'default' UAD, this step offers extension fields in order to add multiple user extensions.



-UAD

Name of the UAD/Phone found in the local network
(ex. Aastra 480i)
(Display)

-IP Address

IP address of the UAD/Phone found in the local network.
(ex. If the phone is located on the 192.168.1.102 IP address, that address will be displayed here. Click it to open the UAD/Phone settings in a new browser window).
(Display)

-MAC

Mac address of the UAD/Phone found in the local network
(ex. 00:0B:27:22:08)
(Display)

-Activation

Set the preferred activation method.

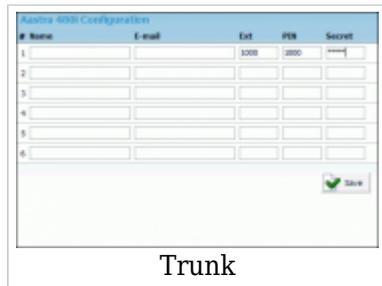
NOTE: If the UAD/Phone supports the 'Auto Configuration' option.

- **Not Activated:** Skip/Do not configure this UAD/Phone
- **Activated:** Creates the PBXware extension and nothing else
- **Auto Provisioning:** Creates a PBXware extension and a file in the TFTP directory for provisioning. This step requires a manual reboot of the device
- **Auto Configuration:** Creates a PBXware extension and a TFTP provisioning file. Goes into the web interface of the phone, automatically configures all details, and reboots the device

(Display)

-  Click this button to edit the UAD/Phone configuration.

(Button)



#	Name	E-mail	Ext	PIN	Secret
1			1001	1001	▼
2					
3					
4					
5					
6					

Trunk

Edit

You can add a system extension for all UAD lines from this location by filling in the following fields:

TIP:

The number of extensions may vary from one phone to another

- **Name:**

Name of the user associated with the extension. This name will be used as Caller ID information when calling
(ex. John Smith)
([a-z] [0-9])

- **E-mail:**

Email address associated with the extension. This email is used for system notification and logging into the Self Care
(ex. john@domain.com)
([a-z] [0-9])

- **Ext:**

Network number.
(ex. 1001)
([0-9])

- **PIN** (Personal Identification Number)

Password that consists of digits, used for accessing voicemail and other additional PBXware services. When user wants to access his 'Voicemail', he is asked to authenticate with his personal 4 (four) digit PIN.

([0-9])

- **Secret:**

Password used for the UAD/Phone authentication with the PBXware.

This field is auto-generated and consists of letters and digits, but you can change this values.

([a-z] [0-9])

Trunk

The trunks step will try to detect supported trunk devices present on the system. Once detected, the wizard will automatically create a trunk based on the most common configuration values.



- **Detected devices**

If the setup wizard detects any hardware devices (cards), they will be listed here.
(Display)

- **Default Destination**

If PBXware has no DIDs set, all incoming calls will go to this destination. Set '1000', for example, to make all calls coming from trunks go to this extension.

([0-9])

Confirmation

Finally, the confirmation step allows for all values to be revised and to either finish the wizard or start all over from the beginning. If 'Confirm and finalize' is clicked, the setup wizard will finish and the browser will be redirected to the system login screen.



Trunk

- **Repeat the wizard**

If you click this button all of the provided details will be reset and started again from step one.

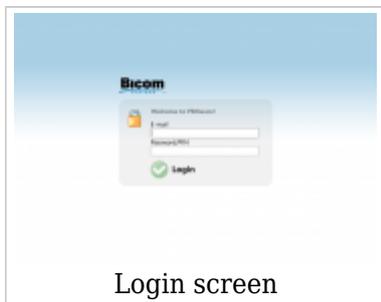
(Command button)

- **Confirm and finalize**

Click this button to confirm the data provided in the setup wizard and finalize the installation. All provided details will be applied and the setup wizard will redirect you to the PBXware login screen.

(Command button)

Logging into the system



Login screen

In order to login to the system, please point your browser to: [http://\\$IPADDRESS/](http://$IPADDRESS/) (For Example:<http://192.168.1.2/>)

- **E-mail**

This is administrators e-mail address, address you have set in the initial setup wizard.

([a-z] [0-9] [@_.-])

- **Password/PIN**

This is administrators password, password you have set in the initial setup wizard.

([a-z] [0-9])

Updates

In order to update PBXware to the latest version follow these steps:

1. Login to the PBXware web interface
2. Navigate to 'Site Settings: Updates' and click on the 'Updates' button
3. Click on 'Start' and wait until the system shows the interface again

License Updates

To upgrade your PBXware license, do as follows:

1. Login to the PBXware web interface
2. Navigate to 'Site Settings: Upgrades'
3. Enter the system root username and password
4. Click on 'License' button
5. Enter the license number in the 'License Number' field (e.g. 0A9DS8F7)
6. Click on the 'Save' button

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