



## Upgrading Axia Audio Equipment to “Layer 3” Software

8 December 2005, Cleveland Ohio, USA

### Overview

Effective immediately, all Axia Audio Nodes, GPIO Nodes, Studio Engines and Element/SmartSurface studio controllers are being shipped from the factory with new software employing Ethernet Layer 3 switching protocols. Previously, Axia equipment used Ethernet Layer 2 protocol.

Ethernet Layer 3 supports packet switching throughputs in the millions of packets per second (pps), a dramatic improvement over Layer 2 switching. In addition, one of the fundamental capabilities of Layer 3 switches is the creation of routing tables that automatically adjust themselves to the ever-changing network topologies caused by additions and deletions to the network. Dynamic routing protocol technology is used in Layer 3 switches and routers to populate these Layer 3 routing tables. Axia has chosen to move all IP-Audio operations to Layer 3, a major performance upgrade.

If you are installing a new Axia IP-Audio network, you do not need to do anything to enjoy the benefits of Ethernet Layer 3 switching; all of your Axia equipment is configured to use Layer 3 as delivered.

If, however, you are adding a newly-delivered Node or other Axia hardware to an existing Axia network, you must choose *before you plug it in* whether to make your existing network compatible with your new hardware — or to make your new hardware compatible with your network. All your active equipment must run either Layer 2 *or* Layer 3 software — **they cannot be mixed.**

Axia recommends that your network be upgraded to use Ethernet Layer 3 switching, but ultimately, the choice is yours.

### Options

If you are adding newly-purchased Axia equipment to an existing IP-Audio network running Layer 2 software, you have two choices:

1. Upgrade your existing installed network to new, Layer 3 compliant software. To do this, you will need to apply a software update to each piece of Axia equipment individually. This will result in your IP-Audio network being off-line for the duration of the update process, which could be between 30 and 60 minutes, depending upon the size of your network.

We realize that this is a big (but not complicated) job. Should you wish to upgrade, Axia support is here to help; we will gladly be available to guide you both before and during the upgrade process via telephone (+1-216-241-7225) and/or e-mail ([support@AxiaAudio.com](mailto:support@AxiaAudio.com)).

2. Switch the newly-acquired Axia hardware to previous, Level 2-compliant software. Each Axia Node or Surface is now shipped with the latest Layer 3 software loaded in Bank “0” (the active bank) of its internal memory, and previous Layer 2 software in Bank “1”. Switching between the two can be accomplished during initial configuration, prior to connecting the new equipment to your existing network.

## Procedures

### **Upgrading an existing IP-Audio Network to Layer 3 software**

As we've already mentioned, Axia is ready to support you in every way possible should you choose to upgrade your existing network to new Layer 3 software. **Contact us before your upgrade** at +1-216-241-7225, or e-mail [support@AxiaAudio.com](mailto:support@AxiaAudio.com) and we will gladly walk you through the process.

Upgrading your IP-Audio network to Layer 3 software necessitates taking your network off-air for 30 to 60 minutes while the individual software updates are performed, so choose an appropriate time and prepare an alternate program source to avoid an interruption of service.

### **Step 1**

Prepare for the upgrade by downloading all of the new Layer 3 software from the Axia servers. The following list comprises the current upgrade files at the time of writing (10/2005). Contact Axia Support prior to beginning your upgrade to determine if more recent firmware is available.

AES Node:

[ftp://ftp.zephyr.com/pub/axia/Updates/AES%20Node/axiaaes\\_2\\_0\\_1d\\_r2.pkg](ftp://ftp.zephyr.com/pub/axia/Updates/AES%20Node/axiaaes_2_0_1d_r2.pkg)

Analog Node:

[ftp://ftp.zephyr.com/pub/axia/Updates/Analog%20Node/axiaanlg\\_2\\_0\\_1\\_r2.pkg](ftp://ftp.zephyr.com/pub/axia/Updates/Analog%20Node/axiaanlg_2_0_1_r2.pkg)

Mic Node:

[ftp://ftp.zephyr.com/pub/axia/Updates/Mic%20Node/axiamic\\_2\\_0\\_1\\_r1.pkg](ftp://ftp.zephyr.com/pub/axia/Updates/Mic%20Node/axiamic_2_0_1_r1.pkg)

GPIO Node:

[ftp://ftp.zephyr.com/pub/axia/Updates/GPIO%20Node/axiagpio\\_2\\_0\\_1\\_r1.pkg](ftp://ftp.zephyr.com/pub/axia/Updates/GPIO%20Node/axiagpio_2_0_1_r1.pkg)

Router Selector:

[ftp://ftp.zephyr.com/pub/axia/Updates/Router%20Node/axiasel\\_2\\_0\\_1\\_r3.pkg](ftp://ftp.zephyr.com/pub/axia/Updates/Router%20Node/axiasel_2_0_1_r3.pkg)

SmartSurface:

[ftp://ftp.zephyr.com/pub/Axia/Updates/Surface/ss\\_ln\\_2\\_49\\_63\\_inst.tgz](ftp://ftp.zephyr.com/pub/Axia/Updates/Surface/ss_ln_2_49_63_inst.tgz)

Studio Engine:

<ftp://ftp.zephyr.com/pub/Axia/Updates/Engine/pceV2-4-2m2.tar>

Element CPU: *Contact Axia Support.*

Download these files and place them into an easily accessible directory on the computer you will be using to administer the updates.

**IMPORTANT NOTE:** The files listed above are current as of November 30, 2005. Because software is periodically updated, please check with Axia Support to determine if newer software versions have become available.

## Upgrading Axia Equipment to “Layer 3” Software – Page 3

### Step 2

Disconnect the Ethernet connection of each Audio Node, Studio Engine and SmartSurface on your network. (Element control surfaces do not have separate Ethernet connections, so disconnecting their GPIO/Power Supply is all that’s needed.)

### Step 3

Choose the first Axia device (Audio Node, GPIO, SmartSurface, etc.) that you wish to update.

- If you are using a PC connected to your nearest switch to perform the updates, reconnect this device to the network. If you don’t have convenient access to the local switch, you may use a crossover cable from your computer to the device.
- Open a Web browser on your update PC and type the device’s IP address into the address bar.
- Once the device’s home page appears, choose the “System” link. You’ll see a page similar to the one below.

The screenshot displays a web interface for configuring an Axia device. It is divided into three main sections:

- IP settings:** Contains input fields for Host name (MICNODE1), Network address (10.2.5.203), Netmask (255.255.0.0), Gateway (255.255.255.25), and NTP server (255.255.255.25). Each field has a small tooltip with instructions.
- User password:** Contains fields for New password (masked with asterisks) and Retype new password (masked with asterisks).
- Firmware version:** Shows the current hardware revision (AXIA Microphone Node (rev. 1)) and two firmware options: Bank 0 (ver. 2.0.1) and Bank 1 (ver. 1.3.7). The Bank 1 option includes an "update:" field and a "Browse..." button. A warning message states: "Warning: System will reboot after changing current bank." An "Apply" button is at the bottom.

- In the section titled “Firmware Version,” place your cursor in the “update” box and click the “Browse” button. Navigate to the directory in which your update files are saved and select the file that matches the type of hardware you are updating. The selected update file will be shown in the “update” box.
- Click the “Apply” button.
- The software will load and the computer’s browser will automatically refresh, updating the software load progresses. When complete, the device’s Web page will show the new software loaded into Bank 1.

**Important:** In rare, cases, the new software may not properly convert the destination channel fields to actual channel numbers, instead displaying the channel number’s equivalent Multicast IP Address. These addresses will work, but you will want to change these addresses back to the actual Livewire channel number – so you will need to note each Destination’s source channel and output type setting BEFORE you

## Upgrading Axia Equipment to “Layer 3” Software – Page 4

reboot. If you are updating an Audio Node, switch to the node’s “Destination” page and note the channels assigned to each Destination output (or take a screenshot) so that you can re-enter the information if needed.

- Click on the radio button next to “Bank 1” and click the “Apply” button to use the new software you’ve loaded. The device will reboot, and when the browser refreshes, you’ll see that the new software is now in use.
- That’s all there is to it. Disconnect the device from the network and repeat this process with your other Axia devices.

After updating each studio’s software, enter the IP address of your Studio Engine in your Web browser. A new field has been added to the “Engine ID” page to indicate whether the Engine is communicating with a SmartSurface or an Element console. Double-check to make sure this option is set properly.

### **Changing your new Axia device to work with your Layer 2 network**

All new Axia hardware is now shipping with Layer 3 software in Bank 0 of its internal memory, and the previous Layer 2 software in Bank 1. If you do not wish to update your previously installed network to Layer 3 software, you must change the active software in your new Axia device to Layer 2.

#### **Step 1**

Unpack your new device connect it to a local PC using a crossover cable. Apply power. Assign the device an IP address using the instructions found in your device’s User Manual.

#### **Step 2**

- When the device’s IP address is set, open a Web browser on your PC and type the device’s IP address into the address bar.
- Once the device’s home page appears, choose the “System” link. You’ll see a page similar to the one below.

The screenshot displays a web-based configuration interface for an Axia device. It is organized into three main sections, each with a blue header:

- IP settings:** This section contains several input fields: Host name (MICNODE1), Network address (10.2.5.203), Netmask (255.255.0.0), Gateway (255.255.255.25), and NTP server (255.255.255.25). Each field has a small tooltip or note, such as "(letters and digits only, no spaces)" for the host name and "(takes effect after reset)" for the NTP server.
- User password:** This section has two input fields: "New password" and "Retype new password", both masked with asterisks. The "New password" field has a note "(5 to 8 characters, letters and numbers)" and the "Retype" field has a note "(verify)".
- Firmware version:** This section shows the current hardware revision as "AXIA Microphone Node (rev. 1)". Below this, there are two radio button options for selecting a software bank:
  - Bank 0: ver. 2.0.1 (build Thu Sep 22 14:15:32 EDT 2005)
  - Bank 1: ver. 1.3.7 (build Tue May 24 12:04:27 EDT 2005) update: [input field] [Browse...]

At the bottom of the interface, there is a "Warning: System will reboot after changing current bank." and an "Apply" button.

## **Upgrading Axia Equipment to “Layer 3” Software – Page 5**

- In the section titled “Firmware Version,” click on the radio button next to “Bank 1” and click the “Apply” button to use the new software you’ve loaded. The device will reboot, and when the browser refreshes, you’ll see that the new software is now in use.
- You may now connect the device to your Axia IP-Audio network to continue configuring it.

Should you need assistance either before or during the upgrade process, you can contact us via telephone (+1-216-241-7225) and/or e-mail ([support@AxiaAudio.com](mailto:support@AxiaAudio.com)).