

# Digidesign CoreAudio Driver Usage Guide

Version 7.1 for Pro Tools LE Systems on Mac OS X 10.4 (“Tiger”) Only

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## Introduction

This document covers two versions of the CoreAudio Driver, as follows:

### Digidesign CoreAudio Driver

The Digidesign CoreAudio Driver works with Digi 002<sup>®</sup>, Digi 002 Rack<sup>™</sup>, and original Mbox<sup>™</sup> systems only. See “Digidesign CoreAudio Driver” on page 2.

### Mbox 2<sup>™</sup> CoreAudio Driver

The Mbox 2 CoreAudio Driver works with Mbox 2 systems only. See “Mbox 2 CoreAudio Driver” on page 8.

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## Installing the CoreAudio Driver

Your Pro Tools system’s CoreAudio Driver is automatically installed when you install Pro Tools (it is a separate option in the Pro Tools installer, but it is selected for installation by default).

 For complete instructions on installing Pro Tools, see the Getting Started Guide for your Pro Tools system.

### Standalone CoreAudio Drivers

To use the Digidesign CoreAudio Driver or Mbox 2 CoreAudio Driver without Pro Tools, use its standalone version, which is part of the Standalone CoreAudio Drivers installer that is available on the Digidesign Web site ([www.digidesign.com](http://www.digidesign.com)). The Standalone CoreAudio Drivers installer includes the standalone versions of the Digidesign CoreAudio Driver and the Mbox 2 CoreAudio Driver.

 *If a previous version of either CoreAudio Driver is already installed on your system, the Standalone CoreAudio Drivers installer will automatically overwrite the previous version of the driver.*

### To install the standalone versions of the Digidesign CoreAudio Driver and Mbox 2 CoreAudio Driver:

- 1 From the Digidesign Web site, download the Standalone CoreAudio Drivers installer.
- 2 Locate the downloaded installer files and double-click the Install CoreAudio icon.
- 3 Follow the on-screen instructions to install the standalone drivers.
- 4 When the installation is complete, quit the installer and restart your computer.

The file *Digidesign CoreAudio.plugin* is installed in the following directory: /Library/Audio/Plug-Ins/HAL. The Digidesign CoreAudio Manager application is also installed on your hard drive in /Applications/Digidesign.

The *DigidesignMbox2.kext* file and *DigidesignMbox2Boot.kext* files are installed in the /System/Library/Extensions directory.

## Removing the Digidesign CoreAudio Drivers

There are different steps for removing the CoreAudio Drivers, depending on whether you are using the version installed with Pro Tools or the standalone version.

### To remove Pro Tools and the CoreAudio Drivers from your computer:

- 1 Make sure you are logged in as an Administrator for the account where Pro Tools is installed. For details on Administrator privileges in Mac OS X, refer to your Apple OS X documentation.
- 2 Insert the Pro Tools Installer CD in your CD-ROM drive or locate the downloaded Installer file.
- 3 Double-click "Install Pro Tools."
- 4 Enter your Administrator password and click OK.
- 5 In the Installer window, choose Uninstall from the pop-up menu, verify that Pro Tools and CoreAudio Driver are checked, and click Uninstall.
- 6 Follow the on-screen instructions to remove Pro Tools.
- 7 When finished, click Quit to close the Installer window.

### To remove the standalone versions of the Digidesign CoreAudio Driver and Mbox 2 CoreAudio Driver:

- 1 From the Digidesign Web site, download the Standalone CoreAudio Drivers.
- 2 Locate the downloaded installer files and double-click the Install CoreAudio icon.
- 3 In the Install CoreAudio window, select Uninstall from the Custom Install pop-up menu.
- 4 Click Uninstall.
- 5 When the uninstall process is complete, quit the CoreAudio Installer.

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## Digidesign CoreAudio Driver

The Digidesign CoreAudio Driver is a multi-client, multichannel sound driver that allows CoreAudio-compatible applications to record and play back through the following Digidesign hardware:

- Digi 002
- Digi 002 Rack
- Mbox

Full-duplex recording and playback of 24-bit audio is supported at sample rates up to 96 kHz, depending on your Digidesign hardware and CoreAudio client application.

The Digidesign CoreAudio Driver will provide up to 18 channels of input and output, depending on your Pro Tools system:

- Up to 18 channels of I/O with Digi 002 and Digi 002 Rack systems
- Up to 2 channels of I/O with Mbox systems



*Check the Digidesign Web site ([www.digidesign.com](http://www.digidesign.com)) for the latest third-party drivers for Pro Tools hardware, as well as current known issues.*

## Limitations of the Digidesign CoreAudio Driver

The Digidesign CoreAudio Driver has the following limitations:

- ◆ Pro Tools is not a CoreAudio application and therefore requires exclusive access to Digidesign hardware. You cannot use CoreAudio applications and Pro Tools at the same time. To use Pro Tools, make sure you quit any CoreAudio applications before starting Pro Tools. To use a CoreAudio application, make sure you quit Pro Tools before starting any CoreAudio application.
- ◆ The Digidesign CoreAudio Driver cannot be used to preview sound files from the Macintosh Finder. When a sound file is located in the Mac OS X navigation window, a QuickTime transport bar is displayed next to it. The QuickTime transport bar lets you audition the sound file. The sound will always play back through the Macintosh's built-in audio controller (through the Macintosh speaker or headphone jack). However, if you double-click a sound file, the QuickTime application will launch, and can use the Digidesign CoreAudio Driver for playback.
- ◆ The Digidesign CoreAudio Driver cannot be used for playback of Macintosh System Sounds.

## Compatibility

This version of the Digidesign CoreAudio Driver can be used on Digidesign-qualified Pro Tools systems running on Macintosh, or it can be used as a standalone driver on Digidesign-qualified Macintosh systems that do not have Pro Tools installed.

Digidesign can only assure compatibility and provide support for hardware and software it has tested and approved. For a list of Digidesign hardware systems, Digidesign-qualified computers, operating systems, and devices, and Digidesign-qualified third-party CoreAudio-compatible applications, refer to the Digidesign Web site ([www.digidesign.com](http://www.digidesign.com)).

## Configuring the Digidesign CoreAudio Driver

You can configure the Digidesign CoreAudio Driver using Digidesign CoreAudio Manager, or from within most third-party CoreAudio-compatible client applications (such as BIAS Peak or Logic Audio). Refer to the manufacturer's documentation for more information.

Some applications (such as Apple's iTunes or QuickTime Player), also require that you configure either the Apple Sound Preferences or Apple Audio MIDI Setup to use the Digidesign CoreAudio Driver.

## Digidesign CoreAudio Manager

Use Digidesign CoreAudio Manager to change the CoreAudio Buffer Size setting, access the Hardware Setup dialog for your Digidesign hardware and control volume and mute for the CoreAudio driver. Digidesign CoreAudio Manager also identifies your Digidesign hardware, the supported number of Input and Output Channels and the number of attached clients (applications).

Digidesign CoreAudio Manager cannot be accessed under the following circumstances:

- When Pro Tools is running
- When another application is using Direct IO (such as the Ableton Live Digi Edition)

The Digidesign CoreAudio Manager application launches automatically when the first client application accesses the CoreAudio driver. You can prevent an application from accessing the CoreAudio driver by holding down the Shift key just before the application would access the CoreAudio driver, typically during launch of the application. Certain applications (such as Apple Mail and iChat), do not access the CoreAudio application until they first play a sound, so you will need to hold down the Shift key just prior to sound playback in order to prevent the use of Digidesign hardware for playback.

## Buffer Size

You may select from the following buffer sizes (depending on your Digidesign hardware):

- 128 samples
- 256 samples
- 512 samples
- 1024 samples
- 2048 samples

◆ Small buffers have the advantage of low latency in the record monitor path, but also are more taxing on your computer's CPU and could contribute to dropouts in your audio during record or playback. (Latency is the time delay between a signal entering the audio inputs and leaving the outputs during recording.)

◆ Larger buffers have the advantage of making the Digidesign CoreAudio Driver more immune to audio dropouts during playback and recording, but can cause a noticeable delay when monitoring your inputs in the recording process. In some CoreAudio-client applications, performing various tasks will interrupt the CoreAudio Driver and may result in clicks and pops in audio playback or recording. Choosing medium or large buffers (such as 512 or 1024) can help alleviate this problem.

Changing the Buffer Size for the Digidesign CoreAudio Driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.

### To configure Digidesign CoreAudio Hardware Buffer Size:

1 Double-click the Digi CoreAudio Manager file (located in /Applications/Digidesign).

2 From the Buffer Size pop-up menu, select the desired CoreAudio buffer size (in samples). Generally, smaller buffer sizes are preferable. However, if you experience any problems with performance (such as clicks and pops during recording or playback), try increasing the CoreAudio Buffer Size setting. You can also change the buffer size from within the client application if it is the only client attached to the CoreAudio driver. Once two or more clients are active, you will not be able to change the sample rate or the buffer size.

## HW Setup Button

The HW Setup button opens the Hardware Setup dialog for your Digidesign hardware. The HW Setup button will only be available when no clients are using the CoreAudio driver.

### To configure Digidesign CoreAudio HW Setup:

1 Quit any CoreAudio client applications.

1 Double-click the Digi CoreAudio Manager file (located in /Applications/Digidesign).

2 Click the HW Setup button to open the Hardware Setup dialog.

3 Configure the Hardware Setup dialog for your Digidesign hardware.

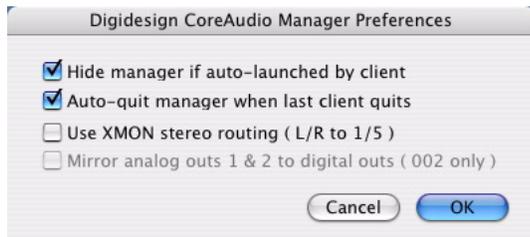


*For more information on the Hardware Setup dialog, refer to your Getting Started Guide or the Pro Tools Reference Guide.*

4 When you are finished, click OK to close the Hardware Setup dialog.

## Prefs Button

The Prefs button opens the Digidesign CoreAudio Manager Preferences dialog for the Manager application. There are several options available for control and configuration of the Manager application. When finished setting these options, click OK to close the Digidesign CoreAudio Manager Preferences windows.



### Digidesign CoreAudio Manager Preferences

**Hide Manager if Auto-Launched by Client** Enable this option to hide the Manager panel after the first client application accesses the CoreAudio driver. To open the Manager panel, click on the Digidesign CoreAudio Manager application icon in the Dock.

**Auto-Quit Manager when Last Client Quits** Enable this option to make the Manager application quit when there are no longer any clients using the CoreAudio driver.

**Use XMON Stereo Routing (L/R to 1/5)** When using D-Control or D-Command, enable this option to configure the CoreAudio driver to output through the D-Control or D-Command standard stereo routing (outputs 1 and 5).

**Mirror Analog Outs 1 & 2 to Digital Outs (002 Only)** When using Digi 002 or Digi 002 Rack, enable this option to mirror the main outputs through the digital outputs that are selected in the Hardware Setup dialog.

## Connect Button

The Connect button is available when the Digidesign CoreAudio Manager is launched and cannot connect with the Digidesign hardware (such as when Pro Tools is launched and the hardware is disconnected or disabled). Before trying to connect, make sure to quit Pro Tools and make sure that your hardware is connected and turned on. You can then click on the Connect button to acquire the hardware.

**⚠** *If any application is launched prior to pressing the Connect button and you want that application to use the CoreAudio driver for playback, you will need to quit and relaunch the application for it to connect properly to the Digidesign CoreAudio Manager.*

## Quit Button

Use the Quit button to quit the Digidesign CoreAudio Manager. Be sure to quit any client applications before using the Quit button in the Manager. If any applications are currently attached to the Manager application when quitting, you may get an error message indicating that the Digidesign hardware is no longer available. You may have to change the application's preferences to use different hardware for playback or possibly quit and relaunch the application for proper playback to be resumed.

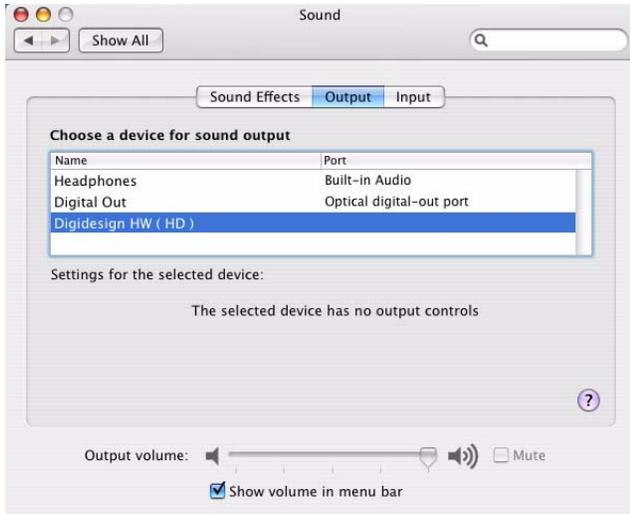
## Configuring the Apple Sound Preferences or Apple Audio MIDI Setup

To use your Digidesign hardware with certain CoreAudio-compatible playback applications (such as Apple iTunes or QuickTime Player), you will need to configure either Sound Preferences or Audio MIDI Setup in addition to Digidesign CoreAudio Manager. However, for most CoreAudio-compatible client applications (such as BIAS Peak or Cubase SX) this is unnecessary, because you can configure the CoreAudio Buffer Size setting and input and output channels from within the client application.

## Apple Sound Preferences

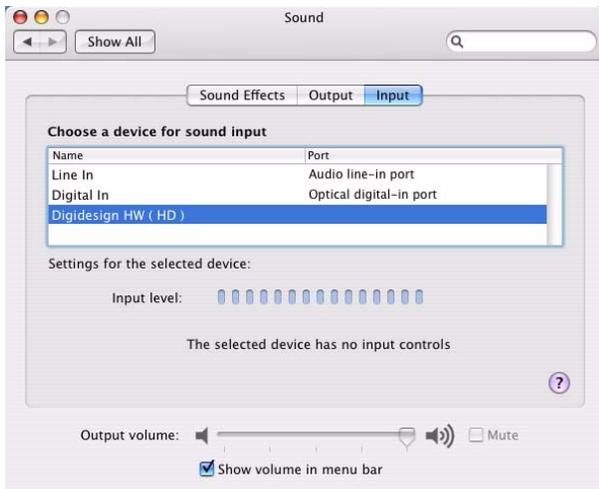
To configure the Apple Sound Preferences:

- 1 Launch System Preferences (Apple menu > System Preferences).
- 2 Click Sound.
- 3 Click Output and select Digidesign HW as the device for sound output.



*Sound Preferences, Output settings*

- 4 Click Input and select Digidesign HW as the device for sound input.



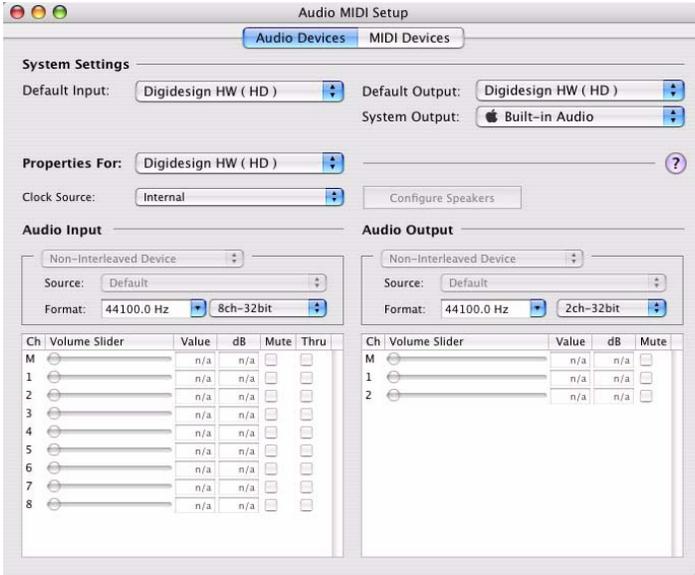
*Sound Preferences, Input settings*

- 5 Quit System Preferences.

## Apple Audio MIDI Setup

To configure the Apple Audio MIDI Setup:

- 1 Launch Audio MIDI Setup (located in Home/Applications/Utilities).
- 2 Click Audio Devices.



Apple Audio MIDI Setup application, Audio Devices settings

3 From the System Settings Default Input pop-up menu, choose Digidesign HW.

4 From the System Settings Default Output pop-up menu, choose Digidesign HW.

**⚠** Leave System Output set to Built-in Audio. The Digidesign CoreAudio Driver cannot be used for system sounds.

**📖** For information on configuring MIDI devices in AMS, see the Getting Started Guide for your Pro Tools system.

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## Mbox 2 CoreAudio Driver

The Mbox 2 CoreAudio driver is a multi-client, multichannel sound driver that allows CoreAudio compatible applications to record and play back through Mbox 2 hardware.

Full-duplex recording and playback of 24-bit audio is supported at sample rates up to 48 kHz, depending on your CoreAudio client application. The Mbox 2 CoreAudio driver will provide up to four channels of input and two channels of output.

 Check the Digidesign Web site ([www.digidesign.com](http://www.digidesign.com)) for the latest third-party drivers for Pro Tools hardware, as well as current known issues.

### Compatibility

The Mbox 2 CoreAudio Driver can only be used on Digidesign-qualified Pro Tools Mbox 2 systems running on Digidesign-qualified versions of Macintosh.

Digidesign can only assure compatibility and provide support for hardware and software it has tested and approved. For a list of Digidesign hardware systems, Digidesign-qualified computers, operating systems, and devices, and Digidesign-qualified third-party CoreAudio-compatible applications, refer to the Digidesign Web site ([www.digidesign.com](http://www.digidesign.com)).

### Configuring the Mbox 2 CoreAudio Driver

You can configure the Mbox 2 CoreAudio driver using the Mbox 2 Control Panel, or from within most third-party CoreAudio-compatible client applications (such as BIAS Peak or Logic Audio). Refer to the manufacturer's documentation for more information.

Some applications (such as Apple's iTunes or QuickTime Player), also require that you configure either the Apple Sound Preferences or Apple Audio MIDI Setup to use the Mbox 2 CoreAudio driver.

### Mbox 2 Control Panel

Use the Mbox 2 Control Panel to identify your Digidesign hardware, view or change the Clock Source, enable or disable AC-3 mode, and check firmware.

#### To access the Mbox 2 Control Panel:

- In the System Preferences window, click Digidesign Mbox 2.



*Mbox 2 Control Panel*

#### Digidesign Hardware and Firmware

This area displays the firmware version of your Mbox 2. If your hardware is not connected or cannot be detected, this will display "Unable to connect to Mbox 2." Check that you have installed Pro Tools LE correctly, check your USB connection between the computer and Mbox 2.

#### Clock

This pop-up menu lets you choose the clock source for Mbox 2. Choices include Internal and S/PDIF. Use Internal whenever you are playing back audio through Mbox 2. Use S/PDIF when you are recording into Mbox 2 from a digital device through the Mbox 2 S/PDIF inputs.

## AC-3 Mode

This option lets you enable AC-3 mode. When enabled, the Mbox 2 S/PDIF output switches to a 24-bit clean passthrough mode for AC-3 or DTS encoded audio from a DVD or other media player application (Mbox 2 analog output is muted whenever AC-3 mode is enabled).

 *Enabling AC-3 mode in the Control Panel will prevent Pro Tools LE from being able to access the Mbox 2. Always turn off AC-3 mode before using Pro Tools LE.*

## Connection Status and Device

This display area shows the hardware (Mbox 2) detected by the Control Panel.

## Configuring Mbox 2 for Third-Party Applications

When using Mbox 2 with an application other than Pro Tools LE (such as Apple GarageBand), you can configure hardware settings through the audio preference settings available in that application.



*Mbox 2 settings in Audio/MIDI Preferences for Apple GarageBand*

### To configure hardware settings through a client application (Apple GarageBand shown):

- 1 Choose Digidesign Mbox 2 for Audio Output and Audio Input.
- 2 Select a buffer size for your system by choosing an Optimize For option (Maximum/Large buffer size, or Minimum/Small buffer size).
  - ◆ Small buffers have the advantage of low latency in the record monitor path, but also are more taxing on your computer's CPU and could contribute to dropouts in your audio during record or playback. (Latency is the time delay between a signal entering the audio inputs and leaving the outputs during recording.)
  - ◆ Larger buffers have the advantage of making the Mbox 2 CoreAudio driver more immune to audio dropouts during playback and recording, but can cause a noticeable delay when monitoring your inputs in the recording process. In some CoreAudio-client applications, performing various tasks will interrupt the CoreAudio driver and may result in clicks and pops in audio playback or recording. Choosing a large buffer can help alleviate this problem.

Refer to the documentation for your third-party application to learn more about how these options affect that application.

 *Changing the Buffer Size for the Mbox 2 CoreAudio driver does not affect the H/W Buffer Size settings in the Pro Tools Playback Engine dialog.*

## Configuring the Apple Sound Preferences or Apple Audio MIDI Setup

To use your Mbox 2 with certain CoreAudio-compatible playback applications (such as Apple iTunes or QuickTime Player), you will need to configure either Sound Preferences or Audio MIDI Setup in addition to the Mbox 2 Control Panel. However, for most CoreAudio-compatible client applications (such as BIAS Peak or Cubase SX) this is unnecessary, because you can configure hardware settings, and input and output channels from within the application.

### Apple Sound Preferences

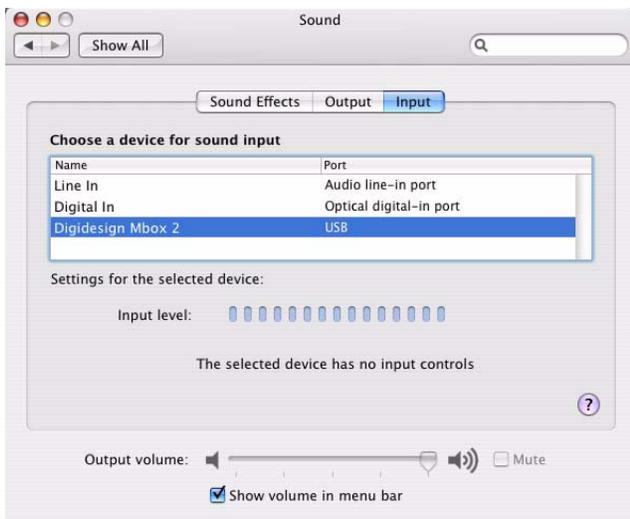
To configure the Apple Sound Preferences:

- 1 Launch System Preferences (Apple menu > System Preferences).
- 2 Click Sound.
- 3 Click Output and select Digidesign Mbox 2 as the device for sound output.



#### Sound Preferences, Output settings

- 4 Click Input and select Digidesign Mbox 2 as the device for sound input.



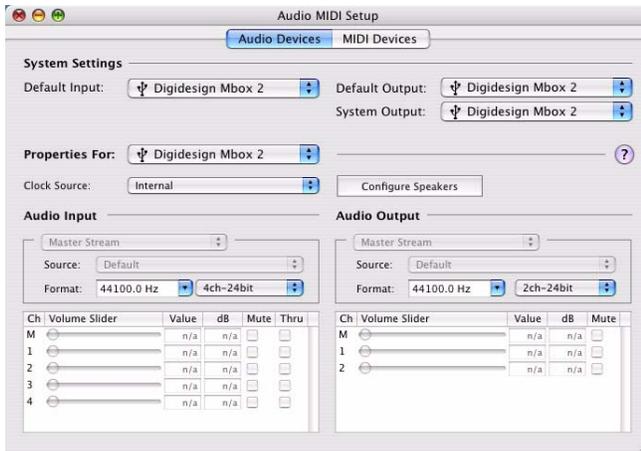
#### Sound Preferences, Input settings

- 5 Quit System Preferences.

## Apple Audio MIDI Setup

To configure the Apple Audio MIDI Setup for Mbox 2 audio:

- 1 Launch Audio MIDI Setup (located in Home/Applications/Utilities).
- 2 Click Audio Devices.



Apple Audio MIDI Setup application showing Audio settings for Mbox 2

- 3 From the System Settings Default Input pop-up menu, choose Digidesign Mbox 2.
- 4 From the System Settings Default Output pop-up menu, choose Digidesign Mbox 2.

 For information on configuring MIDI devices in AMS, see the *Mbox 2 Getting Started Guide*.

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