

iProbe

Network Management Software



Document Version 1.1.1, June 2014
iProbe Version 1.1.2.4 or later

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We welcome feedback on any aspect of the Livewire products or this manual. In the past, many good ideas from users have made their way into software revisions or new products. Please contact us with your comments.

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All of our products are undergoing constant improvement. Periodic updates may become available - to determine if this is the case, visit our web site periodically, or contact us for advice concerning whether a newer release is more suitable to your needs.

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If you call Axia Support with a software question, we strongly recommend being near your computer when you call, so our Support Engineers can verify information about your configuration and the conditions under which the problem occurs. Please have your software license key handy.

Feedback is welcome

At Axia, we love to hear your feedback. If you find anything in this manual that you feel needs clarification or correction, please let me know: e-mail cnovak@AxiaAudio.com.

About This Manual

This manual covers setup and use of Axia iProbe software. It is assumed in this document that you are familiar with Livewire's basic concepts, as outlined in the companion *Introduction to Livewire: Systems Primer*.

If you have not done so, please review that material first. In it we explain the ideas that motivated Livewire and how you can use and benefit from it, as well as nitty-gritty details about wiring, connectors, and the like. Since Livewire is built on standard networks, we also help you to understand general network engineering so that you have the full background for Livewire's fundamentals. After reading *Introduction to Livewire* you will know what's up when you are speaking with gear vendors and the network guys that are often hanging around radio stations these days.

As always, we welcome your suggestions for improvement. Contact Axia Audio with your comments:

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Table of Contents

<i>Customer Service</i>	iii
<i>Warranty</i>	iv
<i>Service & Support</i>	iv
<i>About This Manual</i>	iv
<i>A Note From The Vice President of Axia</i>	vii
Chapter One: Introduction / Installation	1
Introduction	1
<i>Features</i>	1
<i>System Requirements</i>	1
Installation & Initial Setup	2
<i>iProbe Setup</i>	2
<i>Starting iProbe</i>	2
<i>Device Lists</i>	3
Configuration	4
<i>Syslog</i>	4
<i>Device Configuration Archive</i>	4
<i>Firmware Updates</i>	4
<i>Log Files</i>	4
What's Next	4
Chapter Two: Operation	5
<i>Device List</i>	5
<i>Firmware Versions</i>	5
<i>Updating</i>	5
<i>Browsing</i>	5
<i>Backup</i>	6
<i>Restore</i>	6
<i>Syslog</i>	7
<i>Export Data</i>	7
<i>iProbe Tasks</i>	7
<i>iProbe Log Viewer</i>	7
<i>iProbe Audio Monitor – iPlay</i>	8
<i>BOOTP Configuration Tool</i>	8
<i>Using Auto-Restore with BOOTP</i>	9
Appendix A: iProbe and Proxy Servers	10
Appendix B: Warranty	11

A Note From The Vice President of Axia

2013 marks a banner year for Axia — this year marks the first decade of the Connected Studio.

In retrospect, it's hard to believe it's been 10 years since a start-up division of Telos grabbed everyone's attention with a radical idea about building radio studios using Ethernet. At a time when "state of the art" meant discrete digital audio, and a routing switcher was something only the richest stations could afford, Axia shocked everyone with the idea that studio peripherals from the console to the audio processor could be networked, and that everyone could have the benefits of a routing switcher — for about a third of the cost of traditional technology.

When we launched Axia, Telos founder Steve Church made a prediction. "Three things will happen," Steve told us. "First, people will say that 'it will never work.' When they're proven wrong, they'll say 'It works, but you don't need that.' And finally, as they see Axia becoming successful, they'll say 'IP-Audio? We do that too!'"

Steve, as always, was right on the money. In 10 years, Axia Livewire has become the world's most popular IP-Audio networking technology, and our mixing consoles are the world's best-selling — they're on-air in over 4,000 studios, and counting. You'll find Axia equipment everywhere: at privately-owned stations, and large clusters run by big conglomerates. At established public broadcasters, and at newly-licensed International stations. At government broadcast facilities, and podcast studios. Needless to say, we're humbled by the trust broadcasters place in us — and by your enthusiasm!

Being first with new technology is nice, but we've never been content to rest on our laurels. So the Telos R&D team continues to innovate and expand the scope

of IP-Audio. Axia consoles are the first and only IP-Audio consoles with a pre-configured network switch built in, to save broadcasters the effort and expense of procuring and programming third-party switches. Our compact xNode AoIP interfaces feature one-button setup, and can run on mains power or Power over Ethernet (PoE) for flexibility and redundancy. We've even developed our own zero-configuration Ethernet switch for Livewire — xSwitch — to make deploying IP-Audio easier than ever.

More than 45 Livewire partners believe in the vision of the Connected Studio too. Collectively, they make dozens of hardware and software products (ranging from telephone systems to audio processors to program automation) that interoperate directly with Axia networks via Ethernet — making the connections "smart", and eliminating the need to purchase audio conversion devices. We've also partnered with the high-performance audio standard RAVENNA to expand broadcasters' networking options even further. And there are a lot more great new ideas in the cooker — so watch this space!

In the final analysis, Axia's success isn't due to our efforts. It's you, the broadcast professional, who has embraced our vision, used our technology in ways we never dreamed of, and raved about Axia products to everyone who'd listen. We owe you a huge debt of thanks. And we promise to never stop trying to amaze and delight you.

So here's to the next 10 years.
Onward and upward!

Marty Sacks
Vice President, Axia Audio



I came, saw, conquered,

But now I must write it down.

Software, rescue me!

Chapter One:

Introduction / Installation

Introduction

Axia iProbe provides management, support, and control of Axia Control Surfaces, Axia Nodes and other supported Livewire devices in a friendly, unified environment. iProbe is a stand-alone application that runs on the Windows XP/2000 Professional/Vista platforms.

Axia networked audio devices are managed using a standard Web browser to view, configure, and administer each device. iProbe helps simplify this process by scanning and collecting all the information and presenting it a graphical interface. You will still have the ability to simultaneously use your Web browser for other purposes.

This manual covers the features of iProbe releases up to version 1.1.2.4. It is written with the assumption that you have read the *Introduction to Livewire: Systems Primer* document available at www.AxiaAudio.com/tech/, and have an Axia Livewire system in place.

Features

Axia iProbe assists you by providing key features to manage and support your Axia Livewire system from a single application.

- **Discovery** - The ability to scan the Axia Livewire network for Control Surfaces, Nodes (AES, Analog, GPIO), and Engines.
- **Firmware Version** – The ability to display the current firmware versions running on the Control Surfaces, Nodes (AES, Analog, GPIO), and Engines.
- **Updating** – The ability to update the firmware remotely. iProbe gives you the ability to group similar devices and update them all.
- **Browsing** - iProbe displays all the devices in your Livewire system. The application launches a web

browser giving you direct access to the device. There is no need to type the device IP address into your browser.

- **Backup** – Backup in any system is critical. iProbe gives you the ability to back up the configuration of the individual or all devices within your Livewire system. iProbe backs up your entire system in one central location.
- **Syslog** - The IT world is familiar with Syslog and since Livewire is a audio network we've included the ability to send messages to your Syslog server.
- **Data Export/Documentation** - Here you have the ability to export your Axia system data into an HTML format or text for printing. This allows you to have a hard copy or a web page for future reference. You can also export to a tab-delimited text format for importing into other documents or spreadsheets. Exporting in XML format to other applications is also available.

System Requirements

Axia iProbe must be used on the Windows Operating System with the .NET 2.0 (or later) Framework installed.

System requirements:

- Windows XP Professional
- Windows 2000 Professional
- Windows Vista
- Microsoft Internet Explorer version 6 or 7
- 100Base-T or higher wired network adaptor
- sound card
- Internet access enabling iProbe to download firmware updates from our Axia FTP server.

Note: Current versions of iProbe can be installed on a PC that is running the Axia IP-Audio driver. Prior to iProbe improvements with version 1.1.1 rev 5, Axia did not recommended installing iProbe on a PC that was running the Axia IP-Audio Driver for Windows.

Installation & Initial Setup

iProbe Setup

iProbe installation and setup is similar to other Windows applications. iProbe includes a setup Wizard to walk you through the necessary steps to install the application. Insert the CD-ROM in your drive and, if Auto-play is turned on, the Setup wizard will start. If your PC does not allow the autorun.inf to begin, browse the drive containing the CD and double-click on Setup.exe file.

Setup requires the Microsoft .NET 2.0 framework to be installed. If .NET is not installed, the iProbe setup application will require you to install .NET. You may need Internet access as the .NET Framework installer package downloads from the Microsoft Web Servers.

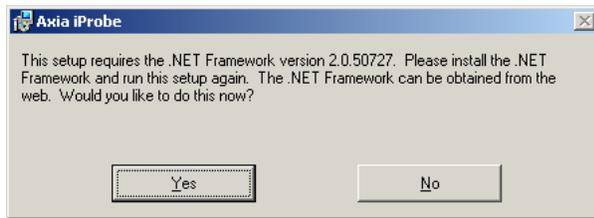


Figure 1-1: Nothing but .NET

After satisfying the .NET requirements, you'll be asked to select a destination folder for the iProbe application. The default folder is **C:\Program Files\Axia\Axia iProbe**. The iProbe application is configured to run for everyone who uses the PC.



Figure 1-2: The Setup Wizard

The next few steps verify the configuration for the setup process. Click NEXT to continue installation. The

installation is complete with the screen shown in Figure 1-3.

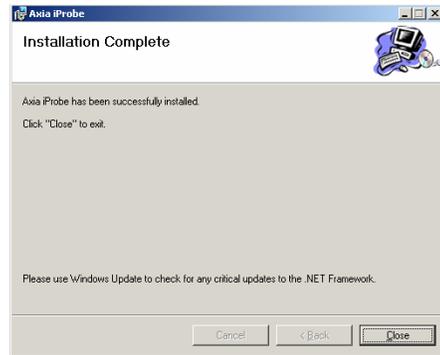


Figure 1-3: You're done.

Starting iProbe

Axia iProbe can be started via **Start -> Program Files -> Axia -> iProbe**.

Scanning will begin immediately. You will notice that the Tasks tab displays the actions that are being taken by iProbe “behind the scenes”. Soon you will have a fully populated display of every device on your Axia Network.

Note: If you do not see devices and their properties listed, make sure that Internet Explorer is installed on your system and that your Windows Firewall is either OFF or has an exception for iProbe. If your network uses a proxy server, please see Appendix A or contact your network administrator for assistance.

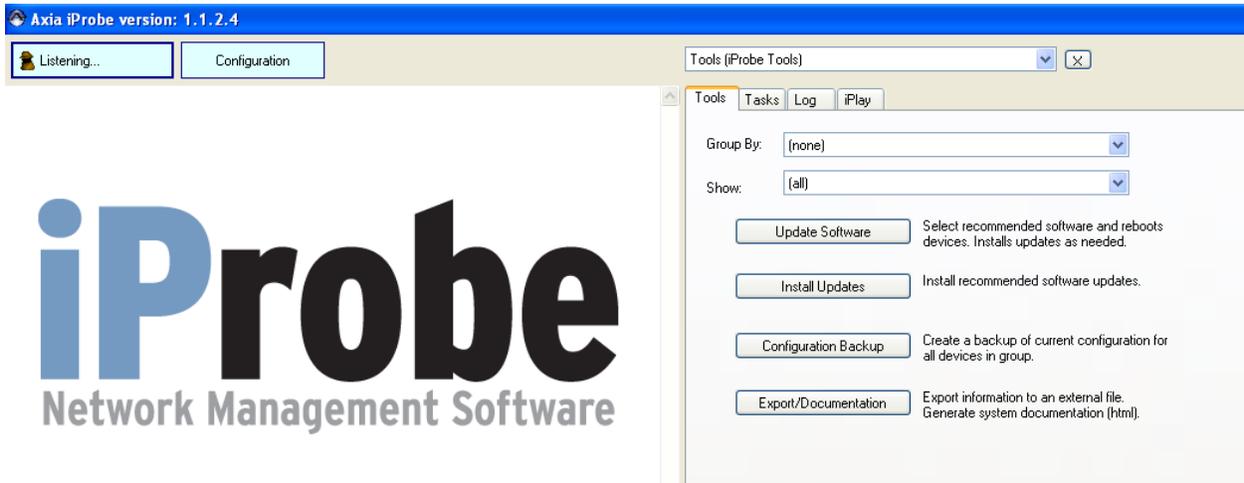


Figure 2-5: Initial startup screen

Device Lists

Once Scanning is complete, the list of devices will appear. This is where iProbe provides the benefit to manage and support your Axia Livewire system. iProbe automatically scans the network for devices and builds the list based on the discovered devices information.

Using the **Device Type** list allows you to display the devices you wish to review or update. For example, if you need to know the firmware versions of all of your Studio Engines, you would select Group By ->Device Type and then select Studio Engine from the Show dropdown menu. You will then see a filtered device list displaying only your system's Studio Engines and no other Axia devices.

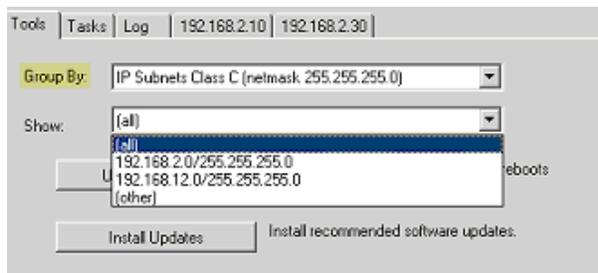


Figure 1-4: Device List by Subnet

You can customize your view by grouping and/or filtering devices based on the Class “C” subnet, as shown in Figure 1-4 or, you can list by type, as shown in Figure 1-6.

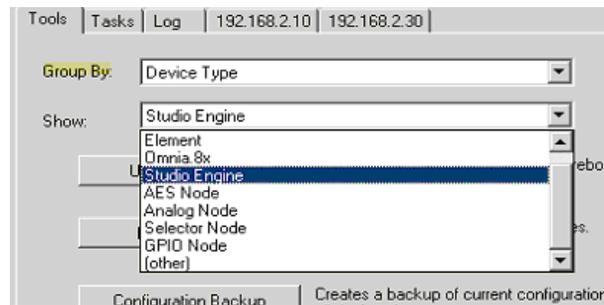


Figure 1-6: Device list by type.

Configuration

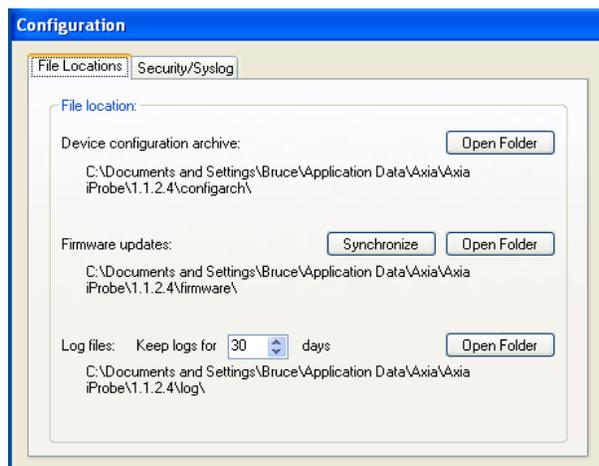


Figure 1-7: Configuration window

iProbe configuration is a necessary step to ensure the location of your archives, firmware updates, and log files match the folders on the PC. The SYSLOG server information is entered here too (See the Syslog section in Chapter 2 for more information).

Syslog

Syslog is third party software that receives messages from devices that may have potential issues needing to be resolved. iProbe allows you to send the messages (“Traps”) to a designated Syslog Server.

Device Configuration Archive

This folder contains a backup or archive of the devices configurations.

Firmware Updates

The **Open Folder** option takes you to a central location for iProbe to use when uploading firmware to an Axia device. Place all firmware update packages in the folder you specify here.

iProbe also provides you with the ability to compare your firmware updates to the ones located on the Axia FTP site (pre-configured in iProbe). The **Synchronize** button opens a “Firmware Download” window to easily compare the files along with the ability to download them from the Axia FTP server.

Click on the **Download All** button to begin the process of copying the files to your local directory.

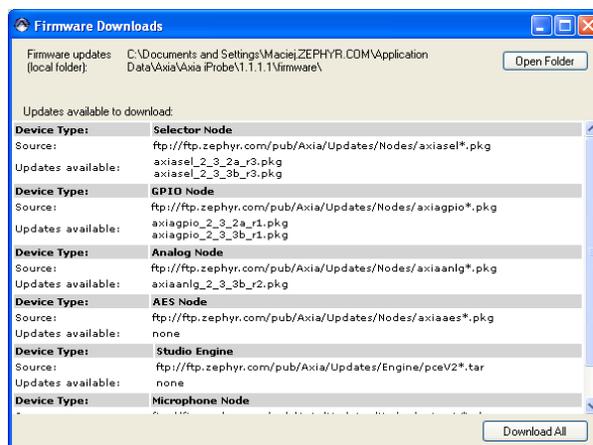


Figure 1-8: Firmware Download Window

Log Files

This folder keeps the log files for each device. The default time period is 30 days. These XML log files use a year/month/day naming convention.

What’s Next

In this chapter, you’ve installed and done initial setup of iProbe. In Chapter Two, we’ll learn how to navigate and operate the program.

Chapter Two:

Operation

Axia iProbe begins scanning the network for Livewire devices upon startup. Once the devices are listed, you can use the drop-down menu to group them by network or device type. Grouping them by the network allows you to view all the Axia control surfaces and audio nodes sorted by IP address. Grouping by device type will display all similar devices together. Either option allows you to easily view the firmware, settings of the device, and allows you to update like devices efficiently.

Device List

After starting iProbe, the device list screen becomes the primary screen for management. All the devices scanned and discovered are listed in this window.

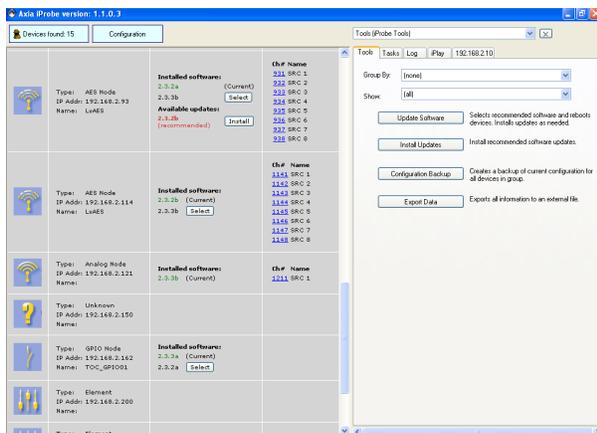


Figure 2-1: Device List Screen

This window allows you to quickly see how many devices were discovered, what firmware the device is running and if there are any updates, and provides a list of enabled audio sources on each device.

Devices in the view can be grouped and filtered using IP address subnet class “C”. iProbe automatically builds a list of sub-networks based on discovered device information. Devices can be also grouped and filtered by type.

This window also provides a way to determine if there are any devices on the Livewire network that may have duplicate information such as a source ID number. At the bottom of the device list screen, iProbe displays any errors it discovers. It is important to resolve any duplicate stream numbers (source ID’s) as this condition will compromise the performance of your system.

Firmware Versions

If there is an updated version of a device stored in the Firmware Updates directory, iProbe will display the latest version in the device list. This will allow you to determine which devices need to be updated.

Updating

Axia Control Surfaces and Audio Nodes are easy to update on their own by using a standard web browser. However, there are times when one might prefer to update all like devices at the same time. iProbe simplifies the process by allowing you to choose the Group devices and then clicking Install Updates.

Installing the software updates places the package in Bank 1 of the device. You must choose the SELECT button for each device to change the firmware version. Firmware will be moved from bank 1 to 0 (“Commit”) if the device is already operating from bank 1.

Browsing

Select a device from the list and click on the device’s icon to bring up its menu. You may choose from: **Open Configuration UI**, **Refresh Device Information**, **Configuration Backup**, or **Configuration Restore**.

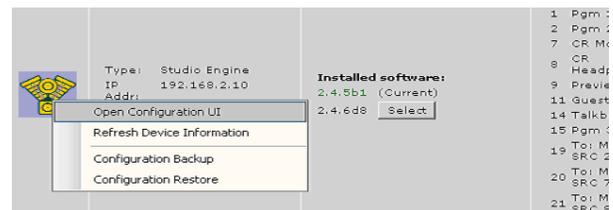


Figure 2-2: Configuration User Interface

Select **Open Configuration UI** to launch a Web interface in a separate tab within iProbe. You will see something similar to Figure 2-3. Note that Microsoft Internet Explorer is used internally for this operation. Be

sure you have IE configured with Java enabled so you can view meters and GPIO status. Security settings of Microsoft Server 2003 may be changed from default to minimize frustration with trusted sites.

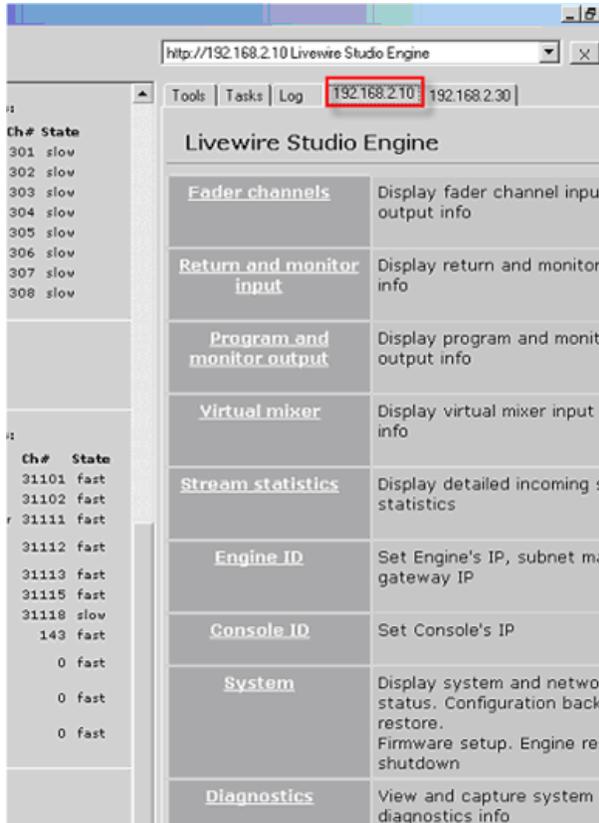


Figure 2-3: Device Information

Backup

Backup is critical to any technical operation and the Axia Livewire network is no different. Backing up the devices' configurations provides a way to quickly recover in the event of a failure. Backing up a device can be accomplished one-at-a-time or in groups. To backup an individual device, simply select the **Configuration Backup** option when you click on the device's icon

The **Tools** tab provides a way to group devices, or show only certain types of devices should you wish to do so. Once your devices have been selected, click on the **Configuration Backup** button to run the backup tasks.

The Configuration Backup task will be scheduled for

immediate execution. Configuration file(s) will be saved in "Device Configuration Archive" directory. You will notice the script execution and backups taking place on the **Tasks** tab while the configuration backups are running.

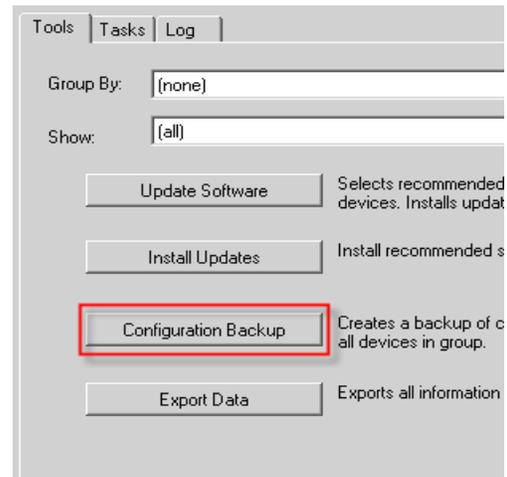


Figure 2-4: Configuration Backup

The backup file name for each device is generated automatically in the following format:

YYYY-MM-DD_hh-mm [Device Type] IPAddress.xml

In the case of an AES node backed up in January of 2009, your configuration backup would be:

2009-01-15_16-19 [AES Node] 192.168.2.114.xml

Restore

Restoring a file or configuration provides a way to recover quickly in the event of a device failure or configuration error. As you might expect, one must have followed and completed the **Backup** operation in order for the **Restore** function to work.

To restore a configuration, select the device and click on its icon to bring up the menu. Select **Configuration Restore**. iProbe will display the files available to restore based on the IP address and backups performed. You can now choose which parameters and the specific device archive you wish to restore.

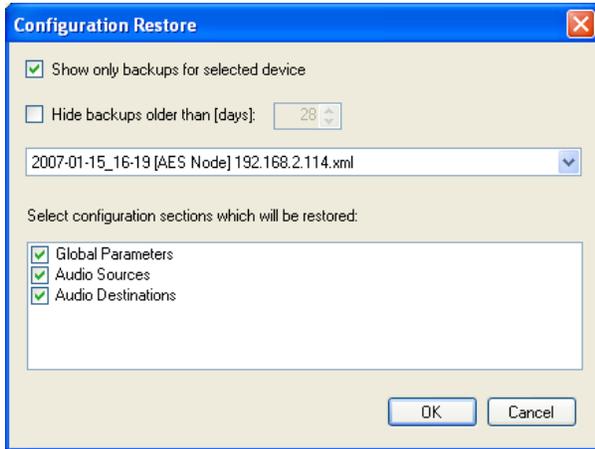


Figure 2-5: Configuration Restore

Syslog

Understanding what is occurring on the devices within a network is an important part of the daily maintenance and trouble-shooting of a system. Axia Livewire is no different as your on-air operation is mission critical.

iProbe adds the ability to monitor and send alarms or “Traps” to a Syslog server residing on your network. The Syslog server is third party software (there are lots of free syslog servers available) that receives these alarms and stores them for future viewing and reference.

The benefit of such a system is when your Axia devices and your network devices log these Traps to the same location, you can determine if there is a more than one issue, failure, or action item that needs to be addressed.

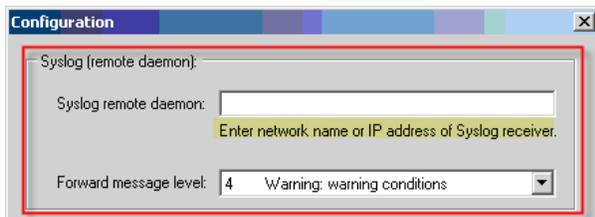


Figure 2-6: Syslog

Under the Configuration section, enter the IP address of the Syslog server to send the Trap messages.

Export Data

iProbe allows you to export data to view, archive or use in other applications. Data can be exported by saving the information to an HTML file, two different types of tab-delimited text file or XML format.

iProbe Tasks

iProbe can execute multiple tasks simultaneously. Status of scheduled and running tasks is shown in the “Tasks” tab. You will see lots of activity here when iProbe is launched or when it is performing configuration backups. Figure 2-7 provides an example of what you might see when various tasks are running.

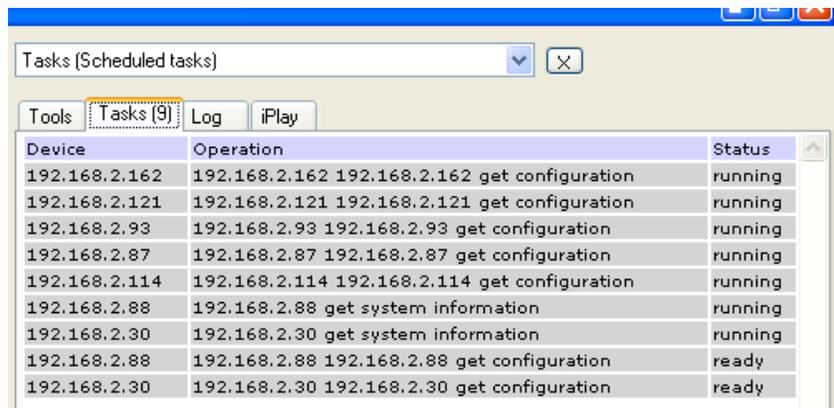


Figure 2-7: iProbe Tasks

iProbe Log Viewer

The **Log Viewer** tab contains detailed information about tasks which have been executed since the application started. This is a great place to verify that backups are taking place and there are no errors.

The daily log files are stored in the folder that is defined under the Log Files section in the Configuration.

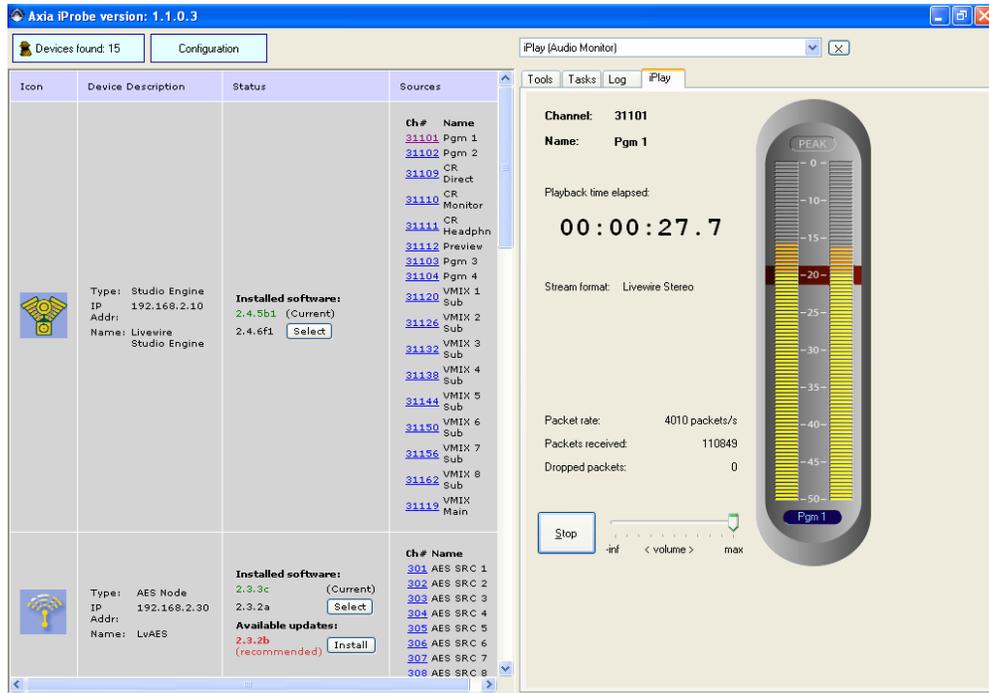


Figure 2-8: iPlay interface

iProbe Audio Monitor – iPlay

The iPlay module gives you instant access to audio channels on your Livewire network. This allows you to easily listen to and verify the levels of a given source.

To start monitoring, click on channel number listed in “Sources” column in the device list screen. The iPlay module provides basic streaming information, accurate audio metering and playback volume control as shown in Figure 2-8. Note that Windows PC’s will have no problem playing Standard streams but may have difficulty with Live streams due to their very high bit rate.

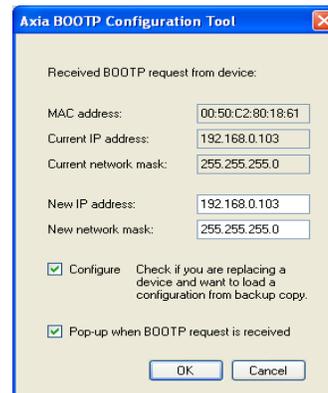


Figure 2-9: BOOTP popup window

BOOTP Configuration Tool

This tool allows basic IP configuration of many Axia devices without displays. When iProbe is running, the BootP window will pop up when a user presses the **ID** key on the front panel of any Axia Audio Node:

If “Pop-up when BOOTP request is received” is not checked, the “Spy” indicator in the main iProbe window will turn red, as shown in Figure 2-10: In this case, click on the red Devices Found box to view the BOOTP configuration window for the new device. Most users prefer to have the BOOTP popup enabled to save a few clicks.



Figure 2-10: The Spy indicator

Click the “Spy” indicator and BOOTP will open.

Using Auto-Restore with BOOTP

The BootP function of iProbe now has an advanced feature that will save you lots of time if you ever have to replace an Axia device and you want to quickly restore the previous configuration to the new replacement unit.

iProbe “remembers” the configurations of devices with specific IP addresses and will give you a chance to automatically restore a backup to a device at the same time you assign an IP address to that replacement device.

Here are the steps to follow. We have used an “off the shelf” analog node for this example.

1. Connect the replacement node to the Axia LAN and make sure iProbe is running.
2. When the node has booted up, press the “ID” button on the front panel. This will cause the BootP pop-up as shown. Note the existing IP address of 0.0.0.0 for a new node that is completely unconfigured.
3. Enter the desired IP address and subnet mask for the new node.

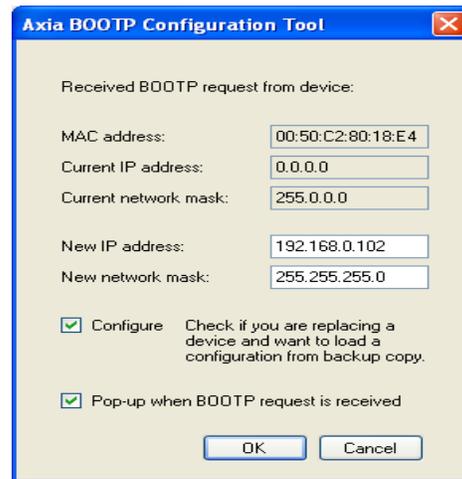


Figure 2-11: BOOTP popup window

4. Click “OK”. When prompted, select the backup you want to restore. If several backups exist, you will probably want to restore the most recent backup from the drop-down list.

That’s all there is to it. You will now see the fully configured node as shown in Figure 2-12 below.

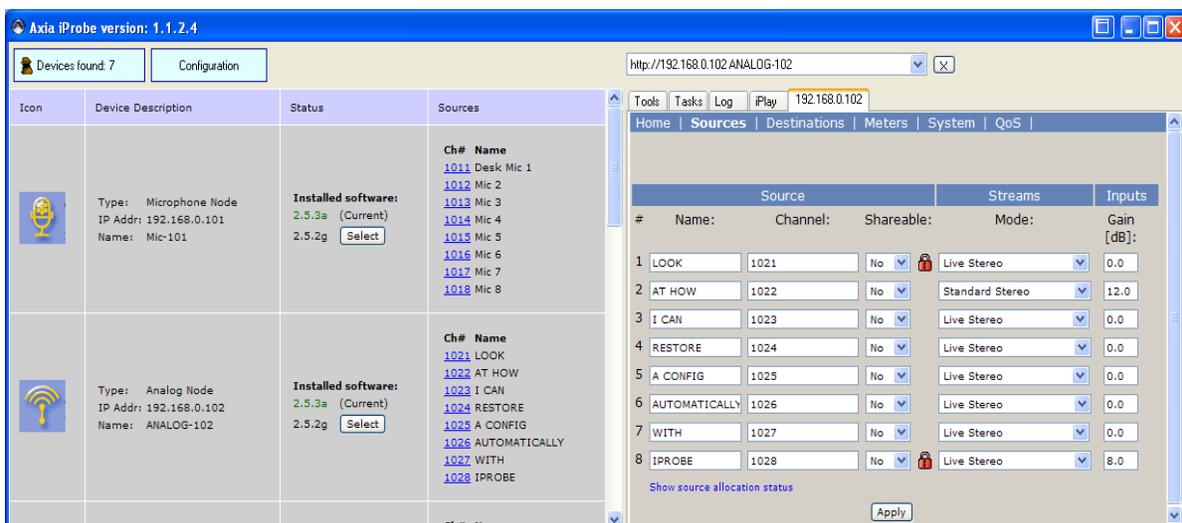
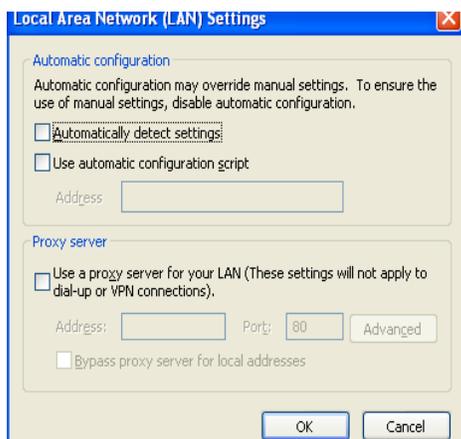


Figure 2-12: iProbe showing configuration restored to Analog Node 102

Appendix A: iProbe and Proxy Servers

The Problem: In highly secure environments such as educational institutions, we sometimes find proxy servers employed to control web access by users. This may cause problems since iProbe uses the web browsing part of Microsoft Internet Explorer as a means of communicating with the Axia devices. When IE is directed to a proxy, iProbe may be prevented from communicating with the Axia devices. In this case you will see the IP addresses of the devices since they are advertising their presence but iProbe will not be able to get any more information than that.

The Solution: It is necessary to disassociate IE with the proxy on the PC running iProbe. On the *Tools* menu in Internet Explorer, click *Internet Options*, click the *Connections* tab, and then click *LAN Settings*. Under *Proxy server*, deselect the *Use a proxy server for your LAN* check box.



Background: Here is a bit of background on proxy servers for those of us who are not IT professionals.

A **proxy server** is a server (a computer system or an application) which services the requests of its clients by forwarding requests to other servers. A client connects to the proxy server, requesting some service, such as a file, connection, web page, or other resource, available from a different server. The proxy server provides the resource by connecting to the specified server and requesting the service on behalf of the client. A proxy server may optionally alter the client's request or the server's response, and sometimes it may serve the request without contacting the specified server. In this case, it would 'cache' the first request to the remote server, so it could save the information for later, and make everything as fast as possible.

A content-filtering web proxy server provides administrative control over the content that may be relayed through the proxy. It is commonly used in commercial and non-commercial organizations (especially schools) to ensure that Internet usage conforms to acceptable use policy.

A content filtering proxy will often support user authentication, to control web access. It also usually produces logs, either to give detailed information about the URLs accessed by specific users, or to monitor bandwidth usage statistics. It may also communicate to daemon based and/or ICAP based antivirus software to provide security against virus and other malware by scanning incoming content in real time before it enters the network..

Appendix B: Warranty

Telos Alliance Limited Warranty

This Warranty covers “the Products,” which are defined as the various audio equipment, parts, software and accessories manufactured, sold and/or distributed by or on behalf of TLS Corp. and its affiliated companies, collectively doing business as The Telos Alliance (hereinafter “Telos”).

With the exception of software-only items, the Products are warranted to be free from defects in material and workmanship for a period of five (5) years from the date of receipt of such Product by the end-user (such date of receipt the “Receipt Date”). Software-only items are warranted to be free from defects in material and workmanship for a period of 90 days from the Receipt Date. Telos will repair or replace (in its discretion) defective Products returned to Telos within the warranty period, subject to the provisions and limitations set forth herein.

This warranty will be void if the Product: (i) has been subjected, directly or indirectly, to Acts of God, including (without limitation) lightning strikes or resultant power surges; (ii) has been improperly installed or misused, including (without limitation) the failure to use telephone and power line surge protection devices; (iii) has been damaged by accident or neglect. As with all sensitive electronic equipment, to help prevent damage and or loss of data, we strongly recommend the use of an uninterruptible power supply (UPS) with all of our Products. Telos products are to be used with registered protective interface devices which satisfy regulatory requirements in their country of use.

This Warranty is void if the associated equipment was purchased or otherwise obtained through sales channels not authorized by Telos.

EXCEPT FOR THE ABOVE-STATED EXPRESS WARRANTY, TELOS MAKES NO WARRANTIES, EXPRESS OR IMPLIED (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE).

In no event will Telos, its directors, officers, employees, agents, owners, consultants or advisors (its “Affiliates”), or authorized dealers or their respective Affiliates, be liable for incidental or consequential damages, or for loss, damage, or expense directly or indirectly arising from the use of any Product or the inability to use any Product either separately or in combination with other equipment or materials, or from any other cause.

In order to invoke this Warranty, the Product must be registered via Telos’ website (found at: <http://telosalliance.com/legal/warranty>) at time of receipt by end-user and notice of a warranty claim must be received by Telos within the above stated warranty period and warranty coverage must be authorized by Telos. Contact may be made via email: support@telosalliance.com or via telephone: (+1) 216-241-7225. If Telos authorizes the performance of warranty service, the defective Product must be delivered to: Telos, 1241 Superior Avenue, Cleveland, Ohio 44114 or other company repair center as may be specified by Telos at the time of claim.

Shipping Costs and Warranty Service:

If the date the customer's notice of warranty claim is received by Telos (such date the "Warranty Claim Notice Date") is within the first 90 days following the Receipt Date, Telos will pay the costs of shipping such warranted Product to and from the end user's location, and the cost of repair or replacement of such warranted Product.

If the Warranty Claim Notice Date occurs after the first 90 days following the Receipt Date and before the end of the second (2nd) year, the customer will pay the freight to return the warranted Product to Telos. Telos will then, at its sole discretion, repair or replace the warranted Product and return it to the end user at Telos' expense.

If the Warranty Claim Notice Date occurs between the end of the second (2nd) year following the Receipt Date and the completion of the fifth (5th) year, the customer will pay the costs of shipping such warranted Product to and from the end user's location. Telos will then, in its sole discretion, repair or replace the warranted Product at Telos' expense. Telos also reserves the right, if it is not economically justifiable to repair the warranted Product, to offer a replacement product of comparable performance and condition direct to the customer at a discounted price, accepting the failed warranted Product as a trade-in.

The end user will in all cases be responsible for all duties and taxes associated with the shipment, return and servicing of the warranted Product.

No distributor, dealer, or reseller of Telos products is authorized under any circumstances to extend, expand or otherwise modify in any way the warranty provided by Telos, and any attempt to do so is null and void and shall not be effective as against Telos or its Affiliates.

Out of warranty units returned to the factory for repair may be subject to a \$500 evaluation fee, which fee must be prepaid prior to shipping the unit to Telos. If no repairs are required, the \$500 fee will be retained by Telos as an evaluation charge. If repairs are required, the \$500 fee will be applied to the total cost of the repair.



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