

XV3000 IP-PBX with MCU Getting Started Guide

Package Contents

- XV3000 (2U 19" width unit)
- Short CAT 6 Ethernet cable
- USB cable
- Power cord
- Support hardware for 19" cabinet

Prerequisites

You need a computer equipped with Internet browser. Firefox is recommended.

Step 1: Power the Unit

1. For safety reasons, if the line wiring exits the building, it is essential to ground the unit.

Note: Not connecting this device to grounding will void your warranty!

- a. Connect a grounding tab to the grounding screw on the rear panel.
- b. Using 12-16 gauge wire, connect the grounding tab to a reliable ground.



Figure 1: Grounding Screw on XV3000 Rear Panel

2. Connect Ethernet interface of the MCU-DSP card to the eth1 interface by using supplied Ethernet cable.
3. Connect the unit to the LAN via the eth0 interface.
4. Connect the power cord to the device and turn on the power using the switch on the rear panel.
The device startup process takes about 2 minutes. The startup time depends on the number of telephony ports installed in your XV3000 unit. You will see the "Loading..." notification on the Liquid Crystal Display (LCD) panel. When the booting process is near completion, "XORCOM" will appear on the LCD panel.

Step 2: Configure or Obtain the IP Settings for XV3000

Please note that eth1 interface and the MCU-DSP card Ethernet interface are pre-configured for 172.16.200.1 and 172.16.200.2 correspondingly. If the 172.16.200.nnn addresses are already in use on the LAN then it is necessary to change the IP addresses of the MCU-DSP and the eth1 interface in order to avoid conflict of IP addresses. Please refer to “XV3000 IP-PBX with MCU User’s Guide” for further details.

It is possible to configure or obtain the eth0 and eth1 IP settings by using either the LCD panel or a keyboard and a display monitor.

Method 1: Using the LCD Panel

a. How to obtain IP address received from DHCP server

The XV3000 will try to obtain the IP address for the eth0 interface from the DHCP server, if one is available. To check the received IP address by using the LCD panel:

Press the “Menu” button and then navigate as follows:

Status->SystemInfo->IP address

You will see the “IP address:” notification. Scroll down by using the down arrow navigation button to review the received IP addresses for the eth0 interfaces. If an interface failed to receive an IP address from the DHCP server the display will read: 0.0.0.0

b. How to configure a static IP address(es)

Press the “Menu” button and navigate to Settings->ManualNet. “Manual Net:” will appear on the display.

Press the down arrow button to navigate from one parameter to another. You will be able to define the following parameters:

- the default gateway (“Enter gateway”),
- two DNS servers (“Enter DNS1” and “Enter DNS2”)
- IP address and network mask for eth0 (“eth0 IP” and “eth0 Netmask”)

You can use the number buttons to enter the required IP addresses. Use the '*' (asterisk) button for the '.' (period) character.

Press the Enter button once you have defined all the required data. You will be prompted for confirmation.

Note: The Enter button should be pressed only once after all the parameters are defined. Use the down arrow and up arrow buttons to navigate between parameters.

Method 2: Using a keyboard and display monitor

1. Connect a keyboard and a display monitor.
2. Login to the XV3000 as follows:

User name: root

Password: akuo-kfo

Note: The default Elastix keyboard configuration is U.S. When entering the password the - (dash/hyphen) key is to the right of the 0 (zero) key, no matter which keyboard layout you are using.

a. How to obtain IP address(es) received from DHCP server

To see the IP addresses of the eth0 and eth1 interfaces use the command: `ifconfig -a`
As a result you'll get a block of data like this:

```
eth0      Link encap:Ethernet  HWaddr 38:60:77:21:11:D9
          inet addr:192.168.0.61  Bcast:192.168.15.255  Mask:255.255.240.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:835971 errors:0 dropped:0 overruns:0 frame:0
          TX packets:25179 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:71081837 (67.7 MiB)  TX bytes:6761865 (6.4 MiB)
          Interrupt:58 Memory:fe600000-fe620000

eth1      Link encap:Ethernet  HWaddr 38:60:77:21:11:DA
          inet addr:172.16.200.1  Bcast:172.16.200.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:24735549 errors:0 dropped:0 overruns:0 frame:0
          TX packets:30644197 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:2000
          RX bytes:2167528619 (2.0 GiB)  TX bytes:1477936510 (1.3 GiB)
          Interrupt:177 Memory:fe400000-fe420000
```

In this example the XV3000 eth0 interface received IP address 192.168.0.61. The eth1 interface has the default statically defined 172.16.200.1 address.

b. How to configure a static IP address(es)

Insert the required variables into `/etc/sysconfig/network-scripts/ifcfg-eth0`:

```
cat > /etc/sysconfig/network-scripts/ifcfg-eth0 <<EOF
DEVICE=eth0
BOOTPROTO=static
IPADDR=192.168.0.64
NETMASK=255.255.255.0
ONBOOT=yes
TYPE=Ethernet
EOF
```

If you also want to define the eth1 interface, then:

```
cat > /etc/sysconfig/network-scripts/ifcfg-eth1 <<EOF
DEVICE=eth1
BOOTPROTO=static
IPADDR=172.16.200.1
NETMASK=255.255.255.0
ONBOOT=yes
TYPE=Ethernet
EOF
```

Please note that eth1 is used for communication to the MCU-DSP board and it is rare case when you will need to change this address.

1. Define the default gateway in the `/etc/sysconfig/network` file:
`GATEWAY=192.168.0.1`
2. Define the DNS server in the `/etc/resolv.conf` file:
`nameserver 192.168.0.1`

3.

*Note: Correct network parameters settings are extremely important for normal PBX functionality. Always make sure that the 'localhost' is defined in the /etc/hosts file:
127.0.0.1 localhost.localdomain localhost*

Step 3: Configure the XV3000

Pre-configuration Parameters

All XV3000 models come pre-configured, as described below.

There is a conference room with the following parameters:

- room number = 100
- participant PIN = 1
- leader PIN = 2

MCU has access number 500 that is registered on the IP-PBX as a SIP extension.

Note: Participants desiring HD video support must call the MCU directly. For more information, see the XV3000 User's Guide section entitled "Users Call the MCU Directly".

For P/Ns XV3047, XV3055, XV3056 (devices with E1/T1 ports), then:

- a) The ports are configured as a trunk and assigned to channel group 0
- b) An outbound route is created with dial pattern "9|."

Configuring the MCU

In order to configure the MCU follow these steps:

1. From another computer's browser enter the `http://<XV3000-ip-address>/mcu`
2. User name **admin**, Password **admin**
3. Now you are in the XV3000 MCU setup screen.
4. Refer to the "XV3000 MCU User's Guide" for more details.

Configuring the IP-PBX

In order to configure the IP-PBX follow these steps:

1. From another computer's browser enter the XV3000 IP address (for example `http://192.168.0.69`)
2. User name **admin**, Password **palosanto**
3. Now you are in the XV3000 Elastix setup screen.
4. To get the updated user manual for Elastix, go to Elastix Web site <http://www.elastix.org/>

If you want to connect external Astribank devices to the XV3000, then you can perform the new hardware detection and automatic configuration procedure by running the following command in the Linux command line prompt:

```
/var/lib/asterisk/bin/detect_zap
```

Please be aware that detect_zap utility will overwrite the DAHDI channels configuration. For

example, FXS ports extension numbers etc.

Step 4: Protect the IP-PBX Against Unauthorized Access

Once you have **fully configured** the IP-PBX we highly recommend that you use the following procedures and applications supported in Elastix to protect your IP-PBX against unauthorized access:

Change the Default Password

- a) Login to the server (like for IP configuration)
- b) Run `change-passwords`. A wizard for changing MySQL and administrator passwords will start.

Change the Linux Password

The password for the Linux root user can be changed by using the Linux `passwd` command.

Activate the Fail2Ban Service on Boot Up

Run this command:

```
chkconfig fail2ban on
```

Activate the Elastix Firewall

Do this via the Elastix Web interface by accessing `Security-> Firewall`, and clicking the "Activate FireWall" button.

Unit Status LED (Light Emitting Diode) Indicators

The XV3000 is equipped with LED indicators on the front panel. XV3000 models equipped with E1/T1 module have a vertical array of four status indicators on the left side of the front panel (**Fig 3**).



Fig. 3 – E1/T1 Panel

LED Label	Indication
PHONE	This yellow LED indicates that the XV3000 is supplying the necessary voltage for analog or ISDN telephone sets. (Not used for E1/T1 module)
SYNC	This green LED is the synchronization. It blinks once the XV3000 is synchronized with the telephony modules.
ACTIVE	This red LED lights up when at least one PSTN / Analog phone is active. (Not used for E1/T1 module.)
ON	This green LED lights up when the XV3000 is powered.

E1/T1 Port Status LED (Light Emitting Diode) Indicators

E1/T1 port (**Fig. 3**): Solid green indicates that the port is configured as TE. Solid yellow indicates that the port is configured as NT. Two fast green or yellow blinks Indicates that E1/T1 layer 1 is active. One green or yellow blink indicates that ISDN layer 2 is active.

For more information about the unit status and port status LED indicators please refer to the **Astribank** manual at <http://www.xorcom.com/product-manuals/product-manuals.html>

Additional Functionality Supported by the LCD Touch Panel

Internal Flash Drive for Restore Functionality

In addition to the standard **external** Rapid Recovery disk-on-key, the XV3000 features an **internal** device as well, which is attached to the LCD panel inside the appliance.

Initially, factory defaults are stored on this device. Later on, you can create and store your own customized backups here as well.

To activate the “restore” image function from the internal flash drive:

1. Connect a monitor and keyboard to the server.
2. Switch off the server.
3. Switch on the server and press the Enter button on the LCD keypad until the "Loading from internal flash..." message appears on the LCD.
4. The Xorcom Rapid Recovery menu will be displayed on the monitor.

Additional LCD Panel Functions

Status

- System Info
 - IP Address (shows all configured IP addresses)
 - Hardware Status (CPU utilization, temperature, etc. -- not implemented yet)
- PBX Info
 - Blink port
 - Extension (blink Astribank port that corresponds to a given extension number)
 - Channel (blink Astribank port that corresponds to a given DAHDI channel number)
 - XPD (blink Astribank ports that correspond to a given DAHDI XPD number)
 - SPAN (blink Astribank ports that correspond to a given DAHDI SPAN number)
 - Active Calls (current number of active calls)
- TwinStar Status (DRBD role, DRBD connection status)
- RPS Status (status of power supplies in dedicated Redundant Power Supply unit, which provides redundant power to Astribanks connected to the XV3000 server)

Maintenance

- Asterisk restart
- DAHDI restart
- Server reboot
- Server power off

Settings

- DHCP (enable/disable DHCP on particular Ethernet interface)
- Manual Net (manual IP configuration)