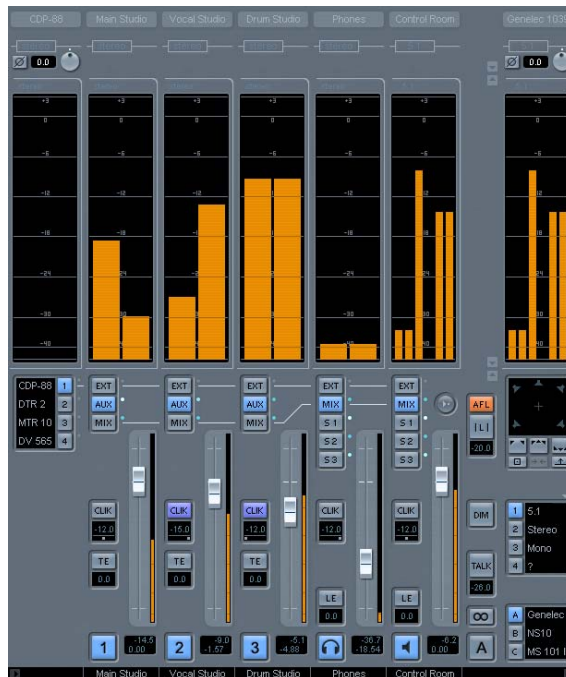


# Nuendo 3.2

New Product Guide  
November 2005



\* This New product Guide is an addendum to the existing Nuendo 3/3.1 Product Guides which are appended at the end of this document for your convenience.

## New Product Guide

# Nuendo 3.2

### Product Name

“Nuendo 3.2”

### Tagline

*“Media Production System”*

### Positioning Statement

*“Once again, Steinberg steps forward to present a new milestone in digital audio workstation technology by porting the last remaining domains of hardware mixers directly into the Nuendo software: Full Control Room Functionality!”*

### Product Summary

Nuendo 3.2 offers a dedicated Studio Bus system allowing the setup of up to four separate studio mixes, including integrated Talkback functionality and separate Mix-, Headphone- and Control Room busses. Four switchable monitor configurations with extended fold-down options on the output side and predefined external returns on the input side complete the new recording environment. The impressive list of associated functionality goes on. Automated “Dimming”, a user definable “Reference Level” and the “Solo to Center” command have been designed to meet the exacting demands of producers and engineers in recording environments. In order to meet the continuously growing demand for tactile input, Nuendo 3.2 also features two important extensions in terms of remote control hardware support: The recently released EuCon adaptation now supports motorized joysticks and users of the WK Audio ID controller, which with Nuendo 3.2 is also available under OSX, can finally control all of the new Control Room features directly from their ID remote surface.

## **Background**

### **Large Console Monitoring Sections**

In traditional analog studios, the audio console maintained control over every audio signal in the studio, including the control room monitors, headphone systems, external 2-track tape machines and communications such as the talkback system. The console itself provided a means of creating multiple cue mixes for performers in the studio. Using available aux sends, the engineer could create multiple cue mixes for the various performers, each one having a unique mix tailored for that person or group of performers. With the advent of the DAW, many of the functions of the console started being performed inside the audio software, allowing for more flexibility and instant recall of any setting. In many studios, the console sat idle except for adjusting the playback level of the speakers, switching to monitor external devices and routing signals to headphones and other cue mix playback systems. Smaller hardware units have been made to replace the monitoring section using a simple volume knob with speaker and input switches. Some even include a talkback system and headphone amplifiers.

### **Surround Sound**

With more and more surround recording and mixing being performed in the DAW environment, the needs of the monitoring section have become magnified. Surround speaker setups must be able to work with smaller, stereo speakers and even mono speaker systems. Switching back and forth between them can become quite complicated. Also, the ability to perform down mixes of multi-channel audio is now needed on a regular basis for many audio professionals.

### **Virtual Control Room Solution**

Nuendo has now added the functionality of the control room monitoring section of large format analog consoles to the virtual audio environment of VST with the creation of the Control Room Mixer and Control Room Overview windows.

## Key Selling Points of Nuendo 3.2

- Nuendo 3.2 completely redefines the recording workflow in digital audio workstations by reproducing the complete **Control Room Section** originally found on expensive hardware desks only. Dedicated **Studio Sends** in the mixer, four separate **Studios** in the Control Room window, **Talkback**, **Headphone-** and **Control Room** busses make recording into a computer even easier as before. Predefined **External Returns** and switchable **Monitor Output Configurations** with foldback functionality grant direct integration of Nuendo with any outboard hardware equipment such as DAT-, MD-, CD/DVD players and the studios speaker/amplification systems.
- Nuendo 3.2 extends support of the **Euphonix MC and System 5-MC** hardware remote surfaces by adding amongst other things the ability to utilize **dual motorized joysticks** that Euphonix optionally provides for their new products. This way surround mixing even with dual sources becomes as easy as it could be.
- Nuendo 3.2 completes the support for the **WK Audio ID** control surface now allowing **direct control of all relevant parameters on the new Control Room section** of the Nuendo mixer. The ID controller was designed in cooperation with the Nuendo team and continuous to be a state of the art Nuendo hardware remote by being the first controller to completely support the control room section of Nuendo.

## No Competition

While the Control Room section of Nuendo 3.2 clearly is a unique feature within the area of native digital audio workstations, the demand for speaker management (switching between monitoring configurations and fold-down) is being served by the hardware industry which clearly underlines the need for such functionality. Hardware boxes for this purpose are being offered by a variety of companies (e.g. Audient, Martinsound, Presonus, Klein & Hummel, SPL, Mackie...) and range from USD 600 to USD 8,000. None of these boxes deliver the whole Control Room scenario that Nuendo 3.2 implements though and most all functionality that these hardware devices offer is covered by Nuendo 3.2 at no additional costs.

## Top-10 new features of Nuendo 3.2

1. Completely separate output busses for **Control Room- and Headphone Monitoring** are available in order to leave the Main Mix output untouched by Control Room specific settings.
2. Four user specific **Monitor Setups** allow quick switching between monitoring systems including "Foldback" and easy solo functionality for surround environments such as "Solo to Center" and "Back to Front".
3. Up to six **External Inputs** like DAT, Tape, CD or any other can quickly be selected for immediate playback to any Studio, Track, Headphone- or Control Room Bus.
4. A maximum of four separate **Studios** can be setup each getting their signal feeds from any audio channel, group channel or fx return channel inside the regular Nuendo mixer which now all feature dedicated **Studio Sends** with level and pan as well as Pre Fader/Post Fader switch.
5. **Talkback** functionality allowing engineers and producers to speak directly to musicians, narrators or other artists in any of the Studios.

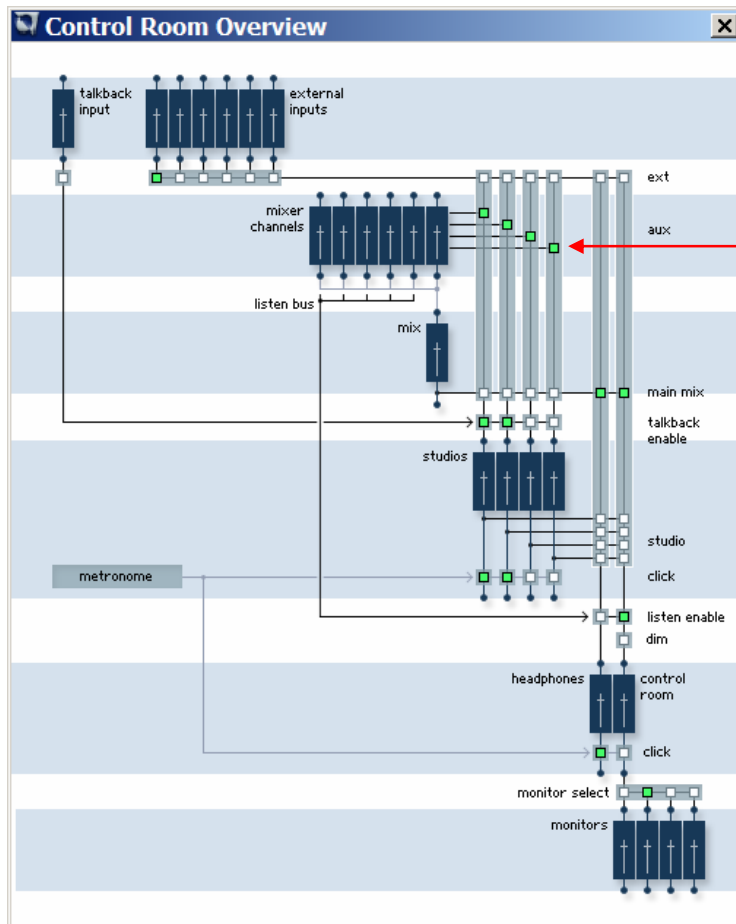
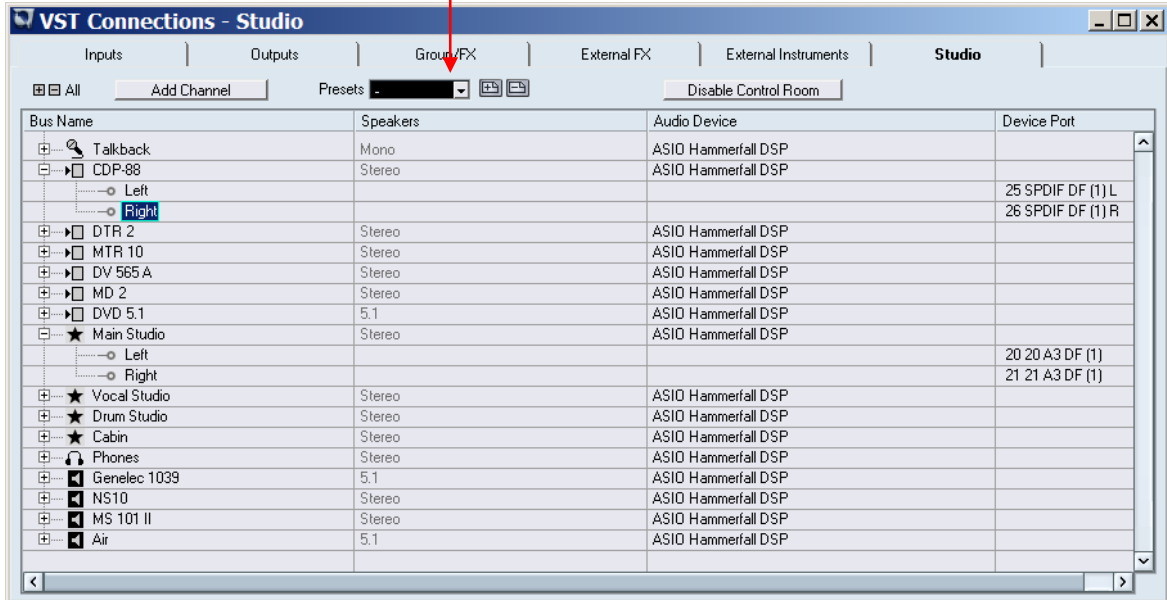
6. Not only is **automatic Dim** applied to the Control Room output when talkback is being executed to avoid feedback but also is an additional **DIM button** available for comfortable conversation or incoming phone calls in the Control Room which reduces the Control Room level by -20 dB or any other desired level.
7. **Assigning a present main mix to all or any selected Studio** can be executed by a simple key command allowing to quickly setup a rough mix for the Studio from which adaptations to meet the desire of the artists can quickly be achieved.
8. A separate "**Click Bus**" allows individual distribution of the metronome signal to Studios, Headphone and Control Room bus each with different level and panning if desired.
9. Physically controlling the new Control Room features can best be achieved with help of the **WK Audio ID Controller**. From the beginning ID had all needed hardware elements built in. Now with Nuendo 3.2 all of these faders, knobs and switches immediately come to a new life and are ready to serve every important aspect of the new features introduced with Nuendo 3.2.
10. The EuCon adapter just recently introduced as a potential add-on for Nuendo 3.1 is being further developed for Nuendo 3.2 by adding support for the optional **dual automated joysticks** allowing for direct control of the Nuendo surround panner.

## Other new features of Nuendo 3.2

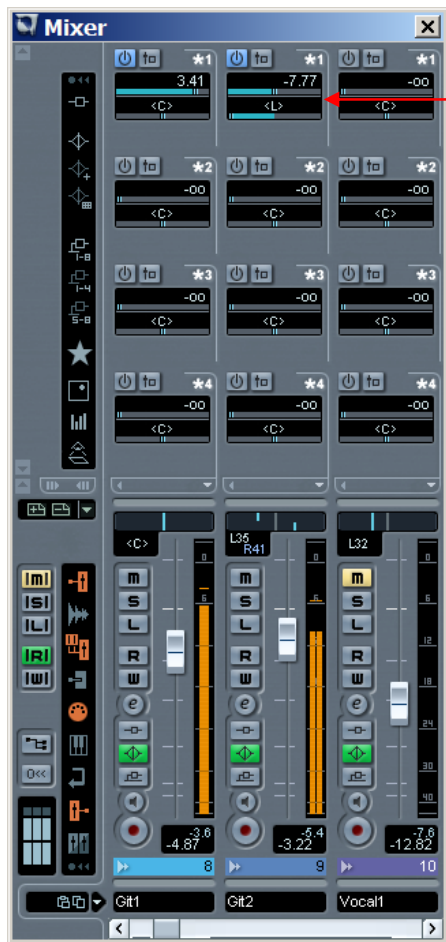
1. The **Metering Fallback Time** calculation been changed to a dB relative mode preventing the meters from falling too quickly especially in the lower part of the meter scale where many dB are represented by fewer pixels on the meter scale. Also Fall Back Times are user definable in the preferences.
2. The **WK-Audio ID** remote controller, an outstanding development cooperation between Steinberg and WK-Audio especially for Nuendo is now supported also by Nuendo under OSX.
3. A new **preference** is available defining the Nuendo behavior when importing a video file into the application. **Extracting Audio** and **Generating Thumbnail Cache** can be defined to be either activated or off globally for drag&drop or manual import to pool/project.
4. The **quality** of the **Sample Rate Conversion** has been optimized in order to further minimize aliasing effects and grant even more authentic sample material after conversion.
5. A switchable **Normalization** mode has been implemented into **MixConverter** allowing to choose whether the output configuration of MixConverter is being normalized. Activating the Normalization will ensure that the output signal level of a specific speaker equals the original inputs level of the same speaker.
6. **Always on Top** options enabling windows to float on top of all other Nuendo application windows for the **VST Connections** window and the **VST Plugin Info** window have been added.
7. A new **Preference** has been implemented making it possible to decide on a global level if the Send Routing Panners are linked to the Channel Panner or not making it redundant to set this separately for every project.

## Product facts

**Configuring** all needed **inputs and outputs** for the control room section is done in the Studio tab inside the VST Connections window. **Presets** of studio configurations and hardware can be saved and recalled but usually these settings are only being made once for an existing studio environment.



The **routing** of all Control Room busses can be viewed in the Control Room Overview window. All elements and their possible connections are displayed with **green dots marking existing connections**. But not only can the routing be viewed for a better overview here, **connection can also be changed directly** in this window by moving the green connection dots.



Here, in the new Studio Send view of the mixer individual mixes for the artists can be set in level and panning. A first basis for the artist mix can be derived from the main mix that is provided for the control room.

And this is where the above set sends arrive: In the Studio Channels inside the Control Room Mixer window.



The source for the Studios cannot only be the Aux mix for the artist but also any External Input or the Main Mix from the Control Room.

Click Level and Panning can be set separately per Studio Channel according to the needs of the artist independently from the Click in the Control Room.

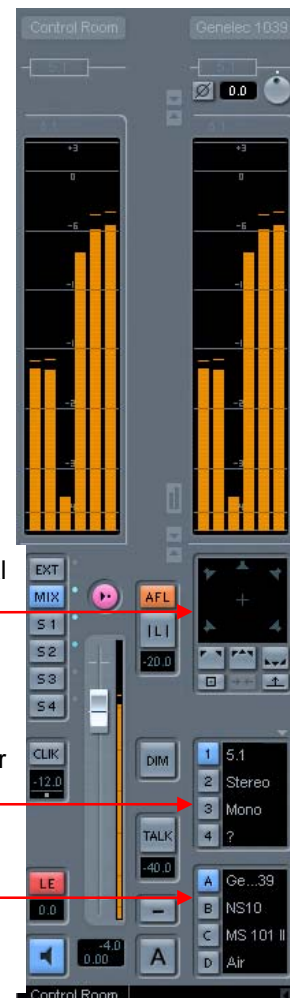
The same is true for the Level and enable/disable status of the Talkback.



The Control Room Bus allows an independent mix from the Main mix for specific purposes including AFL/PFL. Also can you route any of the External Inputs or any of the Studio mixes to the Control Room.

A reference level is provided as well as separate Click (volume/pan) for the Control Room.

A second individual Bus with all important settings that are present in the Control Room but operating individually is called Headphone and comes in handy for e.g. the producer.



Bringing rear signals to the center speaker or soloing any of the individual speakers is easily achieved here.

Checking for compatibility with a different speaker setup (stereo/mono or 5.1/stereo) can be done by using the Fold-Down buttons.

Up to four individual Speaker Configurations can be setup up and switched between with a single click. The above Fold-down operations are executed automatically if needed.

## Control Room Scenario 1: No Studios

This use case is typical for a single room studio without a recording booth. But even for users that do not have dedicated studio rooms for microphone based recordings of vocalists, piano players, or amp based guitarists the new control room functionality is of great advantage:

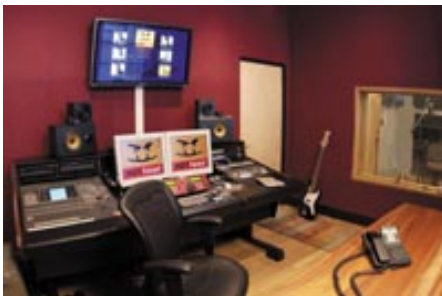


- External recording and playback devices for DAT, CD/DVD or MD can easily be setup. Not only can the outputs of these machines be monitored by simply routing their signals exclusively into the control room but also are the outputs directly available as input sources on any track of the project.
- Being able to quickly switch between different monitor setups is required for any mix in order to achieve maximum compatibility of dynamic, panning and overall sound of the mix. The fold down and solo options are in any case a great help with this.
- Having a separate Headphone Bus with individual level settings, click on/off status and source selection can be of great help whenever headphone operation is required for more than one person. By the way: If the one Headphone Bus provided should not be enough, the Studio Busses do the job just as well – simply set them to “Mix”.
- The DIM button and the Reference Level allow returning to predefined levels even after unwanted or planned changes of level.

\* The studio photos shown in this product guide are for your company-internal use only. For copyright reasons, it is not permitted to publish or distribute them in any way.

## Control Room Scenario 2: One or more Studios

This use case includes usage of up to four separate Studios for recordings. Everything needed to perform studio recordings with musicians or actors is provided:

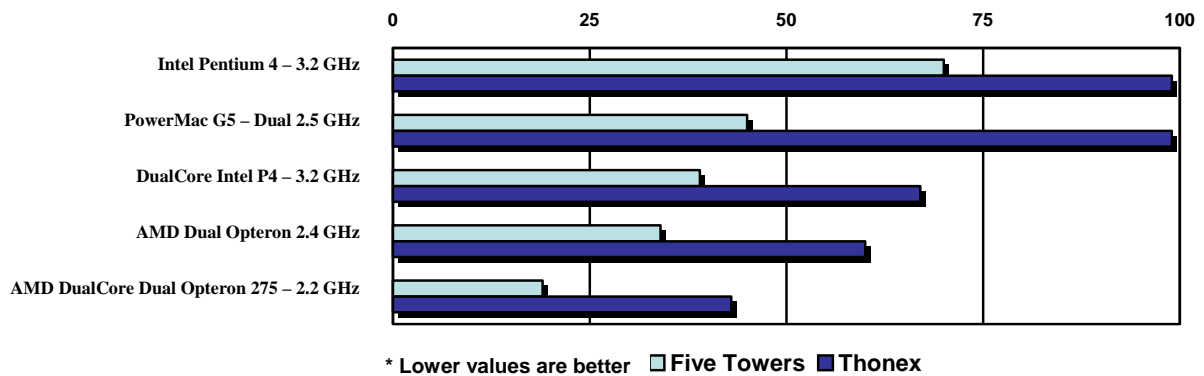


- Separate individual mixes for the artist(s) in the Studio can be made including personalized settings for the following parameters:
  - Main Level of Studio Mix
  - Level and Pan of individual tracks
  - Level and Pan of own (live) signal
  - Click level, pan and on/off status
  - Pre/Post Fader Studio Send
  - Talkback level
- But the artist is not bound to only receiving his individual mix, he or she can also receive the Main Mix or any External Input signal alternatively.
- The Talkback functionality includes:
  - Talkback level per Studio
  - Automatic DIM of the Control Room signal when utilizing Talkback
  - Overall Talkback Level
  - Talkback Enable per Studio Mix
- Talkback can be chosen as an input source for every audio channel in order to record commands or remarks easily.
- Naturally all advantages mentioned in scenario 1 (External Returns, Monitoring Setups, Headphone Bus, Dim, Reference Level) are also great for this scenario.

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## Direct Monitoring and Studio mixes

The way that monitoring of live played signals is being achieved has always been one of the biggest differences between DSP based systems and native solutions like Nuendo. Direct Monitoring via the ASIO hardware was one of the solutions provided back in the days of low CPU processing power. Alternatively monitoring thru the computer taking into account the natural latency of the native systems has always been an alternative provided that the computer used was fast enough to allow reasonable low latency. And today with dual processor computers even offering the usage of dual core technology this way of monitoring can definitely be considered a practical way to go. The recent Steinberg Distributor News (October 5<sup>th</sup> 2005) regarding multiple processor cores underlines the tremendous power growth as the graphic below shows. The monitoring functionality of live signals in a Studio Mix in Nuendo 3.2 is based on this technology. With this having been said it becomes clear that a well CPU equipped computer and a good ASIO driver are needed to utilize this new functionality. ASIO Direct Monitoring will nevertheless be implemented in a later version of Nuendo then allowing even users of less CPU powerful computers to make use of the advantages of Studio mixes.



## The Steinberg setup for Nuendo 3.2

Steinberg Quality Assurance during their Nuendo 3.2 tests has used the setup you can see on the left and was able to work with a latency of 3 ms (audio card setting) all the way thru a real-life test in which playback mixes were configured for various artists together with their live signals which were monitored without ASIO direct monitoring. It became clear that native monitoring can be considered practical if the hardware and software conditions are tailored to this use case. The provided system can be considered as the minimum requirement for natively monitored live signals. A recommended system for even better results is also provided. Also worth having in mind is the fact that many additional audio I/O are needed in case all new Control Room features are to be used. For this purpose, one or two MADI cards with appropriate converters have proven to be the most flexible solution.

### Steinberg Quality Assurance setup

CPU	Dual Opteron 2.4 GHz
RAM	2GB
Audio card	RME HDSP MADI
I/O Interface	RME ADI 648

### Exemplary recommended system for even better results

CPU	Dual Athlon 64 X2 4800+ @2,4 GHz
RAM	2GB

## Applicable text elements

**25 Words description:** *“Steinberg sweeps away the last remaining domain of hardware mixers by adding a complete set of Control Room functionality for professional studio recordings to the Nuendo mixer.”*

**50 Words description:** *“Nuendo 3.2 is ready to replace hardware mixers in professional studio recording situations by adding everything required directly to the mixer: Studio Busses getting feeds from any mixer channel, dedicated Talkback, Mix-Headphone- and Control Room Busses as well as configurable Input Returns and switchable Monitor Setups with extensive foldback options.”*

**100 Words description:** *“With Nuendo 3.2 Steinberg migrates into their software everything that had been missing so far to completely replace hardware mixers in a recording workflow: Nuendo 3.2 offers a dedicated Studio Bus system allowing to setup and utilize up to four separate studio mixes. To complete the studio concept a full blown Talkback functionality is provided as well as separate Mix-, Headphone- and Control Room busses. Four switchable monitor configurations with extended fold-down options on the output side and predefined external returns on the input side deliver everything producers and engineers in a recording environment require in their daily workflow.”*

**200 Words description:** *“Nuendo 3.2 finally makes hardware mixer redundant even for the task of professional studio recordings. The Nuendo 3.2 software update offers everything needed to get the job done quick and intuitive: Dedicated Studio Busses can be setup serving up to four individual studios and their mixes. In order to take full advantage of this functionality a complete Talkback functionality is provided as well as separate Mix-, Headphone- and Control Room busses. A maximum of four user definable Monitor Configurations can be setup for quick*

*changing of monitoring setups and extensive fold-down and solo operations such as “Rear to Front” or “Solo to Center” as well as “Solo Front/Rear” grant easy audition of compatibility on the output side. On the input side a list of user definable Input Returns can be setup and selected ready to feed their signals into any of the new busses for auditioning or even importing audio material to Nuendo tracks. Control Room associated functionality for recording like automated and manual Dim, reference level operation or easy conversion of your main mix to a studio mix is included in Nuendo 3.2 underlining that these features were developed having the daily workflow of engineers and producers in mind.”*

## Marketing Support

- PR news on the Steinberg website
- Product page update on the Steinberg Website
- Nuendo 3.2 announcement at AES New York 2005
- All current Nuendo 3 advertisement including printed ads, Nuendo brochure and videos.
- Full PR Support
- This product guide

## Product Components

- Installation DVD (Mac/PC hybrid)
- Printed "Getting Started" manual (GB, D, F)
- Printed Operation Manual (GB)
- Nuendo 3.2 new features PDF
- USB Copy Protection Key (not contained in update 2 to 3)
- License Code for USB Copy Protection Key (updates 2 to 3 only)
- Demo versions of HALion3 and Wavelab
- Demo version with 5 Encodings of Nuendo DTS Encoder

## Pricing

**Nuendo 3.2 is a free update to all Nuendo 3.x customers which will be made available through Steinberg WEB services and will be distributed with upcoming Nuendo 3 packages.**



## System Requirements Nuendo 3.2

### Macintosh

#### Required\*:

Power Mac G5  
512 MB RAM  
OS X Version 10.4  
CoreAudio compatible audio hardware  
DVD-ROM drive  
USB port for copy protection key  
Internet connection needed for updates.

### Windows

#### Required\*:

Intel / AMD 2.0 GHz  
512 MB RAM  
Windows XP Home or XP Professional  
Windows MME compatible audio hardware (\* ASIO compatible audio hardware strongly recommended)  
DVD-ROM drive  
USB port for copy protection key  
Internet connection needed for updates.

\* Nuendo is proven to run on less powerful computers with less RAM and slower CPUs. These system requirements are meant to provide system specifications which allow for working in a reasonably professional matter. The actual performance of your system depends on the computer you use. More RAM and faster processors will provide better performance. Nuendo supports multiple processors and multi-core processor technologies resulting in maximum efficiency and performance. In order to achieve viable low latency results for life signals used for example in the studio mixes the computer and audio hardware used must be built according to these needs.