

Dolby Atmos Production Suite

Quick Start Guide

Software version 3.0
2 August 2018

1 Introduction to the quick start guide

This guide introduces you to the Dolby Atmos Production Suite components and provides the steps needed to install the suite and then verify your setup by playing back audio from a supported digital audio workstation (DAW).


- [Dolby Atmos Production Suite software package](#)
- [Contacting Dolby](#)

1.1 Dolby Atmos Production Suite software package

The Dolby Atmos Production Suite package includes the Dolby Atmos Renderer, which provides the software components required to monitor and play back Dolby Atmos content in a premix or editorial workflow.

This suite is for engineers, sound designers, and others who install or use Dolby Atmos Renderer software for editorial, premix, and sound-design workflows when authoring sound for digital home theater or VR, and creating Dolby Atmos masters.

The Dolby Atmos Production Suite provides access to one license for running the suite on a supported Mac central processing unit (CPU).

 **Note:** The Dolby Atmos Renderer Remote application, included as an option when installing the Renderer, is used for Dolby Atmos Mastering Suite workflows only. If you are working with the Dolby Atmos Production Suite only, you do not need the Dolby Atmos Renderer Remote.

1.1.1 Dolby Atmos Renderer installer components

The Dolby Atmos Renderer installer provides software for mixing and recording Dolby Atmos content.

| Component | Description |
|--|---|
| Dolby Atmos Renderer | This application is required to render audio and Dolby Atmos metadata from a supported DAW. The software supports various tasks, including monitoring and listening to a Dolby Atmos mix, and recording or playing back a Dolby Atmos master. |
| Dolby Renderer Send plug-in (Mac only) | This optional Pro Tools plug-in is installed with the Dolby Atmos Renderer and can be used to send object or bed source audio to the Dolby Atmos Renderer from Pro Tools. The Send and Return plug-ins are designed for in-the-box workflows with the Dolby Atmos Production Suite. |

| Component | Description |
|--|---|
| Dolby Renderer Return plug-in (Mac only) | This optional Pro Tools plug-in is installed with the Renderer and can be used to receive Dolby Atmos audio from the Dolby Atmos Renderer, and then route the rendered mix to Pro Tools outputs. The Send and Return plug-ins are designed for in-the-box workflows with the Dolby Atmos Production Suite. |
| Dolby Atmos Renderer Remote (Dolby Atmos Mastering Suite workflows only) | This optional application enables remote control of a Dolby Atmos Renderer that is running with a Dolby Atmos Mastering Suite license and is located on the same network. This option is integral for two-CPU systems, where the Dolby Atmos Renderer Remote on the DAW machine controls the Dolby Atmos Renderer on the rendering and mastering workstation. |
| Dolby Audio Bridge (Mac only) | This optional Core Audio driver enables the rendering application to act as a virtual Core Audio device. It supports routing audio (beds and objects) to or from a DAW configured to use the bridge. Installing this component requires restarting your computer. |
| Dolby Atmos Panner plug-in (Mac only) | This optional Pro Tools plug-in enables you to position audio objects in a Dolby Atmos home theater mix in Pro Tools. This panner plug-in lets you position audio objects in a three-dimensional audio field. |
| Dolby Atmos VR panner plug-ins (Mac only) | These optional Pro Tools plug-ins enables you to position audio objects in a Dolby Atmos VR mix in Pro Tools. The Dolby Atmos VR Spherical Panner plug-in lets you position objects using a polar coordinate system. The Dolby Atmos VR XYZ Panner plug-in lets you position objects in a three-dimensional audio field. |
| Dolby Atmos VR Transcoder (Mac only) | This optional Mac application enables you to encode Dolby Atmos content to B-Format (Furse-Malham [FuMa], AmbiX) output formats and Dolby Digital Plus (.ec3, .ec3 in .mp4 container) for VR applications. For more information, see the <i>Dolby Atmos VR Transcoder Guide</i> . |
| Documentation | The installer includes user documentation for working with Dolby Atmos home theater or VR content. |
| Session templates (Mac only) | The installer includes DAW session templates for creating a session that is configured and ready for Dolby Atmos authoring. |

Additionally, users can download the Dolby Atmos Conversion Tool. This tool enables you to convert one Dolby Atmos media file format to another, or perform other conversion tool operations (such as changing the frame rate of a Dolby Atmos media file).

Dolby Atmos authoring documentation

The Renderer installer includes supporting documentation.

When selected during installation, documentation for Dolby Atmos Production Suite and Dolby Atmos Mastering Suite on Mac are installed at `~/Applications/Dolby/Dolby Atmos Renderer/Documentation`. For Dolby Atmos Mastering Suite on Windows, documentation is installed at `C:\Program Files (x86)\Dolby\Dolby Atmos Renderer\Documentation`.

After installation, installed documentation is also available in the Renderer. You can access an version of the Renderer guide via the **Help > Dolby Atmos Renderer Guide** menu command. You can access all Renderer documentation via the **Help > Open Documentation** menu command.

Dolby Atmos Production Suite and Dolby Atmos Mastering Suite on Mac include the entire documentation set. Dolby Atmos Mastering Suite on Windows does not include the documentation noted as Mac only.

Dolby Atmos Renderer Guide

This documentation provides information for using the Dolby Atmos Renderer and other Dolby Atmos software to create or play back a Dolby Atmos master, listen to a Dolby Atmos mix, and pan audio objects in a Dolby Atmos mix.

Suite release notes

Refer to this documentation for installation instructions, new features and improvements, and known issues. There are separate release notes for the Dolby Atmos Production Suite and Dolby Atmos Mastering Suite.

New in Dolby Atmos Renderer

This documentation provides a list of what is new in the release. For releases with major user interface (UI) changes, this documentation details these changes as a primer to the main guide.

Dolby Atmos Production Suite Quick Start Guide (Mac only)

This documentation introduces you to the Dolby Atmos Production Suite components and provides the steps needed to install the suite and then verify your setup by playing audio from a supported DAW session.

Dolby Atmos Panner Plug-ins Guide (Mac only)

This documentation provides reference and task information about Dolby Atmos panner plug-ins that can be used for Dolby Atmos authoring in a home theater or VR workflow.

Dolby Atmos VR Transcoder Guide (Mac only)

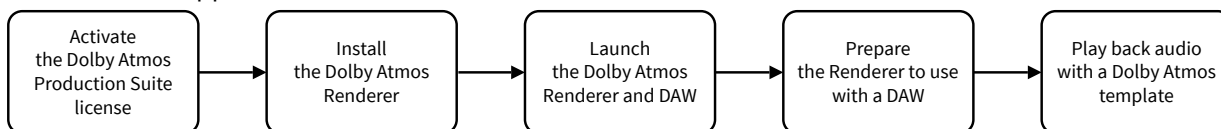
This documentation describes how to use the Dolby Atmos VR Transcoder application to encode .atmos files.

Dolby Atmos Renderer Open Source Software Guide

This documentation provides the third-party software licensed under open source licenses that are incorporated into the Dolby Atmos Renderer software along with the required notices.

1.1.2 Installation workflow

This documentation provides the steps to install the suite and then verify your setup by playing back audio from a supported DAW.



For detailed information on creating and editing Dolby Atmos content, see the *Dolby Atmos Renderer Guide*.

1.2 Contacting Dolby

You can contact Dolby regarding this product and its supporting documentation.

If you have technical questions about this product, visit <https://developerkb.dolby.com/support/home>.

If you have questions or comments about this documentation, please send an email to documentation@dolby.com.

2 Installing the Dolby Atmos Production Suite main components

The Dolby Atmos Production Suite components are installed via a single Dolby Atmos Renderer installer. The suite includes access to a single license for running the suite on a supported CPU. Additionally, users can download the Dolby Atmos Conversion Tool.

- [Activating a Dolby software license](#)

- [Installing the Dolby Atmos Renderer on Mac](#)
- [Launching the Dolby Atmos Renderer and supporting software](#)

2.1 Activating a Dolby software license

On a supported computer or iLok, activate the license that enables your software. We recommend that you activate the license before you install the software.

Prerequisites

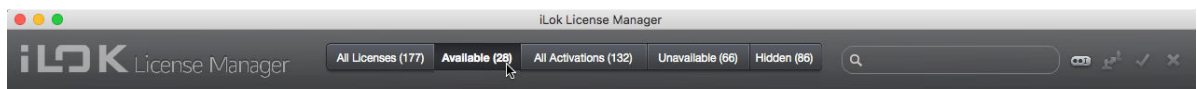
- Download the iLok License Manager from www.ilok.com.
- Ensure that you have iLok authorization for the license.

About this task

This task is performed in the iLok License Manager.

Procedure

1. Launch the **iLok License Manager**.
2. In the **iLok License Manager** window, sign in to your account, and then click (highlight) your account name in the navigation bar.
Your account name is shown in the upper-left panel. Your host machine and iLok Universal Serial Bus (USB) devices are shown as icons in the panel below your account information.
3. Click the **Available** tab in the **iLok License Manager** header.



If you do not see the **Available** tab, widen the application window until the tab is visible in the header.

The available licenses are shown under the tabs.

4. Locate the license for your software, and then drag and drop it to your host machine icon or to the iLok device icon on the left.
5. Follow any additional onscreen instructions.
6. In the **iLok License Manager** window, repeat these steps if you are installing additional licenses to other machines or iLoks.

2.2 Installing the Dolby Atmos Renderer on Mac

Depending on your system setup, install the Dolby Atmos Renderer components on the Mac that is running your DAW, on a Mac rendering and mastering workstation, or both.

Prerequisites

- Ensure that the machine meets system requirements, including any required software.
- Ensure that you have activated the license for your software.

About this task

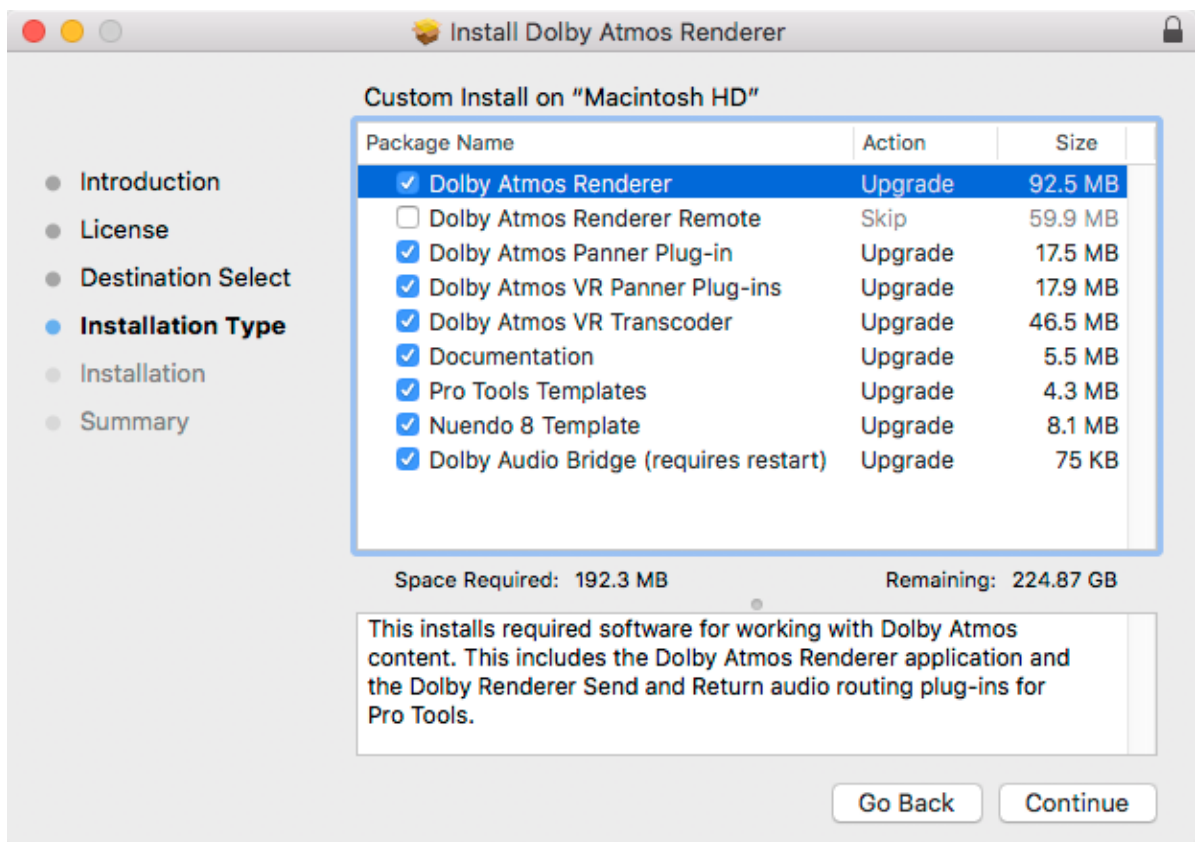
When selecting which components to install, select the components that are required for your system configuration.

The installer also includes optional components (such as the Dolby Audio Bridge, documentation, and templates). Choose optional components based on your Dolby Atmos Renderer configuration and needs.

When the Dolby Audio Bridge option is selected, installation includes a restart of the Mac OS.

Procedure

1. If updating Dolby Atmos Renderer and supporting software, ensure that the Dolby Atmos Renderer is not running.
2. Double-click the Dolby Atmos Renderer .dmg file (Dolby_Atmos_Renderer-3.0.0-xxxxxx.dmg).
This provides access to the installer and documentation. Refer to documentation for what is new in this version, release notes (including known issues), and additional information.
3. Double-click the Dolby Atmos Renderer installer package (Dolby Atmos Renderer.pkg).
4. Follow the onscreen instructions.
5. When prompted to select which components to install, select the components required for your system configuration.



6. Complete installation.

Results

All items selected for installation are installed.

2.3 Launching the Dolby Atmos Renderer and supporting software

After Dolby Atmos Renderer software is installed, you can launch the Renderer and DAW.

Procedure

1. Locate the Dolby Atmos Renderer application name or icon.

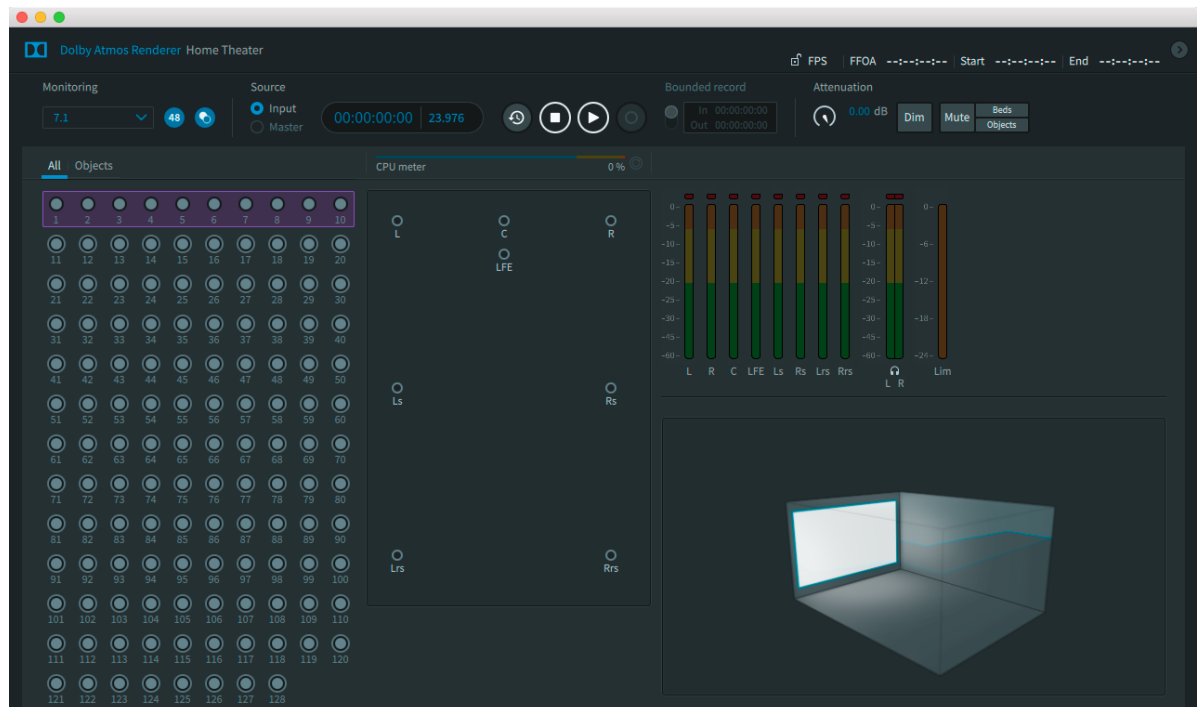
The Dolby Atmos Renderer application is in the Applications/Dolby/Dolby Atmos Renderer folder.

Figure 1: Dolby Atmos Renderer icon



2. Click the Dolby Atmos Renderer application name or icon.

The Dolby Atmos Renderer window is displayed.



3. Launch the DAW.

What to do next

Configure the settings in your Dolby Atmos Renderer and DAW as needed, to support your system configuration.

For additional configuration steps, see the *Dolby Atmos Renderer Guide*.

3 Getting started with Nuendo 8

To use Dolby Atmos Renderer with Nuendo, both the Renderer and Nuendo must be configured to work together. After completing configuration, you can use the Nuendo template provided by Dolby to confirm playback of audio.

- [Configuring drivers for a Renderer and Nuendo setup](#)
- [Setting up Nuendo to communicate with the Dolby Atmos Renderer](#)
- [Playing back audio in Nuendo with the Dolby Atmos project template](#)

3.1 Configuring drivers for a Renderer and Nuendo setup

If you want to author Dolby Atmos in Nuendo, you must set the Renderer to use the Core Audio driver, and then select the Dolby Audio Bridge as your input device in the Renderer, and as the VST Audio System driver in Nuendo. This ensures the routing of audio between Nuendo and the Renderer.

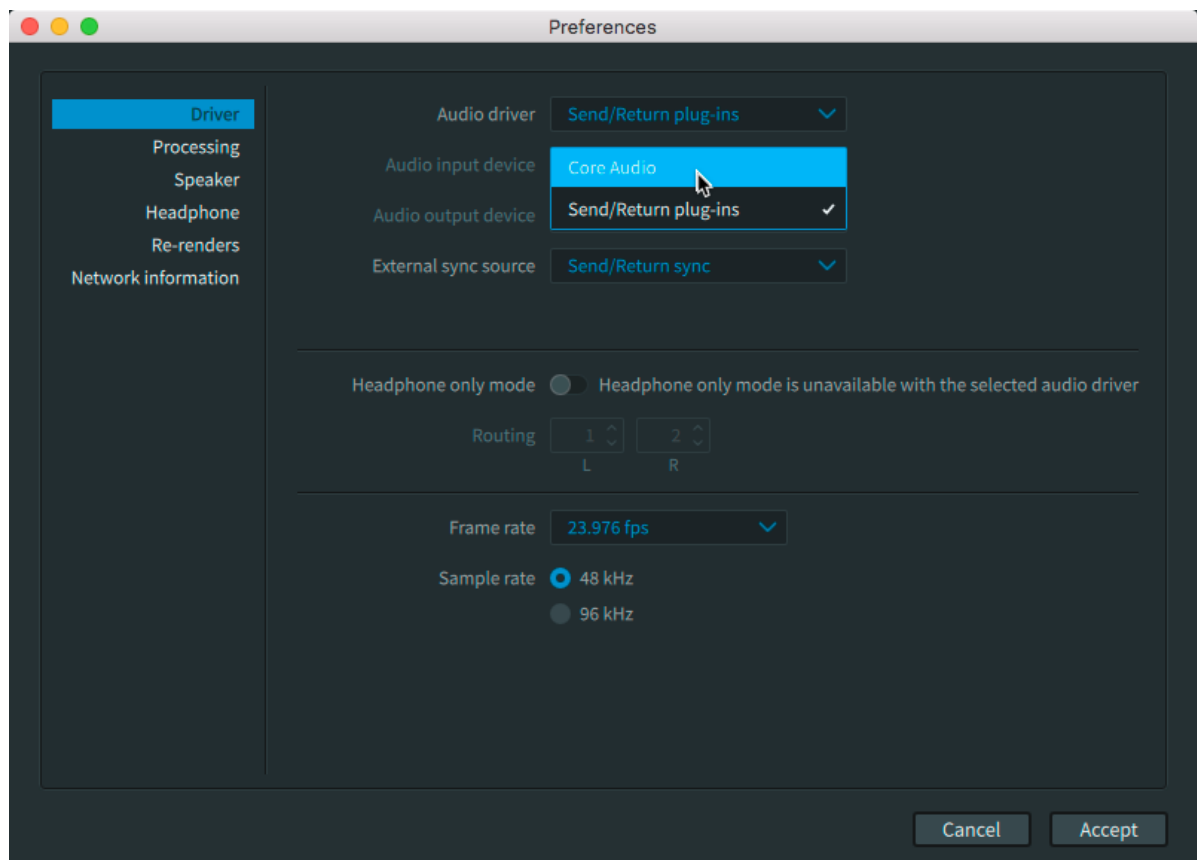
About this task

You can perform Renderer steps with the Dolby Atmos Renderer.

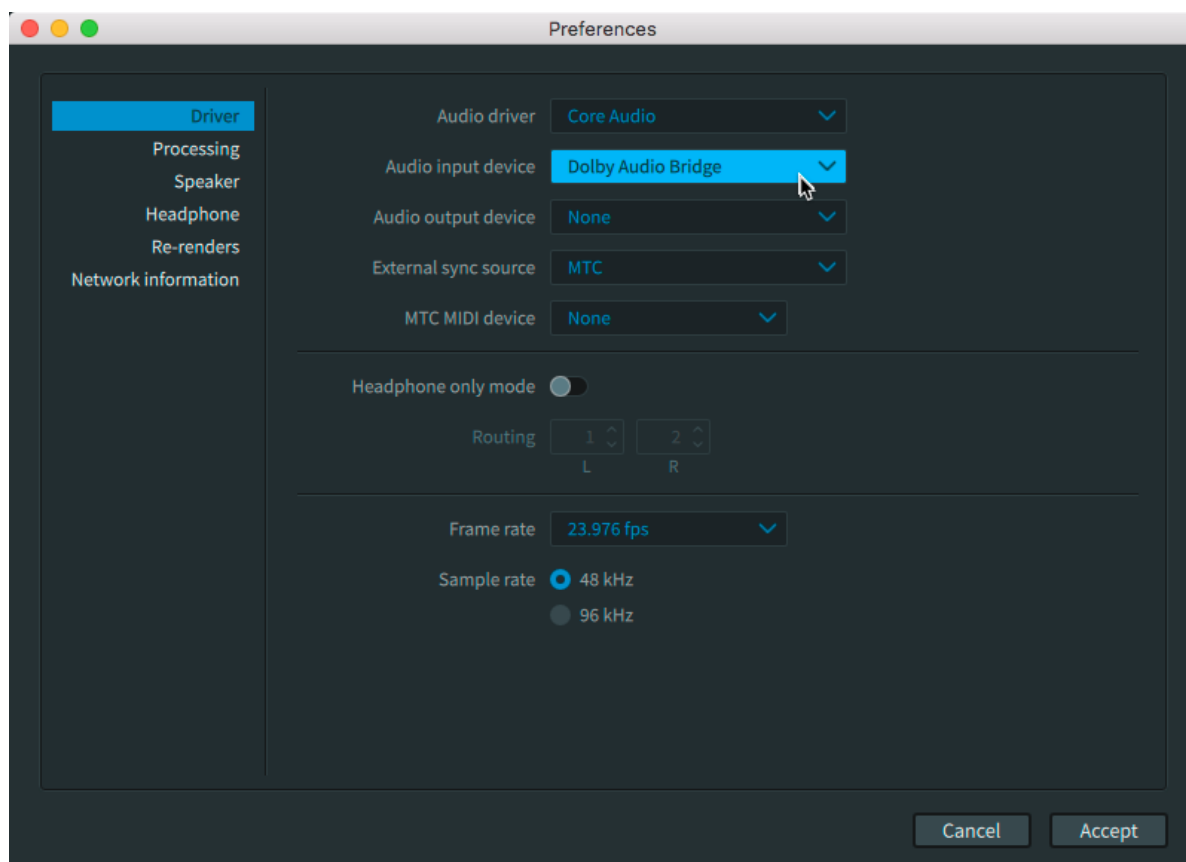
Additionally, in Nuendo, you will configure the VST Audio Driver engine to use the Dolby Audio Bridge.

Procedure

1. Launch the Dolby Atmos Renderer.
The Renderer window is displayed.
2. Choose **Dolby Atmos Renderer > Preferences** to open the **Preferences** window.
3. Select (highlight) **Driver** to navigate to the **Driver** preferences.
4. Click the **Audio Driver** drop-down menu, and select **Core Audio**.



5. In the **Audio input device** drop-down menu, select **Dolby Audio Bridge**.



6. In the **Audio output device** drop-down menu, select the desired Core Audio output device.
7. (Optional) Set the external sync source and its supporting settings.
8. Set the **Frame rate** and **Sample rate** to match the rates of your Nuendo mix.
9. Click **Accept**.
10. Launch Nuendo.
11. In Nuendo, select the driver by performing these tasks:
 - a) Choose **Studio > Studio Setup**.
 - b) In the **Devices** section, click **VST Audio System**.
 - c) In the **Driver** drop-down menu, select **Dolby Audio Bridge**.

What to do next

Set up Nuendo to communicate with the Renderer.

3.2 Setting up Nuendo to communicate with the Dolby Atmos Renderer

Before authoring Dolby Atmos with Nuendo, you must set up Nuendo to communicate with the Renderer.

Prerequisites

- Required components for a Dolby Atmos system have been installed and configured.
- Drivers for a Dolby Atmos Renderer and Nuendo setup have been configured.
- Nuendo Rendering and Mastering Unit (RMU) Connector for Dolby Atmos is installed on the machine running Nuendo.

This software is included with Nuendo version 8.2. In previous versions, it had its own installer.

About this task

Perform the steps for this task on the computer that is running the Dolby Atmos Renderer and Nuendo.

Procedure

1. Launch the Dolby Atmos Renderer, and then Nuendo, if they are not running.
2. In Nuendo, choose **Studio > Object Mapping**.
3. In the **RMU** field, enter the IP address for the Dolby Atmos Renderer.

What to do next

Create a new project.

3.3 Playing back audio in Nuendo with the Dolby Atmos project template

You can use the Nuendo template provided by Dolby to confirm playback of audio.

Prerequisites

- Ensure that you have installed the Dolby project template for Nuendo. This template is included in the Dolby Atmos Renderer installer.
- Ensure that Nuendo is set up to communicate with the Renderer.


About this task

You can perform this task with the Dolby Atmos Renderer or Dolby Atmos Renderer Remote.

Additionally, this task uses Nuendo.

Procedure

1. Launch the Dolby Atmos Renderer, and then Nuendo, if they are not running.
2. In the Hub, locate the Project section, and select **Templates** in the category bar.
3. Select (highlight) the Dolby Atmos template: **Dolby Atmos Production Suite - 128 channels**.
4. Click **Create** to open the template.
5. Update the project configuration as needed.
6. After the project opens, perform one of these steps to add audio to the project:
 - Open a **Finder** window, and drag and drop a mono audio file from your computer onto the object 11 audio track.
 - Import audio into the Nuendo project using the **File > Import > Audio** command, and place the audio on track 11.
7. Start playback.
8. Listen to the headphone Left and Right channels, which are routed to your Nuendo stereo output path.

 **Note:** If you do not hear audio from your Nuendo output, stop playback and verify that your headphone mapping is correct in input/output (I/O) setup.

9. (Optional) In Nuendo, use object track panners to move objects and listen to the results.

10. Stop playback.

4 Getting started with Pro Tools

To use Dolby Atmos Renderer with Pro Tools, both the Dolby Atmos Renderer and Pro Tools must be configured to work together. After completing configuration, you can use one of the Pro Tools templates provided by Dolby to confirm playback of audio.

- [Configuring Dolby Atmos Renderer and Pro Tools setup that uses Send and Return plug-ins](#)
- [Setting up Pro Tools to communicate with the Dolby Atmos Renderer](#)
- [Playing back audio in Pro Tools with a Dolby Atmos session template](#)

4.1 Configuring Dolby Atmos Renderer and Pro Tools setup that uses Send and Return plug-ins

If you want to author Dolby Atmos in Pro Tools and use Dolby Send and Return plug-ins, you must set the Dolby Atmos Renderer to use the **Send/Return plug-ins** as your audio driver. This ensures the routing of audio between Pro Tools and the Dolby Atmos Renderer.

About this task

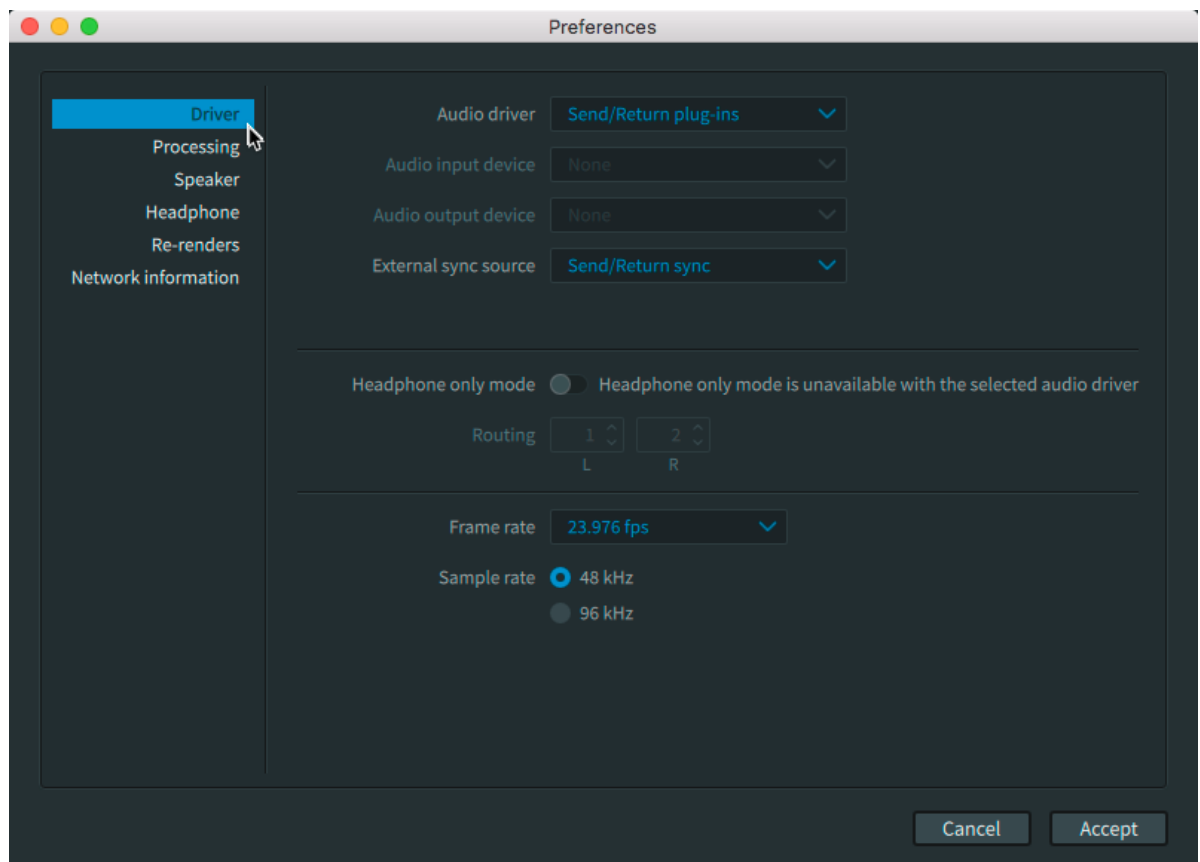
You can perform this task with the Dolby Atmos Renderer.

Alternatively, you can configure Dolby Atmos Renderer inputs and outputs to use the Dolby Audio bridge and other Core Audio devices.

This task also requires changes to Pro Tools.

Procedure

1. In the Dolby Atmos Renderer, choose **Dolby Atmos Renderer > Preferences** to open the **Preferences** window.
2. Select (highlight) **Driver** to navigate to the **Driver** preferences.



3. Click the **Audio Driver** drop-down menu, and select **Send/Return plug-ins**.
4. Set the **Frame rate** and **Sample rate** to match the rates of your Pro Tools session.
5. Click **Accept**.
6. Launch Pro Tools.
7. In Pro Tools, set the **Playback Engine** to your output device.
8. Set the **H/W Buffer Size**.
 - For a 48 kHz session, set the **H/W Buffer Size** to **1024 Samples**.
 - For a 96 kHz session, set the **H/W Buffer Size** to **2048 Samples**.

What to do next

Set up Pro Tools to communicate with the Dolby Atmos Renderer.

4.2 Setting up Pro Tools to communicate with the Dolby Atmos Renderer

Before authoring Dolby Atmos with Pro Tools, you must set up Pro Tools to communicate with the Dolby Atmos Renderer.

Prerequisites

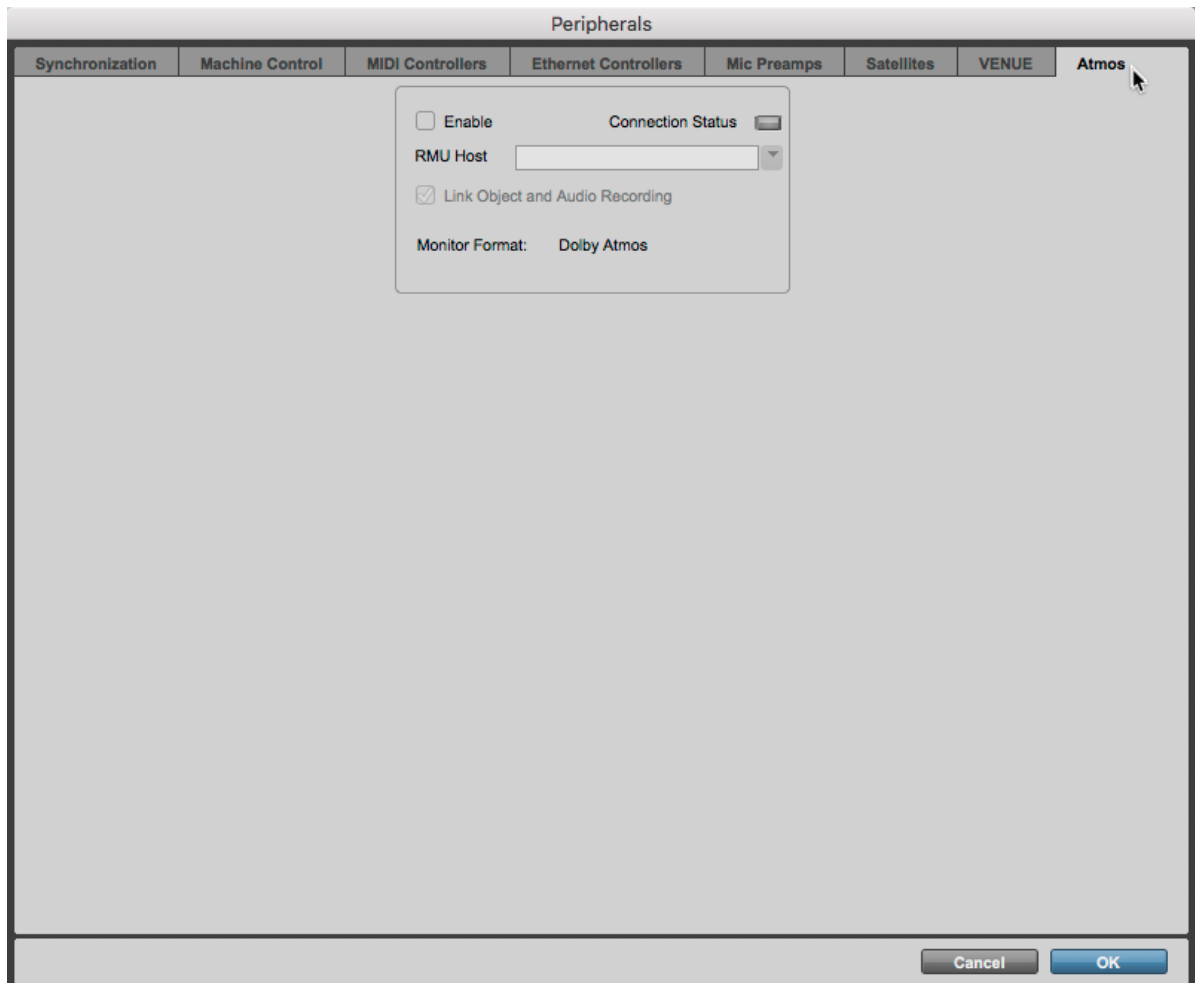
- Required components for a Dolby Atmos system have been installed.
- Renderer **Driver** preferences have been configured to ensure the routing of audio between the Renderer and Pro Tools.

About this task

Perform the steps for this task on the computer that is running the Dolby Atmos Renderer and Pro Tools.

Procedure

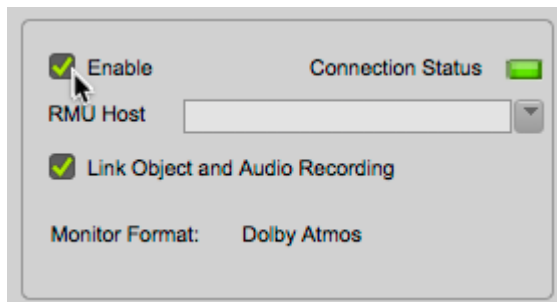
1. Launch the Dolby Atmos Renderer, and then Pro Tools, if they are not running.
2. In Pro Tools, choose **Setup > Peripherals**.
3. Click the **Atmos** tab.




4. Perform these steps in the **Atmos** page.

- a) Click (set) **Enable**.

The **Connection Status** indicator flashes green.



- b) In the **RMU Host** field, enter the IP address for the Dolby Atmos Renderer, or choose it from the drop-down menu.

 **Note:** When using the Production Suite, the Renderer is running on the same computer as Pro Tools, so you can enter LOCALHOST, instead of an IP address.

The **Connection Status** indicator turns solid green.

c) (Optional) Click (enable) **Link Object** and **Audio Record**.

Typically, you will want this option enabled so that you record and monitor object audio and metadata simultaneously when in a source/recorder workflow. If you do not want to record object metadata, disable the option.

5. Click **OK**.

What to do next

Create a new session.

4.3 Playing back audio in Pro Tools with a Dolby Atmos session template

You can use one of the Pro Tools templates provided by Dolby to confirm playback of audio.

Prerequisites

- Ensure that you have installed the Dolby session templates for Pro Tools. These are included in the Dolby Atmos Renderer installer.
- Ensure that Renderer **Driver** preferences have been configured to ensure the routing of audio between the Renderer and Pro Tools.
- Ensure that Pro Tools is set up to communicate with the Renderer.


About this task

You can perform this task with the Dolby Atmos Renderer.

Additionally, this task uses Pro Tools and a Dolby Atmos Renderer Send Return session template.

Procedure

1. Launch the Dolby Atmos Renderer, and then Pro Tools, if they are not running.
2. In Pro Tools, choose **File > Create New**.
3. In the **Dashboard** dialog, choose one of the templates from the Dolby Atmos Production Suite template group.
 - a) Click **Create**.
 - b) Click (enable) **Local Storage (Session)**.
 - c) Click (check) the **Create From Template** option.
 - d) Click the **Template Group** drop-down menu, and choose the **Dolby Atmos Productions Suite** folder.
 - e) In the list of Dolby Atmos Production Suite templates, click (highlight) one of the **Dolby Atmos Renderer Send Return** templates.
4. After the session opens, perform one of these steps to add audio to the session:
 - Open a **Finder** window, and drag and drop a mono audio file from your computer onto the object 11 audio track.

- Import audio into the Pro Tools session using the **File > Import > Audio** command, and place the audio on track 11.
5. Start playback.
 6. Listen to the headphone Left and Right channels, which are routed to your Pro Tools stereo output path.
 **Note:** If you do not hear audio from your Pro Tools output, stop playback and verify that your headphone mapping is correct in I/O setup.
 7. (Optional) In Pro Tools, use object track panners to move objects and listen to the results.
 8. Stop playback.

Glossary

AC

Alternating current.

ADM

Audio Definition Model. A metadata specification for describing channel-based, object-based, or scene-based audio.

ASCII

American Standard Code for Information Interchange.

ASIO

Audio Stream Input/Output. A soundcard driver protocol from Steinberg Media Technologies GmbH that allows musicians and sound engineers to access PC soundcards directly without going through Microsoft Windows.

B-format

A speaker-independent representation of a soundfield.

BWF

Broadcast Wave Format. An extension of the Microsoft Waveform Audio Format (WAV) file format to include metadata important to broadcast applications. This format is specified in EBU Tech 3285.

CAF

Core Audio Format. A file format that was developed by Apple for storing and transporting digital audio. A .caf file can store large amounts of data and is not limited to 4 GB, as was the case with older file formats.

channel configuration

A standard for describing a sound system with front, surround, and overhead channels. The first numeral represents the number of front channels, the second represents the number of surround channels, and the third represents the number of height channels. For example, 3/2/2 indicates that there are three front channels, two surround channels, and two height channels.

container

A formatted file (such as an MP4 file) comprising one or more multiplexed elementary streams and including format-specific metadata.

CPU

Central processing unit.

DAW

Digital audio workstation. An electronic device or computer software application used to record, edit, and produce audio files.

dBFS

Decibels full scale. The amplitude of a signal relative to a digital full-scale signal.

Dolby Digital Plus

An advanced perceptual audio-coding system that expands and improves Dolby Digital coding technology, with higher bandwidth efficiencies, support for additional channels, and enhanced metadata capabilities.

DSP

Digital signal processor. A specialized microprocessor optimized for digital signal processing.

EQ

Equalization. The adjustment of audio frequency responses for practical or aesthetic reasons.

FFOA

First frame of action. The point on a film reel or corresponding file at which the program content begins.

fps

Frames per second. The number of unique consecutive images (frames) an imaging device produces in one second.

frame

In audio, a series of PCM samples or encoded audio data representing the same time interval for all channels in the configuration. Metadata pertaining to the frame can be carried within the frame or separately, depending on context.

HD

High definition.

I/O

Input/output. The communication between a system and an entity outside the system, such as another system or a human being.

IP address

Internet Protocol address. A numerical identifier assigned to a device that is a member of a network that uses the IP for communication.

immersive stereo

A technology that delivers a virtualized immersive experience to headphones or stereo speakers through a Dolby AC-4 bitstream with appropriate stereo content and metadata that converts the stereo signal into the virtualized experience.

LTC

Linear timecode. A timecode developed by the Society of Motion Picture and Television Engineers (SMPTE) that provides a time reference for editing, synchronization, and identification.

LFE

Low-Frequency Effects. A band-limited channel specifically intended for deep, low-pitched sounds.

MADI

Multichannel Audio Digital Interface. A communications protocol for an interface that carries multiple channels of digital audio, defined by the Audio Engineering Society. Also known as AES10.

object

An audio signal plus associated object audio metadata.

PC

Personal computer.

PCM

Pulse code modulation. A method that is used to convert analog signals into digital, binary, coded pulses by sampling the analog signal, quantizing each sample independently, and converting the resulting quantized values into a digital signal.

playlist

An extended .m3u8 file that contains one or more uniform resource identifiers (URIs). A URI can point to another playlist or to a media file.

Dolby RMU

Dolby Rendering and Mastering Unit.

RMU

Rendering and Mastering Unit.

rendering

Processing of audio content to adapt it to specific speaker layouts, such as 5.1- and 7.1-speaker feeds, or headphones and sound bars.

UI

User interface.

USB

Universal Serial Bus. A standard that defines the cables, connectors, and communications protocols used in connections between computers and electronic devices.

WAV

Waveform Audio Format. An audio bitstream file format.

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