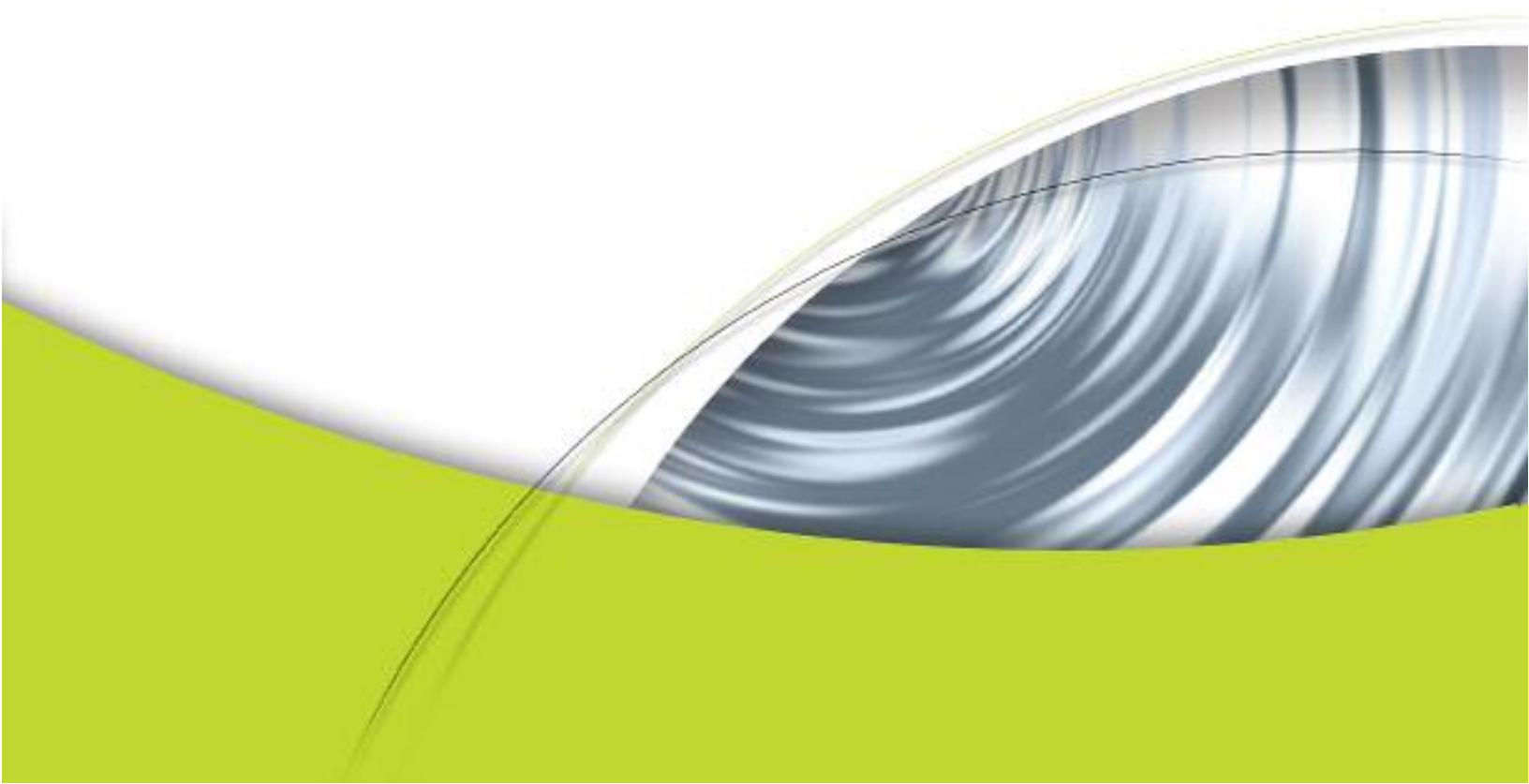




User Guide

NVSwap 1.0

Installing and Using NVSwap



Introduction to NVSwap

NVSwap 1.0 sets up and optimizes your audio experience when you use NVIDIA® audio products such as the NVIDIA SoundStorm™ audio solution. This software helps you configure your speaker setup on NVIDIA nForce™ motherboards equipped with an audio processing unit (APU) or a standard soft audio.

NVSwap tests and configures the setup of a 4 or 5.1 speaker system attached to one of the following qualified NVIDIA audio products:

- ❑ NVIDIA nForce2 with SoundStorm
- ❑ NVIDIA nForce with MCP or MCP-D
- ❑ NVIDIA nForce2 with MCP or MCP-T
- ❑ Any nForce-supported AC' 97 audio codec

To use NVSwap, you will need

- ❑ One of the following operating systems:
 - Windows 98 SE with WDM Hotfix and DirectX 8.1
 - Windows Me with DirectX 8.1
 - Windows 2000 with Service Pack 3 and DirectX 8.1
 - Windows XP
- ❑ One of the following speaker configurations:
 - A 4 speaker or 5.1 speaker system
 - A home theater amplifier with Dolby® Surround, Dolby Pro Logic, or Dolby Digital decoding capabilities with four or more speakers

Preparing Your System for 5.1

Use the following procedure to enable 5.1 audio playback on your nForce system. Depending on your hardware configuration, go to one of the following sections:

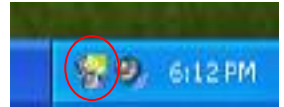
- ❑ “Enable Audio on SoundStorm, MCP-D, or MCP-T”
- ❑ “Enable Audio on Systems with MCP (Soft Audio Only)”

Once you enable audio playback, you are ready to use the NVSwap application.

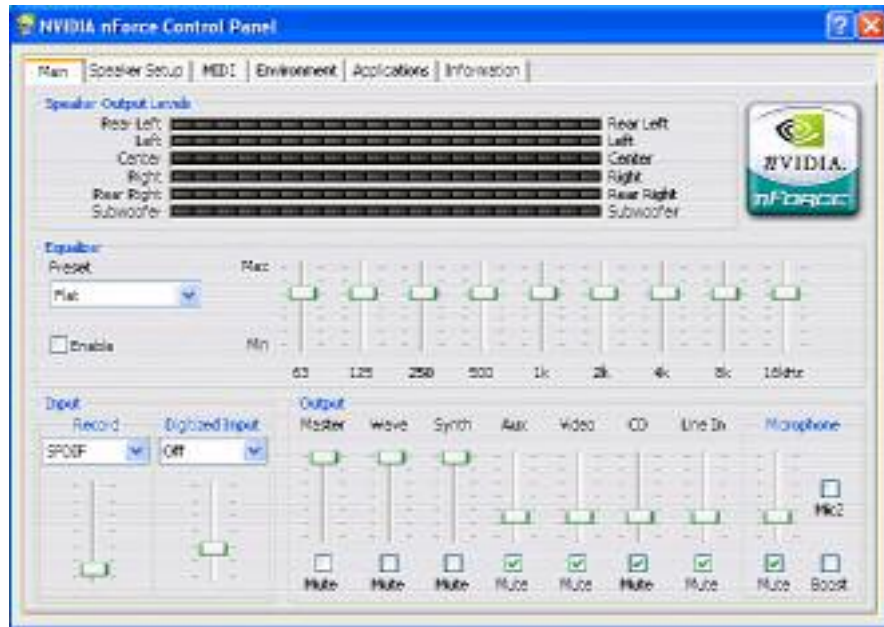
Enable Audio on SoundStorm, MCP-D, or MCP-T

Main Tab

1. Launch the application by double-clicking on the NVIDIA nForce Control Panel, which is located in the Windows System tray next to the clock.



The NVIDIA nForce Control Panel Main page is displayed.



2. Set the following options on the Main page:
 - Select **Flat** under Equalizer.
 - Uncheck the **Enable** checkbox.
 - Select **Off** under Digitized Input.
 - Check the **Mute** boxes and lower the volume on Aux, Video, CD, Line-In, and Microphone sources.

Speaker Setup Tab

You must select the appropriate settings for your system under the Speaker Setup tab. There are three possible setups:

- ❑ Analog Dolby Surround (go to step 3)
Use the Analog Dolby Surround setup if your speaker system only has stereo (left and right) inputs, but supports Dolby Surround or Dolby ProLogic decoding.
- ❑ Analog Multi-Channel (go to step 4)
Use the Analog Multi-Channel setup if your speaker system has separate inputs for the front, surround, center, and subwoofer (LFE) speakers. This type of system is typical of most PC speakers available today. An Analog Multi-Channel speaker system connects to your computer using multiple stereo analog cables.
- ❑ Dolby Digital (go to step 5)

These setups provide output to four or more speakers. Your setup is determined by how your speakers connect to your computer.



Analog Dolby Surround Speaker System

Use the Analog Dolby Surround setup if your speaker system only has stereo (left and right) inputs, but supports Dolby Surround or Dolby ProLogic decoding.

A Dolby Surround speaker system connects to your computer using a single stereo analog audio cable. Your speakers must have the Dolby Surround mode “enabled” to produce audio from the surround and center (ProLogic only) speakers. In this mode, the surround-left and surround-right speakers play the same surround sounds simultaneously.



Note: The LFE Crossover Frequency setting does not apply to the NVSwap application.

3. Select the following options on the **Speaker Setup** page to configure for Analog Dolby Surround:
 - Select **4 Speakers** or **6 Speakers** and use only a stereo cable to connect the PC to the speakers.
 - Check **Analog Output**.
 - Uncheck **Digital Output** (it doesn't apply to analog speaker systems).
 - Enable **Dolby® Surround Encoding** (for Dolby Pro Logic support) under Surround Settings.
 - Set all options to the maximum (highest) setting under **Premix Volume Levels**.

Your speaker options are now set. Go to the **Environments** tab.



Analog Multi-Channel Speaker System

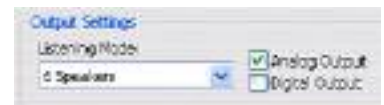
Use the Analog Multi-Channel setup if your speaker system has separate inputs for the front, surround, center, and subwoofer (LFE) speakers. This type of system is typical of most PC speakers available today.

An Analog Multi-Channel speaker system connects to your computer using multiple stereo analog cables.



Note: The LFE Crossover Frequency setting does not apply to the NVSwap application.

4. Select the following options on the **Speaker Setup** page to configure for Analog Multi-Channel:
 - a) Select **4 Speakers** or **6 Speakers** for 4.1 or 5.1 speaker analog systems. Use multiple stereo mini cables to connect the PC to the speakers.
 - b) Uncheck **Digital Output** support (it doesn't apply to analog speaker systems).
 - c) Check **Analog Output**.
 - d) Under **Premix Volume Levels**, set all options to the maximum (highest) setting.



Caution: Do not enable any Dolby encoding modes for this type of speaker system. Enabling Dolby modes will impair audio functionality.

Your speaker options are now set. Go to the **Environments** tab.

Dolby Digital Speaker System

Use this setup if your speaker system has a digital (S/PDIF) input and supports Dolby Digital decoding.

A Dolby Digital speaker system uses a single digital cable. Your speakers must have the Dolby Digital mode “enabled” to produce audio from the surround and center and subwoofer speakers.



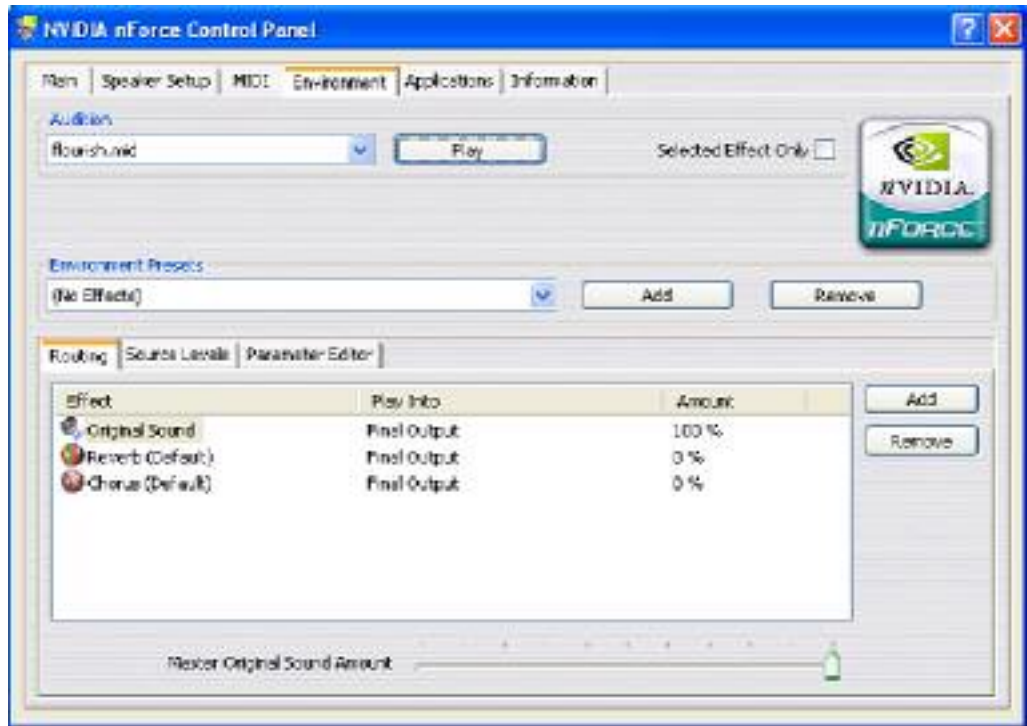
Note: The LFE Crossover Frequency setting does not apply to the NVSwap application.

5. Select the following options on the **Speaker Setup** page to configure for Dolby Digital:
 - a) Select **4 Speakers** or **6 Speakers** Dolby Digital 5.1 S/PDIF systems. Use a single coax or optical digital cable to connect the PC to the speakers.
 - b) Check **Digital Output** support.
 - c) Uncheck **Analog Output** (it doesn't apply to digital speaker systems).
 - d) Enable **Dolby Digital Encoding** (for Dolby Digital 5.1 support) under **Surround Settings**.
 - e) Set the options under **Premix Volume Levels** to the maximum (highest) setting.



Environment Tab

On the Environment window, select **No Effects** under Environment Presets.



Information Tab

Verify the following information:

- ❑ Audio Driver Version from the nForce Universal Driver Package (UDP) is version 5.10.2917.0 or later.
- ❑ Control Panel Version from the nForce Universal Driver Package (UDP) is version 1.00.00.0317 or later.



Systems with MCP (Soft Audio Only)

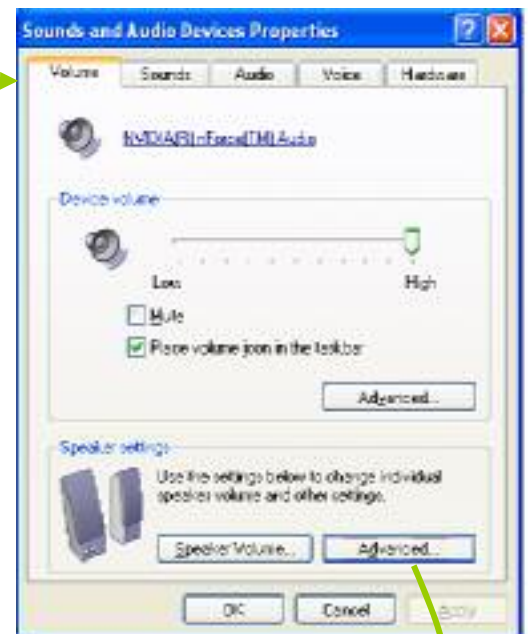
Verify that you have the latest nForce Universal Driver Package (UDP) installed and operating (version 2.03 or later available from the www.nvidia.com Web site). Once you have verified the driver, set up the Speaker Setup for your particular speaker and connectivity combination.

Speaker Setup

1. Go to **Start** ➤ **Control Panel** ➤ **Sounds and Audio Devices** to display the menu.



2. Click **Advanced** under Speaker settings.
3. Select 5.1 Surround Sound Speakers from the Advanced Audio Properties page. Click **OK** and **OK** again.

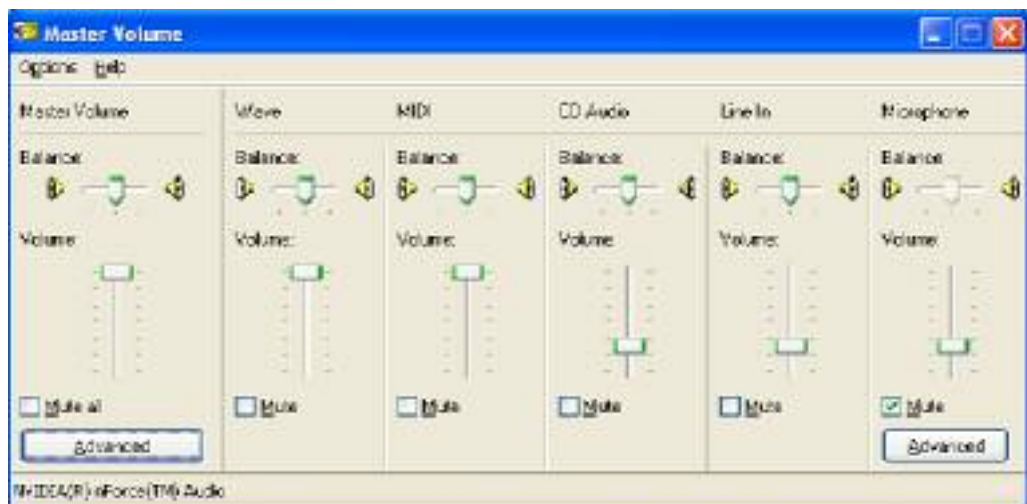


Volume Settings

Click **Start** ➤ **All Programs** ➤ **Accessories** ➤ **Entertainment** ➤ **Volume Control** to display the Master Volume window.



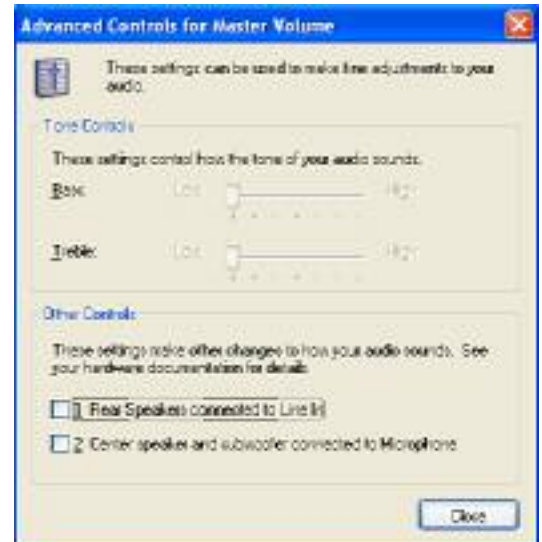
Set the volume to the maximum (highest) setting under Master Volume and Wave.



Note: This step is specific to systems with the Realtek ALC650 audio codec.

Click **Advanced** and set the following options:

- ❑ Select **1. Rear Speakers connected to Line in.**
- ❑ Select **2. Center speaker and subwoofer connected to Microphone.**
- ❑ Click **Close.**



Running the NVSwap Application

NVSwap is a self-contained application that requires no installation in order to function. Locate where you downloaded NVSwap and double-click its icon. You will see a graphic that looks similar to the following:



Testing the Speakers

Immediately after you run the application, the application begins cycling through the speakers with white noise. You see a visual indication of where audio should be coming from. If you do not hear audio coming from the highlighted speaker, check the connections between the sound jacks at the rear of your PC and your speaker system.

If you want to test a specific speaker, left-click on the appropriate speaker icon. This action causes white noise to play on the selected speaker for up to 5 seconds before returning to the cycling pattern.

Toggle Buttons

The three toggle buttons on the right side of the screen are for special features that may or may not be supported in your NVIDIA nForce audio product. These features are specific to the audio codec shipped on your system's motherboard.

If you have questions about the codec included with your nForce product, please contact the manufacturer of the motherboard or system.

Line In and Rear Speaker

Note: This step is specific to systems with the Realtek ALC650 audio codec.

The first button is for toggling between Line In and Rear Speaker settings. The default setting for the NVSwap application is for Line In to be active. If you are clicking this button, you disable Line In and enable Rear Speakers.



When Rear Speaker is enabled, the connection on your motherboard will not accept a Line In source, such as a TV tuner card. Changing this setting has the same effect as selecting or deselecting the "Rear Speakers connected to Line In" option in the Windows Volume Control.

Microphone In and Center and Subwoofer Speaker Settings

Note: This step is specific to systems with the Realtek ALC650 audio codec.

The second button is for toggling between Microphone In and Center and Subwoofer Speaker settings. The default setting for the NVSwap application is for Microphone In to be active. Clicking this button will disable Microphone In and enable Center and Subwoofer Speakers.



When Center and Subwoofer Speaker is enabled, the connection on your motherboard will not accept a microphone. Changing this setting has the same effect as selecting or deselecting the “Center speaker and subwoofer connected to Microphone” option in the Windows Volume Control.

Center and Subwoofer Speakers

The third button is for toggling the mapping between Center and Subwoofer Speakers. This lets you swap the signal going to both speakers, enabling a “virtual rewire” of the speaker jack.



Use this option only if you hear sound coming from the subwoofer when the center speaker is highlighted, and vice versa.



Notice

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Information furnished is believed to be accurate and reliable. However, NVIDIA Corporation assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. No license is granted by implication or otherwise under any patent or patent rights of NVIDIA Corporation. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. NVIDIA Corporation products are not authorized for use as critical components in life support devices or systems without express written approval of NVIDIA Corporation.

Trademarks

NVIDIA and the NVIDIA logo are registered trademarks of NVIDIA Corporation. NVIDIA nForce and NVIDIA SoundStorm are trademarks of NVIDIA Corporation.

Windows is a registered trademark of Microsoft Corporation. ALC650 is a trademark of Realtek Semiconductor Corp. Dolby Pro Logic and Dolby Digital are registered trademarks of Dolby Laboratories.

Copyright

Copyright NVIDIA Corporation 2003



NVIDIA Corporation
2701 San Tomas Expressway
Santa Clara, CA 95050
www.nvidia.com