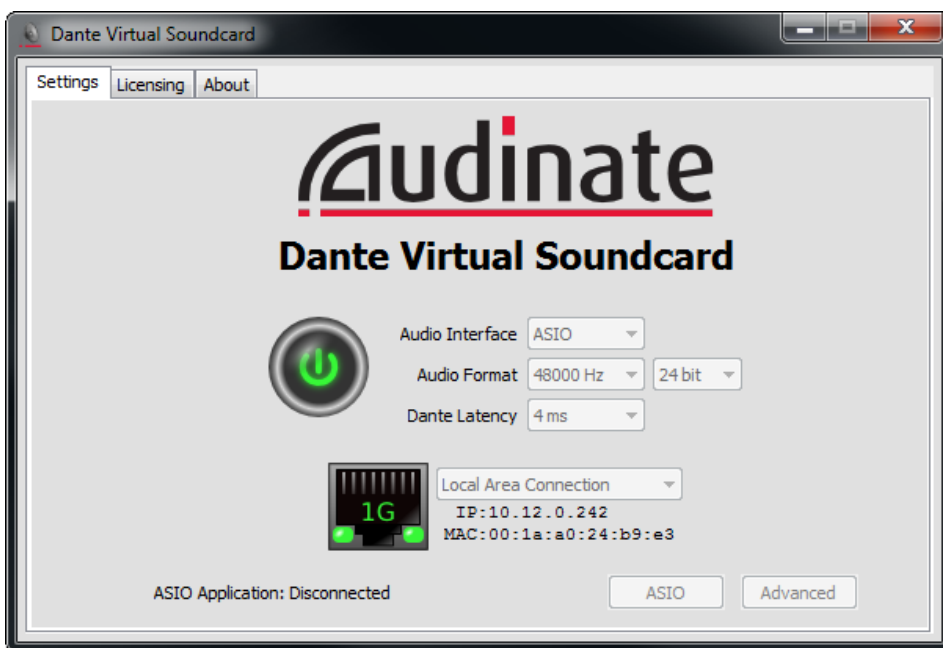# Dante Virtual Soundcard

User Guide

For Dante Virtual Soundcard software version 3.2.

For Windows 7 and 8, and OS X 10.5, 10.6.8, 10.7.5 and 10.8

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Contents

About Audinate

Audinate Pty Ltd is a leading developer of media networking technology whose products and solutions are transforming the way the world interconnects multimedia systems. Audinate's rapidly growing customer base spans the broader international AV industry and includes many key industry brands.

Audinate's hardware and software products and solutions are founded on patented technologies invented by its world-class networking experts. They enable manufacturers and AV system solution providers to produce sophisticated, easy to use, pro-audio quality AV solutions over standard IP networks.

Audinate is based in the United States and in Sydney, Australia.

Digital Media Networking Perfected

About Dante

Audinate's Dante technology provides high performance digital media networking that meets the quality and performance requirements of professional live sound, AV installations and broadcast and recording systems.

Designed to fully exploit the capabilities of today and tomorrow's networking equipment, Dante provides media transport mechanisms that eliminate many traditional audio network design restrictions. Dante makes it easy to set up robust, flexible digital audio networks with virtually unrestricted performance. A Dante network can be designed with mixed Gigabit and 100Mbps network speeds, simultaneously support audio with different sample rates and bit depths, and even allow the design of network zones with different latencies.

Dante is built on Internet Protocols — not just Ethernet. Because it uses standard IP over Ethernet, Dante is capable of running on inexpensive off-the-shelf computer networking hardware, and with the use of standard QoS can share installed networks with other data and computing traffic.

Dante provides sample-accurate synchronization and can deliver the very low latency required by professional audio. Dante's network-centric, audio-independent approach to synchronization allows perfectly synchronized playout across different audio channels, devices and networks, even over multiple switch hops.

Dante makes networking a true plug-and-play process, allowing automatic device discovery and system configuration. Dante-enabled devices will automatically setup their network configuration and advertise themselves and their channels on the network, reducing complicated, error-prone set-up procedures. Instead of "magic numbers", networked devices and their input and output signals can be named to make sense to the user.

Dante is not restricted to allowing configuration and transmission of audio channels. Dante also provides mechanisms to send or receive control and monitoring information across the Dante IP network, including equipment-specific messages and control specified and developed by a particular manufacturer.

With its strong foundations and links to current and evolving network standards, Dante is able to deliver a level of future proofing otherwise unavailable in other types of digital audio transportation. Dante was designed for Gigabit networks from its inception, and Dante as it exists today already incorporates aspects of the emerging AVB networking standards. Continued evolution of its networking technology is an integral part of the Dante roadmap.

Dante technology is available in ready-to-implement hardware and software products, reference designs and development APIs.

For more information, please visit the Audinate website at www.audinate.com.

About the Dante Virtual Soundcard

The Dante Virtual Soundcard is a software application that turns your PC or Mac into a Dante-enabled device, allowing Dante audio traffic to be transmitted and received using the standard Ethernet port. No additional hardware is required.

The latest version of the Dante Virtual Soundcard supports the Core Audio (Mac OS X), Steinberg ASIO (Windows), and WDM (Windows) audio interfaces, and can be used with any supporting audio application.

Once you install the Dante Virtual Soundcard on a PC or Mac and connect it to the Dante network, you can:

- View and change the current audio sample rate
- Customize the receive latency (latency a receiving device should use before playout)
- View and set your Ethernet network interface, and view network interface details
- Start and stop the Dante Virtual Soundcard
- Select the number of audio channels available in the Dante Virtual Soundcard (Core Audio and ASIO only)

On Windows, you can also:

- Select ASIO or WDM mode
- View and set ASIO-specific parameters
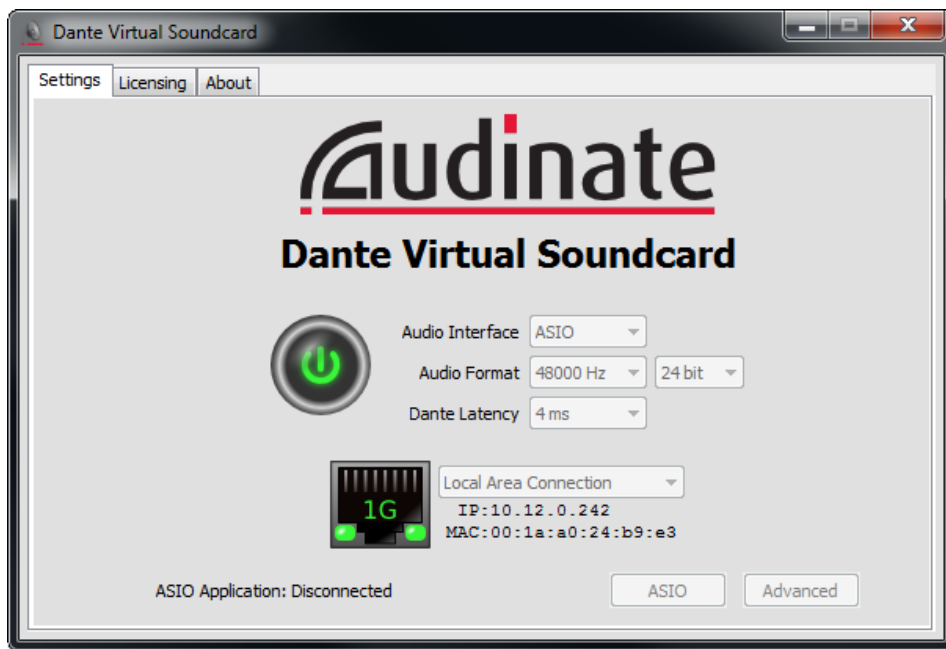
Figure 1 - Running Dante Virtual Soundcard with an active 1Gbit network link (Windows)

What's New in version 3.2

Windows v3.2

Released February 2013

- 44.1 kHz sample rate is now supported
- WDM audio is now supported
- Windows 8 is now supported (32-bit and 64-bit)

OS X v3.2

Released September 2011

The new feature for Dante Virtual Soundcard version 3.2 (Mac OS X only) is the addition of support for Mac OS X 10.7 (Lion), both 32- and 64-bit.

Before you Install: Important Notes

Dante Controller

You must have Dante Controller installed on a PC or Mac on your Dante network to control and route audio. It can be installed on the same computer as Dante Virtual Soundcard.

Dante Controller software can be downloaded from the Audinate website: www.audinate.com

Please refer to the Dante Controller User Guide for installation and operation instructions.

Minimum System Requirements

The tables below list the minimum system specifications your computer should meet to be able to use the Dante Virtual Soundcard in conjunction with a typical audio application such as Steinberg's Cubase. A more powerful computer may be required if the Dante Virtual Soundcard is being used with or alongside other applications requiring significant computing resources or disk I/O transfers.

Disclaimer: It is possible that your computer may meet the requirements below but suffer from some other individual performance limitation related to its particular hardware. Please seek the advice of your computer support team.

Note: The Dante Virtual Soundcard does not support virtual machines - it must be installed on a computer with a standard Windows or Mac OS X operating system.

General

Component	Minimum Requirement
Processor	Dual core CPU
Memory	1 Gigabyte of RAM
Network	Standard wired Ethernet network interface (100Mbps or Gigabit). A Gigabit (1000Mbps) interface is required for channel counts above 32x32 @48kHz. Wireless LAN (Wi-Fi) Ethernet interfaces are not supported.
Storage / Disk	As is the case with any application of this type, higher transfer rates are required for recording and playing back large numbers of audio tracks to and from disk. Disk speeds of 7200rpm and above are recommended for more than 16 channels of record / playback from disk.

Windows

Component	Minimum Requirement
Operating System	Windows 7 and 8 **NOTE**: Both UTF-8 and Unicode are supported EXCEPT for host or device names; the DNS standard does not support Unicode for these.
Windows Drivers	System drivers must be of the performance standard expected by the Windows Logo Program
Audio Application	Must support the ASIO audio device interface for multi-channel recording / playback, or support WDM (Windows Driver Model) audio.

Mac OS X

Component	Minimum Requirement
Operating System	Mac OS X 10.5, 10.6.8, 10.7.5, or 10.8 NOTE: Intel architecture only; PPC not supported
Audio Application	Any audio application using the standard Core Audio interface to a sound card (e.g. iTunes, Cubase, Nuendo, Logic)

Operating System Updates

Ensure your PC or Mac has the latest Windows or Apple Updates installed.

Supporting Services

Dante Virtual Soundcard relies on supporting services for automatic Dante device discovery and for Dante device control and monitoring. These services must be installed and running for Dante software and devices to function properly.

On OS X, Dante Virtual Soundcard relies on the Apple Bonjour service for device discovery. Bonjour is installed as part of OS X, and runs automatically as a background service.

On Windows, Dante Virtual Soundcard uses the Audinate 'Dante Discovery' service for device discovery. Dante Discovery is installed and started automatically when you install Dante Virtual Soundcard.

On OS X and Windows, Dante devices and software use the Audinate 'ConMon' service for control and monitoring. ConMon is installed and started automatically when you install Dante Virtual Soundcard.

Firewall Configuration

Firewall configuration for Windows Firewall and Mac OS X built-in firewall is automatically handled during installation, and on system boot (every time the Dante Virtual Soundcard services start).

The Dante Virtual Soundcard communicates over UDP using the following ports:

- Dante Clock Synchronization: 319, 320
- Dante Audio Routing: 4440, 4444, 4455

- Dante Control and Monitoring: 8700-8705, 8800

- Dante Multicast and Unicast Audio: 4321, 14336 – 14600

If you are using a third-party firewall product, use the port information provided above to configure it accordingly.

Installing the Dante Virtual Soundcard

This section overviews the installation and operation of the Dante Virtual Soundcard.

Downloading Dante Virtual Soundcard

Dante Virtual Soundcard is available for download from Audinate's website.

To download a copy of Dante Virtual Soundcard:

1. Go to Audinate's website: www.audinate.com
2. Navigate to **Support** > **Software Downloads** > **Dante Virtual Soundcard**
3. If not already logged in, you will be asked to log in or register before continuing
4. Once registered, download the version of Dante Virtual Soundcard that you require (Mac OS X or Windows)

This will download a self-installing Dante Virtual Soundcard file.

Installing Dante Virtual Soundcard on Windows

Once you have downloaded the Dante Virtual Soundcard installer file, navigate to the directory where you have downloaded it.

To install:

1. Ensure you are logged on to your PC as an administrator.
2. Double-click the icon for the Dante Virtual Soundcard installer.
3. Read the license text, and if you accept the terms of the agreement, click the 'I Agree...' checkbox.

   If you do not accept the terms, click **Close** to terminate the installation.
4. Click **Install**.
5. Acknowledge / accept any Windows security warnings that are displayed.

Note: If you are upgrading to a new version of Dante Virtual Soundcard, you do not need to uninstall the previous version first. If you do uninstall the previous version before upgrading, you will need to re-enter your license key to activate the software.

Note: If you already have the latest version of Dante Virtual Soundcard installed, running the installer again will allow you to repair or uninstall the application.

Note: If you have Dante Virtual Soundcard selected as the default audio interface in Windows, upgrading to a new version of Dante Virtual Soundcard will reset the selection to an alternative interface, and you will need to reselect Dante Virtual Soundcard following the upgrade.

Installing Dante Virtual Soundcard on Mac OS X

To install the Dante Virtual Soundcard on Mac OS X:

1. Double-click the Dante Virtual Soundcard .dmg file.

2. A drive icon will appear on your Desktop Finder window. Double click it to open.

3. Double-click the Dante Virtual Soundcard.pkg. This will run the installer.

4. Read the license text, and if you accept the terms of the agreement, click **Agree**.

   If you do not accept these terms, click **Disagree** to terminate the installation.

Uninstalling Previous Versions

You do not usually need to uninstall a previous version of Dante Virtual Soundcard before installing a new version.

However, if you should need to uninstall Dante Virtual Soundcard:

Windows

- To uninstall via the Windows Control Panel: **Start** > **Control Panel** > **Add or Remove Programs**
- To uninstall via the Audinate uninstaller: **Program files** > **Audinate** > **Dante Virtual Soundcard** > **Uninstall**

Mac OS X

To uninstall previous versions of the Dante Virtual Soundcard, please use the Uninstall tool available in the new .dmg file. Refer to the section Installing Virtual Soundcard on Mac OS X for more detail.

Starting the Dante Virtual Soundcard Control Panel

The Dante Virtual Soundcard Control Panel enables user interaction with Dante Virtual Soundcard.

Windows

By default the Dante Virtual Soundcard will be installed in:

`C:\Program Files\Audinate\Dante Virtual Soundcard\`

In 64-bit Windows, it will appear under `C:\Program Files (x86)`

The Dante Virtual Soundcard Control Panel can be started in one of two ways:

- Using the Start menu: **Start** > **Programs** > **Audinate** > **Dante Virtual Soundcard** > **Dante Virtual Soundcard**; or

- Navigate to the directory where it is installed, and click the Dante Virtual Soundcard icon:

Mac OS X

The Dante Virtual Soundcard application will be installed in the Applications folder.

To start the Dante Virtual Soundcard Control Panel:

- Navigate to the Applications folder, and click the Dante Virtual Soundcard icon:

Obtaining a Dante Virtual Soundcard License

Dante Virtual Soundcard will not operate until a valid License ID has been entered and activated.

The first time you start the Dante Virtual Soundcard Control Panel, you will be presented with a screen that looks similar to the following:

Figure 2 - Dante Virtual Soundcard Licensing Screen - Unlicensed

Obtaining a License ID

You are required to register with Audinate at www.audinate.com and provide an email address to obtain a valid License ID for Dante Virtual Soundcard.

Note: If you have purchased a Dante product that entitles you to a free or discounted copy of Dante Virtual Soundcard, details of how to obtain this will be provided in the documentation accompanying your product.

If the machine on which you are installing Dante Virtual Soundcard is connected to the Internet, click the **Get a License** button to be taken directly to the Audinate website.

Entering a License ID

Once you have obtained a License ID, it can be entered in the Licensing tab. The **Activate** button is not enabled until a correctly formatted License ID has been entered into the dialog box.

Click **Activate** to register the installation with the Audinate servers.

Note: Ensure that the machine has access to the Internet during this step.

Once this step has been completed, a "Licensed to …" message will appear, and the software is ready for use. The Control Panel will appear as shown below:

Figure 3 - Dante Virtual Soundcard Licensing Screen - Licensed (Windows)

If you are using a trial license the Control Panel will appear as shown below:

In order to continue to use the Dante Virtual Soundcard after the trial period has expired, you will need to purchase a full license.

Configuring Dante Virtual Soundcard

It is important to understand that the Control Panel that is displayed when you click on the Dante Virtual

Soundcard icon 🔊 is a means of configuring and controlling Dante Virtual Soundcard, it is NOT the Dante Virtual Soundcard itself.

When you open the Dante Virtual Soundcard Control Panel, you are presented with a window with three tabs: Settings, Licensing and About. The **Settings** tab is selected by default when the application is opened.

Settings Tab

The Settings tab is the first screen you see when you open the Dante Virtual Soundcard Control Panel.

ℹ️ **Note:** Settings cannot be changed while the Dante Virtual Soundcard is running, or when an ASIO application is connected.

If an ASIO application (such as Cubase or Logic) is currently connected to the Dante Virtual Soundcard, the message "ASIO Application: Connected" will be shown at the bottom of the Settings Tab.

How to Change Dante Virtual Soundcard Settings

To change settings:

1. Completely quit out of any applications that are using the Dante Virtual Soundcard.
2. Stop the Dante Virtual Soundcard.
3. Change your Dante Virtual Soundcard settings.
4. Start the Dante Virtual Soundcard.
5. Restart your application/s.

ℹ️ **Note:** If you do not quit out of any applications that are using the Dante Virtual Soundcard before changing settings, the application may prevent the new settings from taking effect.

Figure 5 - Dante Virtual Soundcard Settings screen (Windows)

ON / OFF Button

The Settings Tab indicates whether Dante Virtual Soundcard is on or off and allows the user to change this status, via an ON/OFF button:

Green: the Dante Virtual Soundcard is running

Greyed out: the Dante Virtual Soundcard is not running

Click this button to toggle the state of Dante Virtual Soundcard. When Dante Virtual Soundcard is running, all other buttons and drop-down lists on the Settings Tab are greyed out.

Important: If you are recording via Dante Virtual Soundcard, stop the recording before you switch Dante Virtual Soundcard off. Switching Dante Virtual Soundcard off during a recording can lead to driver instability issues.

Note: Dante Virtual Soundcard can be either on or off (running or not running) when the Dante Virtual Soundcard Control Panel is started. It will always be in the state it was in when the Control Panel was last closed. If the computer is power cycled, Dante Virtual Soundcard will resume in the state it was in when the computer was powered off.

When Dante Virtual Soundcard is running, it will be visible on a Dante Controller on the network. It will appear on the network with a label identical to the computer name.

> ⓘ **Note:** The device label for Dante Virtual Soundcard in Dante Controller can only be changed by changing the name of the computer itself.

Audio Interface

Windows only

Use the Audio Interface button to switch between ASIO and WDM audio engines. Dante Virtual Soundcard must be switched off (via the power button on the control panel) before you can switch audio interfaces. You will need to reboot your PC after changing the audio interface.

ASIO

In ASIO mode, Dante Virtual Soundcard supports audio applications that use ASIO audio, for example Steinberg Cubase, Avid Pro Tools and Abelton Live.

In ASIO mode, the ASIO Settings and Advanced buttons are enabled.

WDM

In WDM mode, Dante Virtual Soundcard supports audio applications that use WDM audio, for example iTunes for Windows, Windows Media Player and Skype.

Audio Format

Two drop-down boxes on the Settings Tab allow you to select the audio format that Dante Virtual Soundcard supports. The sample rate drop-down box is immediately to the right of the **Audio Format** label. The bit-depth drop-down box is immediately to the right of the sample rate drop-down box. The purpose and allowed values of these drop-down boxes is as follows:

Drop-down box	Purpose	Allowed values
Sample rate	View and set the sample rate	44,100 Hz (44.1 kHz)* 48,000 Hz (48 kHz) 96,000 Hz (96 kHz)**
Bit depth	View and set the bit depth. Currently only 24-bit is supported	24-bit

* not supported in OS X

** not supported by WDM mode (Windows)

Dante Latency

The Dante latency drop-down box allows you to view and set the receive latency.

A Dante device receiving audio from Dante Virtual Soundcard will use this value. It needs to compensate primarily for computer scheduling jitter, as well as delay variations encountered in the network. Allowed values are as follows:

- 4ms (low)
- 6ms (medium)
- 10ms (high)

As a rule of thumb, 4ms can be used where Dante Virtual Soundcard is running on a high-spec PC with low scheduling jitter. Computers with poor scheduling performance may need to use the 10ms Dante Latency setting.

ℹ **Note:** If the Dante Latency setting is set too low to compensate for network delay variation and computer scheduling jitter, there is a risk of intermittent loss of audio.

Network Interface Icon

The Network Interface Icon is displayed below the in the Settings Tab below the ON/OFF button. It shows the status of the network interface being used by the Dante Virtual Soundcard. It can have the following values:
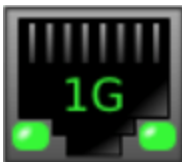
Active 1Gbps Ethernet network interface detected.

Active 100Mbps Ethernet network interface detected.

No Ethernet network detected.

Selecting a Network Interface

To the right of the Network Interface Icon is a drop-down box which allows you to see and select the network interface that the Dante Virtual Soundcard uses. The available entries in the drop-down box will be all the wired Ethernet network interfaces on the machine. For machines with only one Ethernet network interface, there will only be one option available.

The IP Address and Ethernet MAC address of the currently selected interface are displayed below the drop-down box.

ℹ **Note:** Dante Virtual Soundcard can NOT use wireless, USB, Bluetooth or bridged Ethernet interfaces.

ℹ **Note:** All Dante applications on the same computer have a shared understanding of the primary Dante interface. For example, if you have installed Dante Controller on the same PC as Dante Virtual Soundcard, and a new primary interface is selected from within Dante Controller, Dante Virtual

i Soundcard will automatically switch to the newly selected interface, and begin operating on that interface.

ASIO Settings

This button is only available in Dante Virtual Soundcard for Windows, in ASIO mode. The Mac version of Dante Virtual Soundcard uses Core Audio, and has no related user-configurable settings.

The ASIO settings that can be viewed and adjusted in Dante Virtual Soundcard for Windows are as follows:

Setting	Description	Allowed values
Buffer Size	Size (in audio samples) of the ASIO buffer used when transporting audio between Dante Virtual Soundcard and the audio application. Again, computers with poor scheduling performance will need to use a higher setting. On first installing Dante Virtual Soundcard, the Buffer size is set to 128 samples.	32, 64, 128, 256, 512, 1024, or 2048 samples
Encoding	Default: 24 bit. The bit depth required by the audio application being used with Dante Virtual Soundcard. Some audio applications may not support the Dante network's native 24 bit, and will need a different bit depth set at the ASIO interface. All received audio is truncated (if 16 bit) or padded (if 32 bit) to the value the application supports, and conversely truncated or padded to 24 bit audio for transmission on the Dante network. Unless your audio application does not support 24 bit, this should be left at the default, as changing this value may result in loss of audio quality.	16, 24 or 32 bits
ASIO Latency	Latency to insert before transmitting audio from the ASIO buffer on to the Dante network. This compensates for the variability in computer scheduling. On first installing Dante Virtual Soundcard, the ASIO latency is set to 10ms.	1, 2, 3, 5, 10 and 20ms

Advanced Settings

ASIO mode only

Allows the user to set the number of transmit and receive Dante audio channels available and advertised on the network. This enables the number of channels shown in the Dante Controller and the audio application to be limited to only the number the user requires. Allowed settings are 2 x 2, 4 x 4, 8 x 8, 16 x 16, 32 x 32 and 64 x 64.

⚠️ **Important:** The maximum number of Dante audio channels that can be reliably recorded or played out by Dante Virtual Soundcard is dependent on the network speed and sample rate. The maximum recommended number of Dante audio channels to be recorded or played out by Dante Virtual Soundcard is shown in the table below.

Network speed	Maximum Channels @48kHz/24bit	Maximum Channels @96kHz/24bit
100Mbps	32x32	16x16
1000Mbps (Gigabit)	64x64	32x32

ℹ️ **Note:** A Gigabit network is recommended for best performance.

ℹ️ **Note:** For recording and playing back more than 16 audio tracks to and from disk, disk speeds of 7200rpm and above are recommended.

Licensing Tab

The Licensing Tab allows you to see the status of the license you have, and if necessary enter a new license key and re-activate the Dante Virtual Soundcard. If you have a trial license it will display the number of days remaining before the trial license expires.

See Obtaining a Dante Virtual Soundcard License for more details on the use of this tab.

About Tab

The About Tab shows you the version of Dante Virtual Soundcard that you have installed. It also allows you to read the End User License Agreement.

Using the Dante Virtual Soundcard with an Audio Application

Important Notes

The Dante Virtual Soundcard acts in a very similar way to a hardware soundcard.

Note: Make sure that you start the Dante Virtual Soundcard with the settings you require, BEFORE you start your audio application.

Note: Digital Audio Workstations treat Dante Virtual Soundcard like any other ASIO (Windows), WDM (Windows) or Core Audio (Mac OS X) device. For support information about using audio devices (including Dante Virtual Soundcard) with your DAW, please use the support services provided by the manufacturer of your DAW.

Choosing an Audio Application

Dante Virtual Soundcard acts like a standard Core Audio device in a Mac OS X machine, and like an ASIO or WDM sound device in a PC running Windows.

ASIO for Windows

In ASIO mode, Dante Virtual Soundcard is compatible with audio applications that support the ASIO standard. This is the interface preferred by most pro audio applications, such as Cubase, Pro Tools and Ableton Live.

WDM for Windows

In WDM mode, Dante Virtual Soundcard supports common audio applications available for Windows, such as Windows Media Player, iTunes and Skype.

Core Audio Mac OS X

The Core Audio interface is used by almost all audio applications available for Mac OS X. This allows you to use Dante Virtual Soundcard with applications ranging from professional audio applications such as Logic, to media players such as iTunes.

Choosing Dante Virtual Soundcard as your Audio Interface

Audio applications generally provide a mechanism for selecting the sound card that they will use. Before configuring the application to use Dante Virtual Soundcard as its audio interface, make sure you have

started Dante Virtual Soundcard with the required settings (and in Windows, with the correct interface mode selected - ASIO or WDM).

Choosing DVS as your Audio Interface - Windows
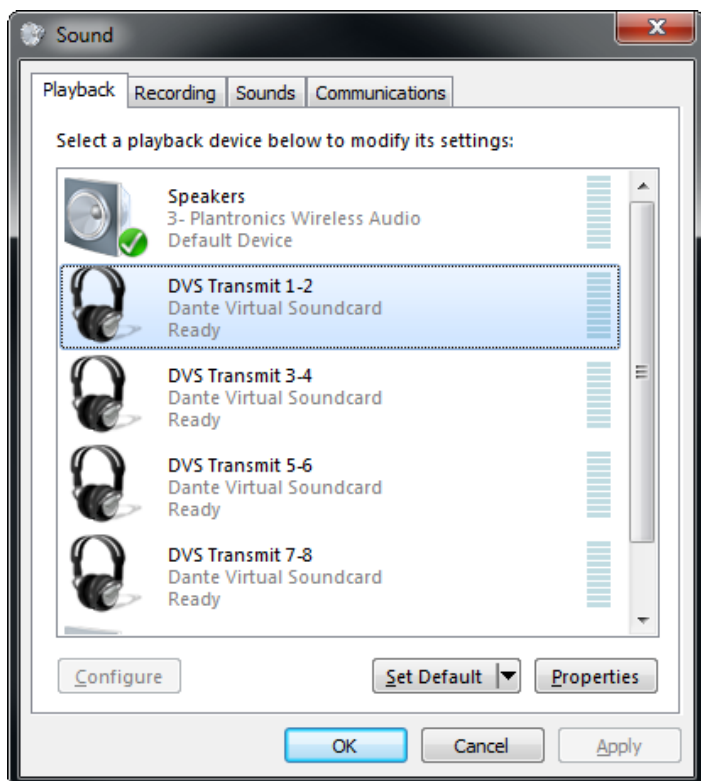
ASIO

Select and configure Dante Virtual Soundcard as your audio interface from within the audio application. It should appear as 'Dante Virtual Soundcard' in the list of available soundcards. Note that if 'Dante Virtual Soundcard' does not appear in the list of available soundcards, it is either not running, or not operating correctly.

Use the ASIO and Advanced buttons to configure options such as buffer size, latency and channel count.

WDM

Dante Virtual Soundcard supports 8 channels (4 stereo pairs) in WDM mode. Each stereo pair appears as an independent selectable audio device in any relevant Windows and supporting application dialogs.

Show me how Dante Virtual Soundcard appears in the Windows 7 Sound Playback options

Note: Dante Virtual Soundcard stereo pairs will appear as selectable audio interfaces in Windows regardless of the current mode - i.e. with Dante Virtual Soundcard in ASIO mode, it will still appear as a set of selectable audio interfaces in the Windows sound playback options dialog. Similarly, in WDM mode, it will appear as a selectable audio interface in an ASIO-supporting DAW. However, it will not function correctly unless the currently selected mode matches the requirements of the application.

Windows Audio Shared Mode

Windows allows applications to share audio interfaces.

If applications with differing sample rates share an audio interface, their sample rates are automatically brought into line by Windows, so it can mix the audio streams. This will result in sample rate conversion on one of the audio streams, which can adversely affect audio quality.

To prevent Windows performing sample rate conversion on Dante Virtual Soundcard audio, the 'Shared Mode' default format for all Dante Virtual Soundcard channels should be set to match the sample rate currently selected on the Dante Virtual Soundcard control panel.

To set the shared mode default format:

1. Open the Windows Sound options dialog (**Start** > **Control Panel** > **Sound**).

2. With the Playback tab selected, double-click the 'DVS Transmit 1-2' entry in the interface list.
   The 'DVS Transmit 1-2 Properties' dialog is displayed.
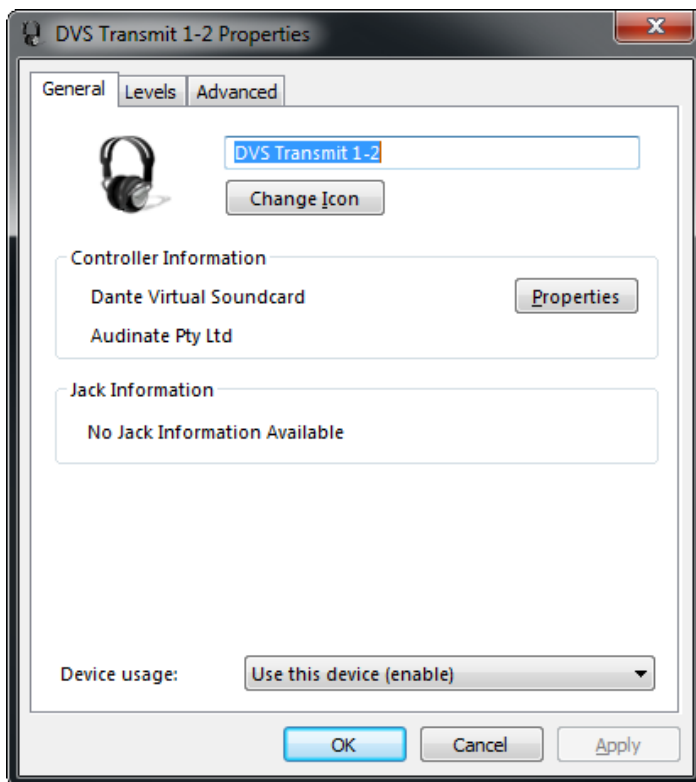
3. Select the Advanced tab.

4. Set the Default Format to the required setting (the Audio Format value displayed on the Dante Virtual Soundcard control panel).

5. Click OK.

6. Repeat for all Dante Virtual Soundcard stereo pairs.

7. Repeat again for the Recording tab.

8. Click OK.

Choosing DVS as your Audio Interface - OS X

You will need to set Dante Virtual Soundcard as the system's default soundcard in order to use applications like iTunes. More sophisticated audio applications such as Logic allow you to select the soundcard from within the application itself.

For applications which allow a soundcard to be selected, choose 'Dante Virtual Soundcard' from the list of available soundcards for both input and output. Note that if 'Dante Virtual Soundcard' does not appear in the list of available soundcards, it is either not running, or not operating correctly.

For applications which do not have a mechanism to select a soundcard from within the application, the System Preferences panel must be used to configure the default sound output and input settings as shown in the following screens:

Figure 6 - Configuring Sound on Mac OS X - System Preferences
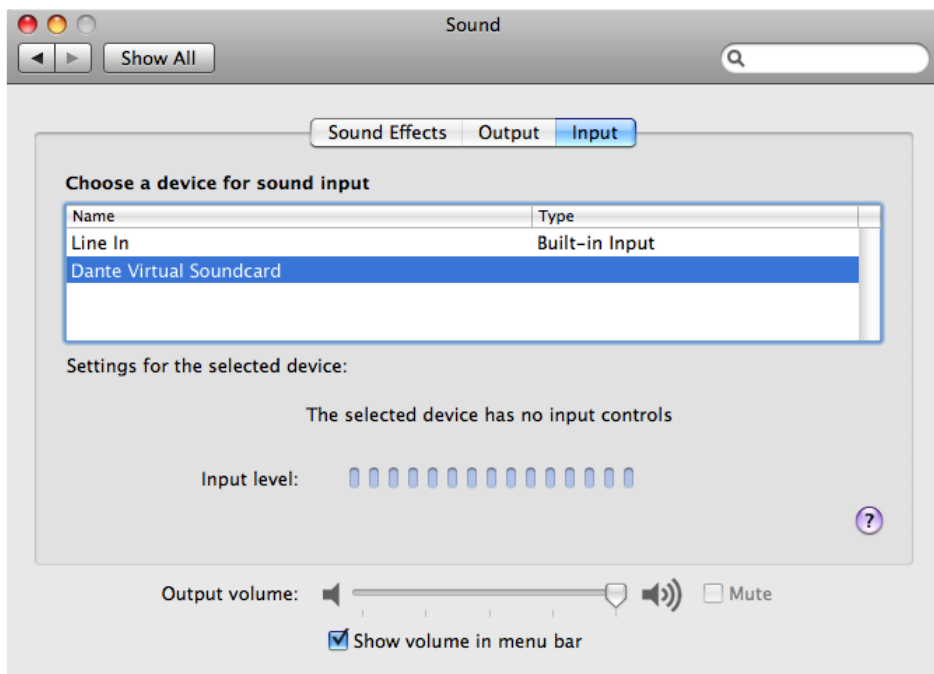
Figure 7 - Configuring Sound on Mac OS X - Input
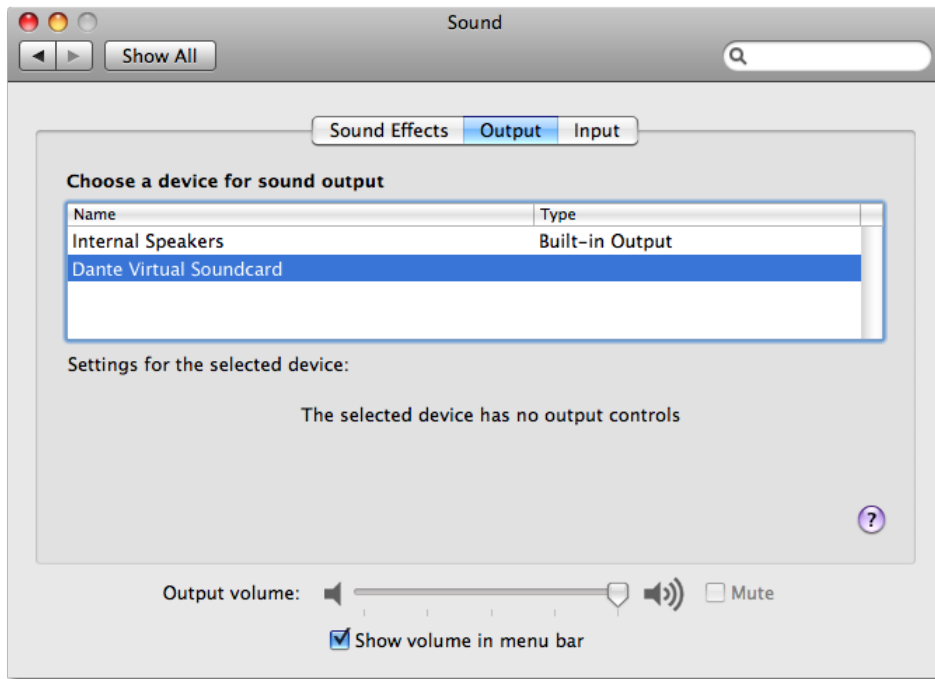
Figure 8 - Configuring Sound on Mac OS X - Output

The system sound effects should be sent to the built-in speakers rather than Dante, so that they don't interfere with the audio travelling over the network:
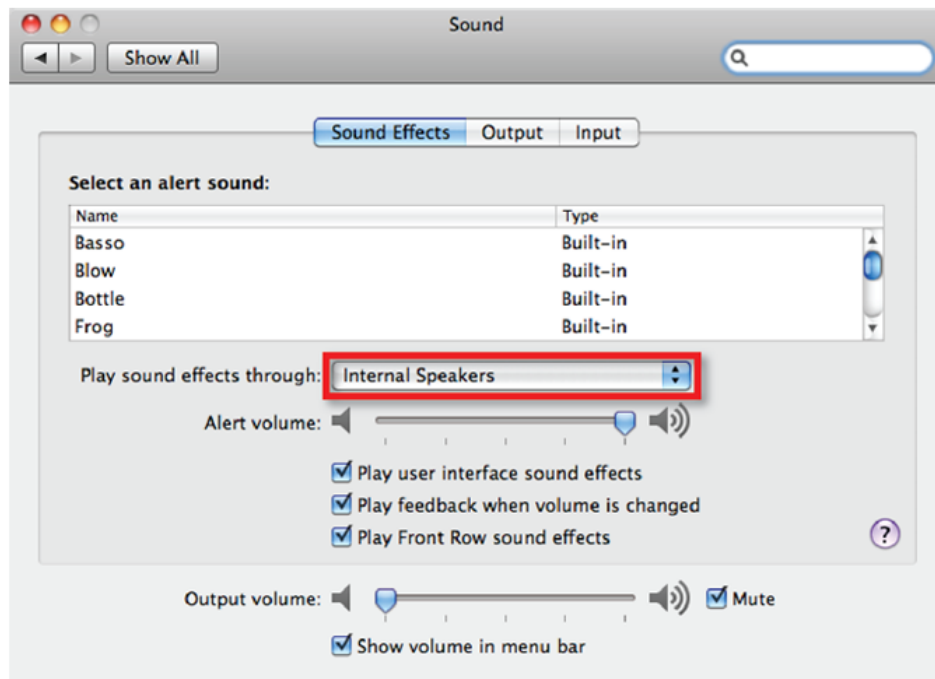
Figure 9 - Configuring Sound on Mac OS X - Internal Speakers

Troubleshooting

Possible Messages on Startup

Error Message	Meaning & Actions
System clock has gone backwards since DVS was last run	**Meaning**: The standard licensing mechanism used in Dante Virtual Soundcard checks whether the system clock has been set backwards to detect deliberate attempts at fraud. **Action**: If you still have a valid Dante Virtual Soundcard License ID, you can uninstall Dante Virtual Soundcard, then reinstall and use your License ID to reactivate.
The DVS Manager service is not available, please try again in a few minutes	**Meaning**: On some computers, system services may take a long time to start when the computer is rebooted and you may be able to log in and open the Dante Virtual Soundcard Control Panel before all required services are available. **Action**: To resolve this, please wait a few minutes to allow the services to start and try again. The Dante Virtual Soundcard Control Panel should then start normally.

Possible Messages During Operation

Error Message	Meaning & Actions
The DVS Manager service is not available, please try again in a few minutes	**Meaning**: On some computers, system services including the DVS Manager service may not recover from a System Suspend or Hibernate. **Action**: To resolve this, please exit Dante Virtual Soundcard and restart.

Possible Messages During Licensing

Error Message	Meaning & Actions
The licensing server couldn't be found	**Meaning**: Dante Virtual Soundcard could not find the IP address of the Audinate Licensing Server. Likely to be caused by local network DNS failure or Proxy settings. **Action**: Wait and try again in case the issue is temporary. If the problem persists please talk to your local IT support staff.

Error Message	Meaning & Actions
Communication error while contacting server	**Meaning**: Dante Virtual Soundcard could not make a network connection to the Audinate Licensing Server. Likely to be due to either network or local proxy settings. **Action**: Wait and try again in case the issue is temporary. If the problem persists please talk to your local IT support staff.
DVS is not licensed for use via terminal server	**Meaning**: Dante Virtual Soundcard is not supported and will not activate on a Windows PC with Terminal Services (Remote Desktop) running. **Action**: Deactivate Terminal Services on the PC.
DVS is not licensed for use on virtual machines	**Meaning**: Dante Virtual Soundcard is not supported and will not activate if it is installed on a Virtual Machine. **Action**: You will need to install Dante Virtual Soundcard on a computer with a standard Windows or Mac OS X operating system install.
The license server has no knowledge of license ID XXXX..	**Meaning**: The License ID that has been entered is not a known Dante Virtual Soundcard License ID. **Action**: Check to make sure a valid Dante Virtual Soundcard License ID has been entered, and not a different product serial number.
The license has been activated too many times	**Meaning**: A Dante Virtual Soundcard License can only be activated a limited number of times, and this activation limit has been exceeded.

Further Dante Troubleshooting

The Dante Controller User Guide and the Dante FAQs contain further information regarding troubleshooting issues you may be experiencing with Dante software and network configuration and operation.

Index

-32-