



# DaVinci Resolve 8

Configuration Guide for Mac OS X

1 March 2012

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## Understanding DaVinci Resolve for Mac

The world's highest performing color grading system is now made simple. You can now build your own DaVinci Resolve with this easy to follow guide.



DaVinci Resolve 8.2 for Mac operates on current Intel based Mac Pro, iMac and MacBook Pro computers. All Resolve systems require a high performance graphics processor for the GUI, a GPU for image processing and disk storage. Resolve supports dual link capture devices for SDI monitoring.

This guide contains important information which will help you configure your Mac as a DaVinci Resolve color grading system including recommended hardware configurations. It also guides you through loading the DaVinci Resolve software.

## Hardware Configurations

Resolve for Mac is configurable for different operational requirements based around the performance you need and the available hardware options. →

It is essential to build a Resolve system with high performance computer hardware. This document lists both new and superseded hardware so you can save money by using some of your existing Mac gear.

### MacBook Pro

If your projects are all SD, or for the web, you could use a high resolution MacBook Pro, just as those working in the field would use for on set work. A Thunderbolt™ connection can be used for ingest of video tape and high speed disk storage.

### iMac

An iMac can provide faster image processing than a MacBook Pro due to the availability of faster CPUs and GPUs in the top models. An iMac provides a flexible and simple desktop work horse for previewing and grading material up to and including HD720p video. A Thunderbolt connection can be used for ingest of video tape and high speed disk storage.

### Mac Pro

A powerful Mac Pro will be required if you ingest video from tape, have video clips in a raw digital camera format, or for working with projects in HD, 2K and 4K.

### Direct Attached Storage

A MacBook Pro or iMac with Thunderbolt can be connected directly to a disk array for SD and HD.

A Mac Pro with a RAID Card and internal drives is all you will need for storage for SD and HD. Alternatively an external disk array and HBA card could be used for additional disk performance and storage, especially with 2K and 4K. The RAID or HBA card will usually occupy PCI Express slot 4.



### SAN Storage

Resolve facilities with SAN based shared storage can use a Mac Pro with a fiber channel connection to work on projects that are being graded in other Mac or Linux suites.

### SDI Monitoring

All colorists will want to use a proper grading monitor, connected to an SDI capture device, for 2D and 3D monitoring. This device will usually occupy PCI Express slot 3 in a Mac Pro or a Thunderbolt port in the latest MacBook Pro or iMac computers.

### Graphics Processors

Resolve 8.2 runs on Mac Pro, iMac and MacBook Pro computers. OpenCL graphics support was introduced with Resolve 8.0 to allow the 2011 models of iMac and MacBook Pro computers to be used as they contain AMD/ATI GPUs. NVIDIA CUDA-based GPU cards should continue to be used with Mac Pro computers as CUDA provides much faster image processing than OpenCL, and also supports noise reduction.



## GUI Monitor

The Resolve application is optimized for 1920 x 1200 screen resolution but will work with a MacBook Pro 15-inch Hi-Res Widescreen Display and also 1920 x 1080 and higher screen resolutions.

## RED r3d Decoding

DaVinci Resolve can perform RED r3d decoding at various resolutions and de-bayer qualities to match the realtime performance of your computer hardware. If a RED Rocket card is installed, full resolution and premium de-bayer quality of 2K files can be achieved, as can premium de-bayer quality of 4K files at half resolution. If you plan on using a RED Rocket card in slot 4, the Mac Pro's limitation of four PCIe slots will necessitate the use of either a PCI Express expansion chassis, an internal storage software RAID and/or a FireWire 800 drive.

Realtime r3d decoding can be performed without the RED Rocket card but at reduced resolution and de-bayer quality. If 4K r3d files need to be processed in real time at maximum quality, a Resolve for Linux system with multiple GPUs must be used. As newer generations of faster computers become available, the realtime r3d decoding performance will increase.

## 4K

With the increasing use of digital cameras, many colorists want to grade 4K or higher resolutions in real time. These cameras provide 4K or higher capture resolutions but store the images as compressed data. While this takes less storage space and bandwidth, the compressed data needs the full image processing bandwidth once the images are decompressed for grading. Full size RGB 4K resolution images can be played back by Resolve for Mac but the disk, GPU and Mac Pro will not provide real time playback.

Traditionally a multi-GPU Resolve Linux system would be used for such demanding tasks. Fortunately Resolve for Mac can pre-generate HD proxies, from the 4K source images for grading, and then render using the high resolution source images as needed.

## Building a Resolve

Detailed hardware configuration information is provided in the section "Building a Resolve". Newer, faster hardware models will provide greater performance than those mentioned in this guide. Finally, the "Certified Component" list details everything you will require to build a DaVinci Resolve color grading system using your Mac.

## Storage



The Preferences option under the Resolve menu is where you can add or remove internal and external disk storage for use with Resolve.

We have certified a number of internal and external storage systems. However almost any storage, designed for Mac OS X and high bandwidth media, will be suitable for use with Resolve.

A Thunderbolt disk array provides fast, high capacity disk storage for current iMac and MacBook Pro computers. Alternatively, replacing the internal hard drive, with the biggest SSD you can afford, will make a substantial improvement to Resolve's performance. Please read the "Important note about Solid State Disk (SSD) speeds" on the following page.

While external disk arrays can provide much higher performance by using more disks, the four internal disk bays in the Mac Pro can provide adequate performance for SD and HD video. We recommend installing a fifth disk under the optical drive for Mac OS X and application software. We used five 7200rpm SATA 3Gbps disks in our tests but faster SAS or SSD disks could be used. Note that SSD disks can only be used in an internal software RAID and not with the Apple Mac Pro RAID Card. The following results were achieved with the internal four-disk RAID of the Mac Pro.

- Apple Mac Pro RAID Card set to RAID 0 - very good performance for SD and HD
- Apple software RAID 0 - passable for SD and HD
- Apple Mac Pro RAID Card set to RAID 5 - not good for HD
- Resolve facilities with SAN based shared storage can use a Mac Pro with a fiber channel connection to work on projects that are being graded in other Mac or Linux suites.

Resolve supports the Quantum StorNext file system via an Apple Xsan 2.x license so you can connect the Resolve Mac Pro to a Storage Area Network (SAN). The most common connection method for the SAN storage is via dual 4Gbit Fiber Channel connections to a FC card in the Resolve Mac Pro. This can be direct or via a FC switch.

If you plan on using a SAN please do so in conjunction with your local distributor and/or your storage subsystem vendor. We have certified the Bright Systems, DVS and standard StorNext system version 3.5.2. Please seek guidance from your local Quantum support office.



### Important note about Solid State Disk (SSD) speeds

Some models of SSD cannot save video data at the speed indicated by the manufacturer because the disk uses hidden data compression to reach these higher write speeds. This data compression technique can only save data at the manufacturer's claimed speed when storing simple files or simple data, such as blank data. Video data includes video noise, and more random pixel data which does not compress much, so the true speed of the disk is seen.

Some SSD's can have up to 50% lower write speed than the manufacturer's claimed speed, so even though the disk specifications claim an SSD is fast enough to handle video, in reality the disk is not fast enough for real time video data capture. Hidden data compression mostly affects capture and often these disks can still be used for real time playback.

Use Blackmagic Disk Speed Test to measure accurately if your SSD will be able to handle uncompressed video capture and playback. Blackmagic Disk Speed Test uses data to simulate the storage of video so you get results similar to what you will see when capturing video to a disk. This will let you find models of SSD that work well for video capture. In our testing, we have found larger newer models of SSD, and larger capacity SSD's are generally faster. Blackmagic Disk Speed Test also tests the speed of disks connected to eSATA docks and other interfaces, which can affect disk performance. Disk Speed Test is installed when you install the latest Desktop Video drivers for your Blackmagic Design capture hardware. Disk Speed Test can also be used even if no capture hardware is present.

## Video Capture and Playback

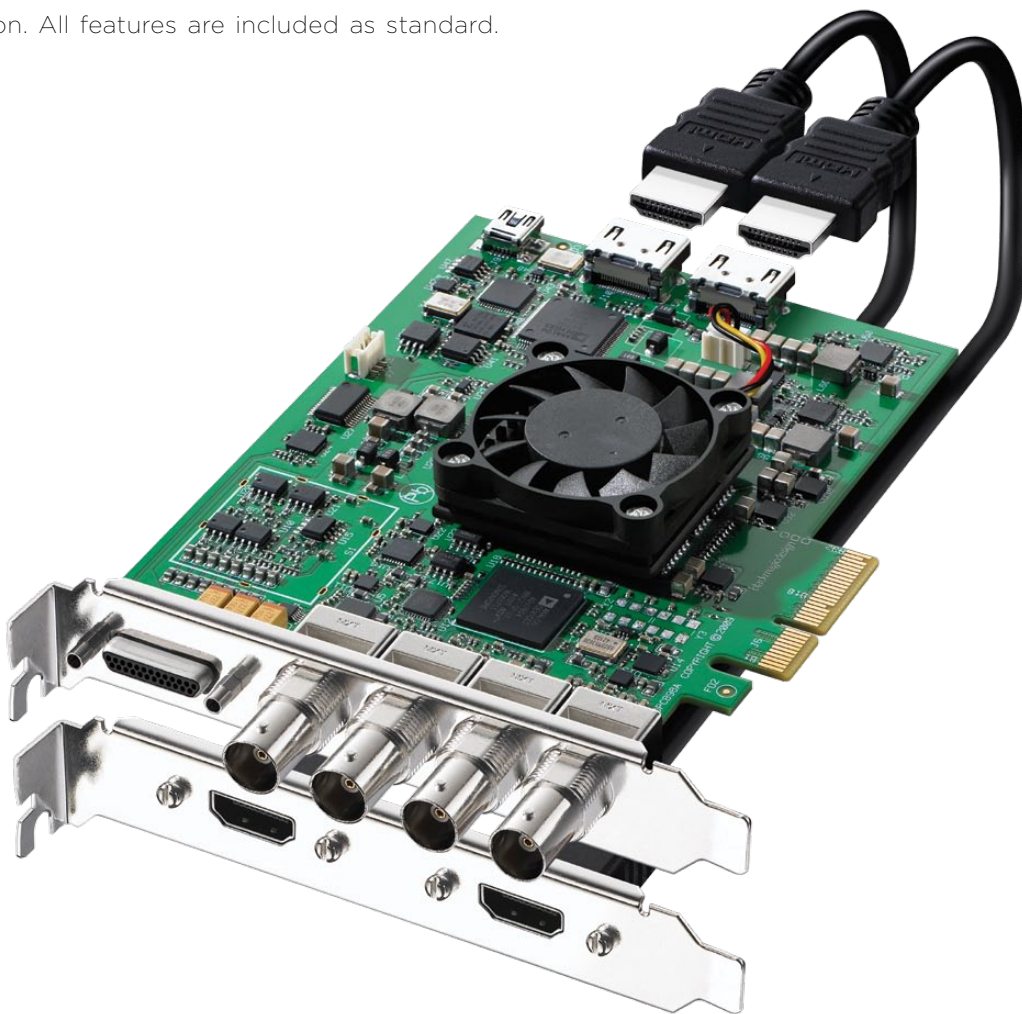
Resolve on a Mac Pro uses dual link DeckLink cards, as the standard hardware for video and audio ingest and playback.

Resolve on a MacBook Pro or iMac with Thunderbolt uses UltraStudio 3D as the standard hardware for video and audio ingest and playback.

These DeckLink and UltraStudio capture and playback devices support SD, HD, 2K and 3Gb/s SDI video with 16 channels of audio. They also feature analog audio and video, HDMI audio and video, external sync and VTR control via a RS-422 connection. All features are included as standard.

The DeckLink or UltraStudio output is used for the grading monitor feed and also for the video output to the VTR. Users can loop a single feed from the VTR to the grading monitor or connect the second SDI output directly to the grading monitor.

Resolve 8.2 and newer no longer require specific Desktop Video drivers for Resolve. Simply download and install the latest Desktop Video drivers from the support page at [www.blackmagic-design.com](http://www.blackmagic-design.com) after installing the Resolve software.



# Installing the Resolve Application

## The DaVinci Resolve Installer. →

Installing or updating Resolve is essentially the same process. Insert the Resolve CD or open the downloaded disk image. The installer window will open. Double-click the 'Resolve Installer' icon and follow the onscreen prompts to install the software.

You will need an Administrator password to install the software on your Mac and we recommend that Resolve be installed into the standard Applications folder on your startup hard disk.

The installation process takes just a couple of minutes. When the installation has been completed, you will be prompted to restart your Mac. After the software has been installed and your Mac has restarted, you may wish to add the application icon to your dock to make Resolve easy to launch.

The included USB dongle contains the Resolve for Mac license and must be connected to your computer before launching the Resolve software.

If you use Apple Final Cut Pro or Adobe Premiere Pro on the same Mac as Resolve, and wish to use these applications with a DeckLink card or UltraStudio 3D, install the latest Desktop Video drivers after installing your video editing applications. The Blackmagic Desktop Video drivers install associated easy setups and presets for Final Cut Pro 7, Final Cut Pro X and Premiere Pro CS5.x.

The Resolve installer also includes Apple ProRes QuickTime codecs. Unlike earlier versions of Resolve, it is no longer necessary to install Final Cut Pro on the same Mac in order to render ProRes files.



# Updating Third Party Drivers for Resolve

The DaVinci Resolve software installs drivers for hardware from Blackmagic Design and third parties. With the exception of Desktop Video, NVIDIA CUDA and RED drivers, avoid manually updating drivers. You should also avoid updating beyond Mac OS X 10.6.8 or 10.7.3 until a new version of this guide is made available on the Blackmagic Design website.

## CUDA

The following CUDA update information is for Macs using any CUDA capable GPUs. Please skip past this section if your Mac contains GPUs from AMD/ATI. NVIDIA CUDA drivers are installed on your Mac when DaVinci Resolve is installed.

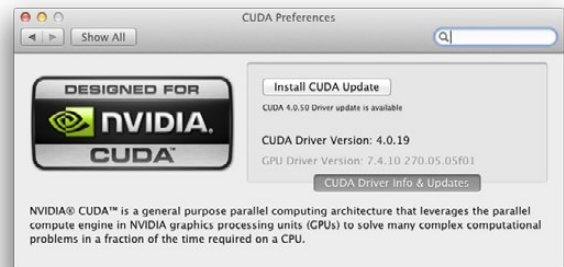
It is important to use the version of the CUDA driver which is certified for use with Resolve 8.2. The current certified CUDA driver is version 4.0.19.

If a new version of the CUDA drivers is released, avoid updating until verifying compatibility with Resolve.

If the message, "WARNING: No CUDA Acceleration Hardware Detected," appears when you launch Resolve, but your Mac contains the recommended NVIDIA GPUs, you will need to quit out of Resolve and update the NVIDIA CUDA drivers.

After quitting from Resolve, go to the Apple menu and choose System Preferences.

Click on the CUDA icon to reveal the CUDA Preferences and note the installed CUDA driver version.



If the installed drivers are older than the certified version listed on this page, avoid clicking on the "Install CUDA Update" button and instead visit [www.nvidia.com/object/mac-driver-archive.html](http://www.nvidia.com/object/mac-driver-archive.html) to download the certified drivers.

Once the certified CUDA drivers are installed, you will be able to successfully launch DaVinci Resolve.

## RED

If you have a RED Rocket card installed in your Mac Pro, you will need to manually install the RED Rocket drivers and firmware from the RED website for use with Resolve 8.2.

The current certified RED Rocket driver is version 1.4.19.0. The current certified RED Rocket firmware is version 1.1.16.5. They are available for download from [www.red.com/support/all/downloads](http://www.red.com/support/all/downloads).



## Linking Resolve Software to Hardware

There are three hardware items to configure when you first start the Resolve application. Click the DaVinci Resolve menu and choose Preferences. The DaVinci Resolve Preferences window will open and reveal the 'Basic' tab.

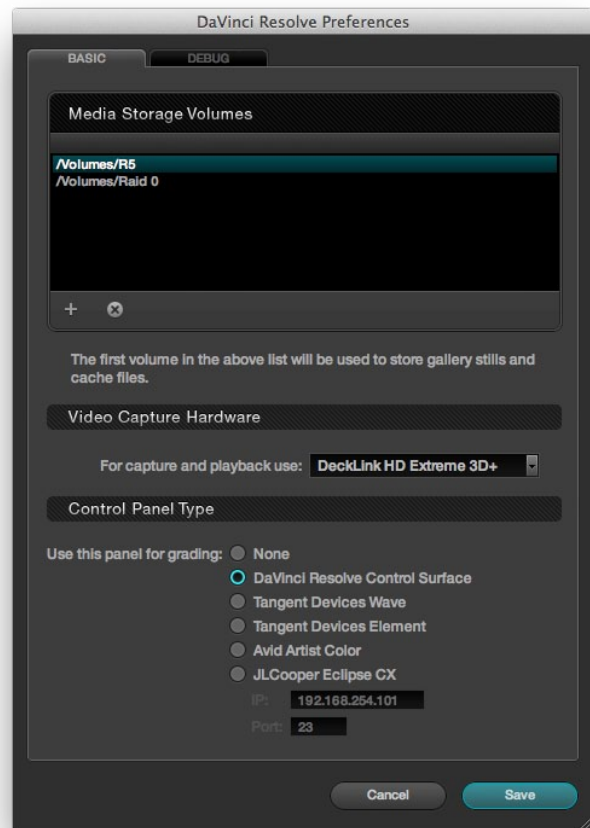
Click on the "+" (add) button to add a volume, folder or mount point to the list of disk storage for your media. The first location in the storage list will become the default location for images, all proxies, cached files and gallery stills. This location will usually be an internal or external disk array. It should have plenty of storage capacity and be permanently connected to your Mac.

Click on the "-" (remove) button to remove a volume, folder or mount point from the list of disk storage.

Select which capture device you will use for SDI monitoring.

Finally, choose which control panel hardware you have connected to your Mac. DaVinci Resolve for Mac supports the current USB 2.0 generation of DaVinci Resolve Control Surface but can also be used with the Avid Artist Color, JLCopper Eclipse CX, Tangent Devices WAVE and Tangent Devices Element Bundle control panels.

After changing any of these preferences and clicking "Save", you will be prompted to restart the Resolve application.



## Configuring Third Party Control Panels

The Tangent Devices WAVE is a USB device and requires no special configuration for use with Resolve. Just plug it in to your Mac and it will work with Resolve.

The Tangent Devices Element Bundle is a set of four USB panels which connect to your Mac via a 4-port USB 2.0 hub. You will need to download and install the "Tangent Hub support pack" to use the panels with DaVinci Resolve. Once Tangent Hub is installed, plug the panels in to your Mac and they will work with Resolve. The Tangent Hub installer for Mac OS X can be downloaded from <http://www.tangentdevices.co.uk/support.asp>.

If using a JLCooper Eclipse CX, follow the Eclipse CX documentation to connect and configure it with an Ethernet port on your Mac. Then launch Resolve, use the Preferences to select the Eclipse CX panel and click 'save'. If you have changed the IP address or port from the default panel settings, enter the IP address and port number for your panel and then click 'save'. Restart the DaVinci Resolve application and you will see the panel menus as soon as the application starts.

The Avid Artist Color panels installation is generally quite straight forward. If your Mac is connected to a network with a DHCP server, just connect an Ethernet cable from the panel to the same network switch. Install the EUcon application that comes with the panel, or download it from the Avid support site. Launch the application and you will notice the E icon towards the right side of the top menu bar. When the icon is green, the panel is communicating with the EUcon application and, once selected in the DaVinci Resolve preferences, the panel will display Resolve menus at the next restart of the Resolve application.

If you are not using a DHCP server, refer to the Avid Artist Color installation instructions for setting the IP address of the panel and Mac. It should take just 30 seconds to set.



# Building a Resolve Mac Pro

## Recommended for SD and HD in realtime

- ✓ Great for SD and HD in realtime with lots of windows, defocus & blurs
- ✓ Good for 2K
- ✓ Grading monitor support via SDI capture card
- ✓ Internal, external and SAN storage options

Resolve works in SD, HD and 2K in real time and full quality on any certified 2009 or 2010 series Mac Pro. Resolve software can easily work in 4K although current Mac Pro models do not have sufficient performance to work in 4K at full quality and in real time.

Resolve works with any certified 2008 series Mac Pro for uncompressed SD and HD in real time and full quality. When working in HD, set the "Video bit depth" to "8 bit" in the Video Monitoring preferences of the Configuration screen. This has no impact on render or tape quality and all SDI I/O is at full bit depth quality.

Resolve requires the dedicated GPU performance of the NVIDIA Quadro 4000 for Mac, or the NVIDIA Quadro FX 4800 for Mac, or the discontinued NVIDIA GeForce GTX 285 for Mac. The specific PCI Express slots used by the GPU cards are determined by the combination of graphics cards used. Please refer to the Mac Pro Slot Configuration tables in this section for guidance.

When using an NVIDIA Quadro 4000 for Mac, as the GPU, install the GPU card in slot 2 and the GUI card in slot 1. The GUI card can be: an ATI Radeon HD 5770, an NVIDIA GeForce GT 120 for Mac or an NVIDIA Quadro 4000 for Mac. Please note Apple states the ATI Radeon HD 5770 card requires a Mid 2010 Mac Pro for compatibility despite many customers successfully using this card with 2008 and 2009 series Mac Pros.

When using an NVIDIA Quadro FX 4800 or NVIDIA GeForce GTX 285, as the GPU, the Mac Pro should initially be set up with the NVIDIA GeForce GT 120 for Mac (GUI card) in slot 1. Move this card to slot 2 after configuration has been completed.

The GUI monitor must remain connected to the GUI card. If you connect the monitor to the wrong GPU card, Resolve performance will be unusable.

Apple ProRes QuickTime files and Avid DNxHD® MXF files are fully supported without the need to purchase any extra software.

RED r3d files, up to 2K resolution, can be played back in realtime in full resolution and premium debayer quality with the addition of a RED Rocket card. Only slots 3 or 4 should be used for the RED Rocket which would also prevent the use of a HBA, RAID or capture card.

A certified PCI Express expansion chassis can be used to effectively add more slots to a Mac Pro. The expansion chassis enables the option to install multiple GPU cards and RED Rocket cards without having to sacrifice a HBA, RAID or capture card. The expansion chassis should always connect to slot 2, in the Mac Pro, and any GPU cards should be installed in the expansion chassis. There are literally hundreds of possible slot configurations between the Mac Pro and the PCI Express expansion chassis. We have certified and presented a few configurations in this guide but expect that most slot configurations should work fine.

When using a multi-GPU Resolve Linux configuration, a Resolve Mac Pro can be used to perform non-creative, "assistant" tasks before and after a project is graded in the suite. This maximizes the productive grading time of the colorist. No grading control panel is required for assistant tasks and you only need the Resolve for Mac software.

# Building a Resolve Mac Pro

## Recommended for SD and HD in realtime

### Choosing graphics cards for your Mac Pro

While Resolve 8.2 and newer support CUDA and OpenCL-based GPUs, CUDA performance is far faster than OpenCL and also supports noise reduction which is not available with OpenCL. For these reasons, NVIDIA CUDA should be used for the GPUs when building a Resolve Mac Pro.

When using a Mac Pro without a PCI Express expansion chassis, the choice of graphics cards for the Resolve GUI and GPU is limited by the width of the cards, the number of auxiliary PCIe power connections they require and whether new cards will be purchased or existing cards reused.

Slots 1 and 2 in the Mac Pro are most suitable for graphics cards as they provide maximum bandwidth and run the cards at full speed. Slot 1 is double-width and slot 2 is single-width. Some graphics cards only need a single-width PCIe slot whereas others require a double-width slot.

The Mac Pro provides two auxiliary PCIe power connections. The number of power connections required by a graphics card might be 2, 1 or none.

When choosing GUI and GPU cards for your Mac Pro, ensure the total number of auxiliary PCIe power connections is no more than 2, and that no more than 1 of these cards requires a double-width slot.

The table below shows the slot-width and power connections required for all supported graphics cards.

The ATI Radeon HD 5770 is a standard graphics card with the mid 2010 series of Mac Pro computers. This means that customers purchasing a new Mac Pro are no longer required to discard the standard GUI card and replace it with an NVIDIA GeForce GT 120 at extra cost.

While the ATI Radeon HD 5770 and NVIDIA Quadro 4000 cards are the latest combination of graphics cards for Resolve, the highest GPU performance for Resolve continues to be the combination of NVIDIA GeForce GT 120 (GUI) and NVIDIA GeForce GTX 285 (GPU). Unfortunately the NVIDIA GeForce GTX 285 is no longer available but owners of this card will continue to enjoy the highest GPU performance in Resolve. The NVIDIA Quadro FX 4800 delivers higher performance than the NVIDIA Quadro 4000 and the Quadro 4000 is not designed to replace it. The Quadro 4000 is available at a much lower cost than the Quadro FX 4800.

Physical requirements of graphics cards

Board	Required width of PCIe slots	Auxiliary PCIe power connections	Function
ATI Radeon HD 5770	2	1	GUI
NVIDIA GeForce GT 120	1	0	GUI
NVIDIA GeForce GTX 285	2	2	GPU
NVIDIA Quadro 4000	1	1	GPU or GUI
NVIDIA Quadro FX 4800	2	1	GPU

# Building a Resolve Mac Pro

Recommended for SD and HD in realtime

Where to install your hardware in a Mac Pro

MAC PRO SLOT CONFIGURATION using an NVIDIA Quadro 4000 for the Resolve GPU

Motherboard Slot	Board	Function
4	HBA or RAID card	Storage interface
3	Capture card	Video & audio I/O
2	NVIDIA Quadro 4000	GPU for Resolve
1	ATI Radeon HD 5770 or NVIDIA GeForce GT 120 or NVIDIA Quadro 4000	GUI for computer display

MAC PRO SLOT CONFIGURATION using an NVIDIA Quadro FX 4800 or GeForce GTX 285 for the Resolve GPU

Motherboard Slot	Board	Function
4	HBA or RAID card	Storage interface
3	Capture card	Video & audio I/O
2	NVIDIA GeForce GT 120	GUI for computer display
1	NVIDIA Quadro FX 4800 or NVIDIA GeForce GTX 285	GPU for Resolve

# Building a Resolve Mac Pro

## Recommended for SD and HD in realtime

Where to install your hardware in a Mac Pro and PCIe expansion chassis

EXPANDED SLOT CONFIGURATION using 2x double-width GPU cards for 3D stereoscopic image processing

Motherboard Slot	Mac Pro
4	HBA or RAID card
3	Capture card
2	CUBIX PCIe x16 connector card
1	ATI Radeon HD 5770

Slot	CUBIX PCI Express Expander
4	NVIDIA GeForce GTX 285
3	- blocked
2	NVIDIA GeForce GTX 285
1	- blocked

EXPANDED SLOT CONFIGURATION using 3x single-width GPU cards and a RED Rocket card

Motherboard Slot	Mac Pro
4	HBA or RAID card
3	Capture card
2	CUBIX PCIe x16 connector card
1	ATI Radeon HD 5770

Slot	CUBIX PCI Express Expander
4	NVIDIA Quadro 4000
3	NVIDIA Quadro 4000
2	RED Rocket card
1	NVIDIA Quadro 4000

EXPANDED SLOT CONFIGURATION using 2x single-width GPU cards and 2x RED Rocket cards for 3D stereoscopic image processing of RED r3d files

Motherboard Slot	Mac Pro
4	HBA or RAID card
3	Capture card
2	CUBIX PCIe x16 connector card
1	ATI Radeon HD 5770

Slot	CUBIX PCI Express Expander
4	NVIDIA Quadro 4000
3	NVIDIA Quadro 4000
2	RED Rocket card
1	RED Rocket card

EXPANDED SLOT CONFIGURATION using 2x single-width GPU cards and 1x RED Rocket card image processing of RED r3d files

Motherboard Slot	Mac Pro
4	HBA or RAID card
3	Capture card
2	Cyclone PCIe x16 connector card
1	ATI Radeon HD 5770

Slot	Cyclone PCI Express Expander
J7	NVIDIA Quadro 4000
J6	- blocked
J5	NVIDIA Quadro 4000
J4	- blocked
J3	RED Rocket card
J2	
J1	

# Building a Resolve Mac Pro

## Parts List

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### Computer

**Apple Mac Pro:**

Early 2008, Two 2.8GHz Quad Core

or

Early 2008, Two 3.0GHz Quad Core

or

Early 2008, Two 3.2GHz Quad Core

**Operating System:** Mac OS X 10.6.8 or 10.7.3

**Optical Drive:** 1 x SuperDrive

**RAM:** 8 GB or more

Early 2009, Two 2.26GHz Quad Core

or

Early 2009, Two 2.66GHz Quad Core

or

Early 2009, Two 2.93GHz Quad Core

or

Mid 2010, Two 2.4GHz Quad Core

or

Mid 2010, Two 2.66GHz 6-Core

or

Mid 2010, Two 2.93GHz 6-Core

**Operating System:** Mac OS X 10.6.8 or 10.7.3

**Optical Drive:** 1 x SuperDrive

**RAM:** 6, 12 or 24 GB for memory optimization (not 8, 16 or 32 GB).

### Graphics Processor for GUI

1 x ATI Radeon HD 5770 for Mac video card

or

1 x NVIDIA GeForce GT 120 video card

or

1 x NVIDIA Quadro 4000 for Mac video card

### Graphics Processor for GPU

1 x NVIDIA Quadro 4000 for Mac video card

or

1 x NVIDIA Quadro FX 4800 for Mac video card

or

1 x NVIDIA GeForce GTX 285 PCIe video card

### Control Panel and Software

1 x DaVinci Resolve Control Surface with USB

or

1 x Avid Artist Color, plus

1 x DaVinci Resolve Software for Mac

or

1 x JLCooper ECLIPSE CX, plus

1 x DaVinci Resolve Software for Mac

or

1 x Tangent Devices Element Bundle, plus

1 x DaVinci Resolve Software for Mac

or

1 x Tangent Devices WAVE, plus

1 x DaVinci Resolve Software for Mac

### GUI Monitor

1 x Apple LED Cinema Display 24"

or

1 x Apple LED Cinema Display 27"

or

Any monitor meeting the following criteria:

- DVI-D or Mini DisplayPort input
- IPS or TFT LCD flat panel with black bezel
- 1920 x 1200 is the preferred screen resolution. 1920 x 1080 and higher screen resolutions are also supported
- 1000:1 contrast ratio or better
- 8ms response time or better
- 16 million colors or better

# Building a Resolve Mac Pro

## Parts List

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### Capture Card

1 x DeckLink HD Extreme 3D+  
or  
1 x DeckLink HD Extreme 3D  
or  
1 x DeckLink HD Extreme 3

### Optional Codec Support

RED Rocket PCIe hardware card  
for accelerated processing of RED r3d files.

### Optional PCIe Expansion

1 x CUBIX GPU-Xpander Desktop 4  
or  
1 x Cyclone Microsystems PCIe2-2707

### Optional USB Keyboard

1 x Logickeyboard - Apple DaVinci Resolve

### Storage Options - External

1 x Accusys A08S-PS (8 Bay RAID)  
or  
1 x CalDigit HDPro2 (8 Bay RAID)  
or  
1 x Facilis Technology TerraBlock 24D (24 Bay RAID)  
1 x 4Gbps Dual Channel Fiber Channel card  
or  
1 x Rorke Data Galaxy Aurora (24 Bay RAID), plus  
1 x 4Gbps Dual Channel Fiber Channel card

### Storage Options - SAN Connection

1 x Apple Xsan software, plus  
1 x Apple Dual-Channel 4Gb Fibre Channel PCIe Card

### Storage Options - Internal

5 x 7200rpm SATA hard disks, plus  
1 x OWC Multi-Mount 3.5" to 5.25" bracket set  
or  
1 x Apple Mac Pro RAID Card, plus  
5 x 7200rpm SATA hard disks, plus  
1 x OWC Multi-Mount 3.5" to 5.25" bracket set  
or  
1 x Apple Mac Pro RAID Card, plus  
4 x 15000rpm SAS hard disks for the RAID, plus  
1 x OWC Multi-Mount 3.5" to 5.25" bracket set, plus  
1 x 7200rpm SATA hard disk for the operating system



# Building a Resolve MacBook Pro Suitable for SD and SD/HD shot preview

- ✓ Ideal for on-set, pre-grade, preview and training
- ✓ Realtime processing of SD DPX files
- ✓ Apply shot by shot 'look' grades to HD images
- ✓ Grading monitor support via Thunderbolt™ SDI capture

DaVinci Resolve on a MacBook Pro is fully featured and not limited in any way. The only limitations are those imposed by the disk, GPU and CPU speeds. The noise reduction feature requires an NVIDIA CUDA GPU and is not available with AMD/ATI GPUs. As with other Resolve configurations, the Resolve MacBook Pro benefits from being used with the DaVinci Resolve Control Surface but can also be used with any of the certified third party control panels.

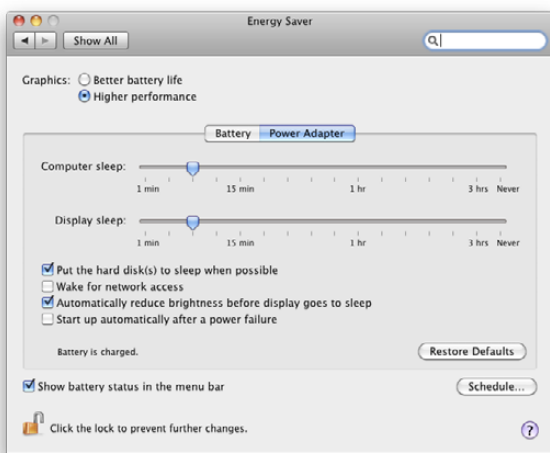
The MacBook Pro is ideal for on-set, pre-grade, preview and training. It can provide a preview of material in SD and apply shot by shot 'look' grades on HD images so the project file can be exported to a Mac Pro or Linux system.

The Resolve interface requires a high resolution MacBook Pro with either a 15-inch display, and a 1680 x 1050 resolution, or a 17-inch display.

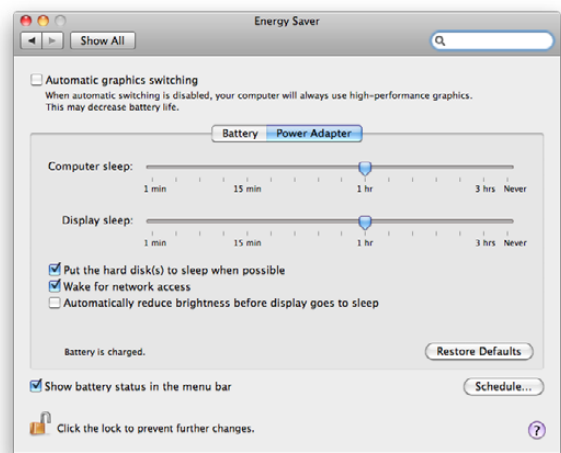
A Thunderbolt disk array provides fast, high capacity disk storage for current MacBook Pro computers. Alternatively, replacing the internal hard drive, with the biggest SSD you can afford, will make a substantial improvement to Resolve's performance.

The MacBook Pro contains two GPUs; one for high performance graphics and the other for better battery life. It is essential to enter the Energy Saver preferences, in the System Preferences of Mac OS X, and select the high performance graphics option. Failing to do so will render Resolve unusable. On the mid 2009 model, set the Graphics radio button to "Higher Performance". On the mid 2010 and early 2011 models, disable the "Automatic graphics switching" checkbox.

Apple ProRes QuickTime files and Avid DNxHD® MXF files are fully supported without the need to purchase any extra software.



Set the Graphics radio button to "Higher Performance" on the 17-inch, Mid 2009, MacBook Pro



Disable the "Automatic graphics switching" checkbox on the 17-inch, Mid 2010 and Early 2011, MacBook Pro

# Building a Resolve MacBook Pro

## Parts List

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### Computer

#### Apple MacBook Pro:

- 17-inch, Mid 2009, 2.8GHz Core 2 Duo
- or
- 17-inch, Mid 2009, 3.06GHz Core 2 Duo
- or
- 17-inch, Mid 2010, 2.53GHz Intel Core i5
- or
- 17-inch, Mid 2010, 2.66GHz Intel Core i7
- or
- 15-inch, Early 2011, 2.0GHz Intel Core i7 with 1680 x 1050 display resolution
- or
- 15-inch, Early 2011, 2.2GHz Intel Core i7 with 1680 x 1050 display resolution
- or
- 15-inch, Early 2011, 2.3GHz Intel Core i7 with 1680 x 1050 display resolution
- or
- 17-inch, Early 2011, 2.2GHz Intel Core i7
- or
- 17-inch, Early 2011, 2.3GHz Intel Core i7

**Operating System:** Mac OS X 10.6.8 or 10.7.3

**RAM:** 8 GB

### Storage Options - External Thunderbolt

- 1 x PROMISE Pegasus R4 (4 Bay RAID)
- or
- 1 x PROMISE Pegasus R6 (6 Bay RAID)

### Storage Options - Internal

- 1 x 5400rpm SATA hard disk
- or
- 1 x 7200rpm SATA hard disk
- or
- 1 x solid state drive (SSD)

### Control Panel and Software

- 1 x DaVinci Resolve Control Surface with USB
- or
- 1 x Avid Artist Color, plus
- 1 x DaVinci Resolve Software for Mac
- or
- 1 x JLCopper ECLIPSE CX, plus
- 1 x DaVinci Resolve Software for Mac
- or
- 1 x Tangent Devices Element Bundle, plus
- 1 x DaVinci Resolve Software for Mac
- or
- 1 x Tangent Devices WAVE, plus
- 1 x DaVinci Resolve Software for Mac

### Capture Device - External Thunderbolt

- 1 x UltraStudio 3D

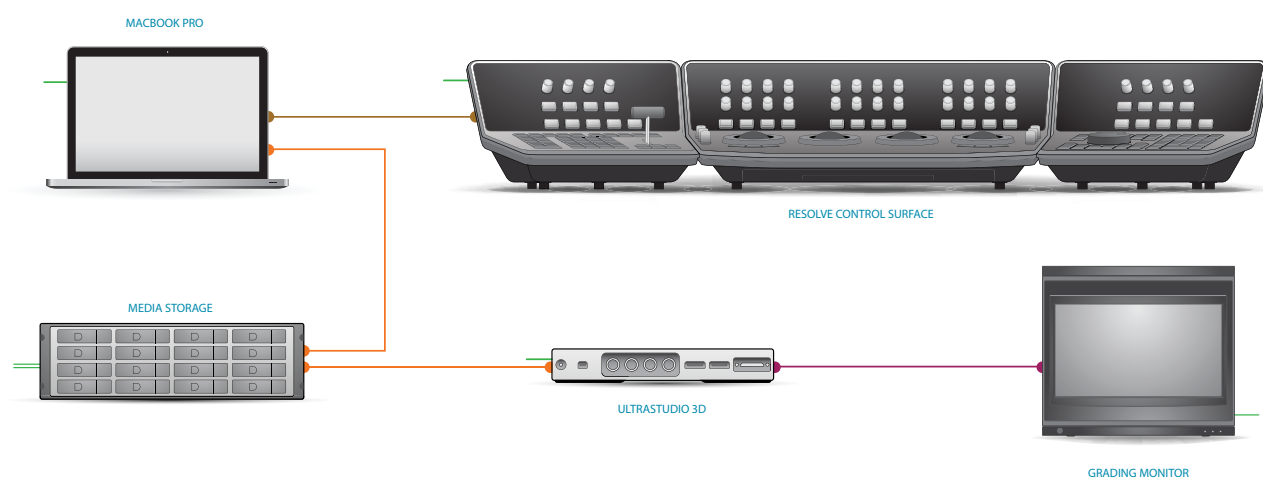
### Optional USB Keyboard

- 1 x Logickeyboard - Apple DaVinci Resolve

# Building a Resolve MacBook Pro

## Connection Diagram

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- Thunderbolt
- DVI
- USB
- HD-SDI
- PCI-E Extender
- Storage Connection
- Reference
- Audio
- RS422
- Electrical Power

# Building a Resolve iMac

## Suitable for SD and HD720p grading

- ✓ Ideal for pre-grade, preview and training
- ✓ Realtime processing of HD720p images
- ✓ Preview, grade and render HD images
- ✓ Grading monitor support via Thunderbolt™ SDI capture

DaVinci Resolve on an Early 2011 iMac is fully featured and not limited in any way. The only limitations are those imposed by the disk, GPU and CPU speeds. The noise reduction feature is not available on iMacs as this feature requires an NVIDIA CUDA GPU. As with other Resolve configurations, the Resolve iMac benefits from being used with the DaVinci Resolve Control Surface but can also be used with any of the certified third party control panels.

Using HD720p files with an internal SSD drive or external Thunderbolt disk array, colorists can grade, preview and render in real time with SD and up to HD720p30 images.

All compressed files, including Apple ProRes and RED r3d, are decompressed by the CPU prior to grading by the GPU. If you are mainly working with compressed files, consider using an iMac with faster CPUs so that realtime grading is not impeded by slow CPU processors.

A Thunderbolt disk array provides fast, high capacity disk storage for current iMac computers. Alternatively, replacing the internal hard drive, with the biggest SSD you can afford, will make a substantial improvement to Resolve's performance.

Apple ProRes QuickTime files and Avid DNxHD® MXF files are fully supported without the need to purchase any extra software.

When using a multi-GPU Resolve Linux configuration, a Resolve iMac can be used to perform non-creative, "assistant" tasks before and after a project is graded in the suite. This maximizes the productive grading time of the colorist. No grading control panel is required for assistant tasks and you only need the Resolve for Mac software.

# Building a Resolve iMac

## Parts List

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### Computer

#### Apple iMac:

21.5-inch, Mid 2011, 2.5GHz Intel Core i5  
or  
21.5-inch, Mid 2011, 2.7GHz Intel Core i5  
or  
21.5-inch, Mid 2011, 2.8GHz Intel Core i7  
or  
27-inch, Mid 2011, 2.7GHz Intel Core i5  
or  
27-inch, Mid 2011, 3.1GHz Intel Core i5  
or  
27-inch, Mid 2011, 3.4GHz Intel Core i7

**Operating System:** Mac OS X 10.6.8 or 10.7.3

**RAM:** 8 GB

### Control Panel and Software

1 x DaVinci Resolve Control Surface with USB  
or  
1 x Avid Artist Color, plus  
1 x DaVinci Resolve Software for Mac  
or  
1 x JLCoooper ECLIPSE CX, plus  
1 x DaVinci Resolve Software for Mac  
or  
1 x Tangent Devices Element Bundle, plus  
1 x DaVinci Resolve Software for Mac  
or  
1 x Tangent Devices WAVE, plus  
1 x DaVinci Resolve Software for Mac

### Capture Device - External Thunderbolt

1 x UltraStudio 3D

### Storage Options - External Thunderbolt

1 x PROMISE Pegasus R4 (4 Bay RAID)  
or  
1 x PROMISE Pegasus R6 (6 Bay RAID)

### Storage Options - Internal

1 x 7200rpm SATA hard disk  
or  
1 x solid state drive (SSD)  
or  
1 x 7200rpm SATA hard disk, plus  
1 x solid state drive (SSD)

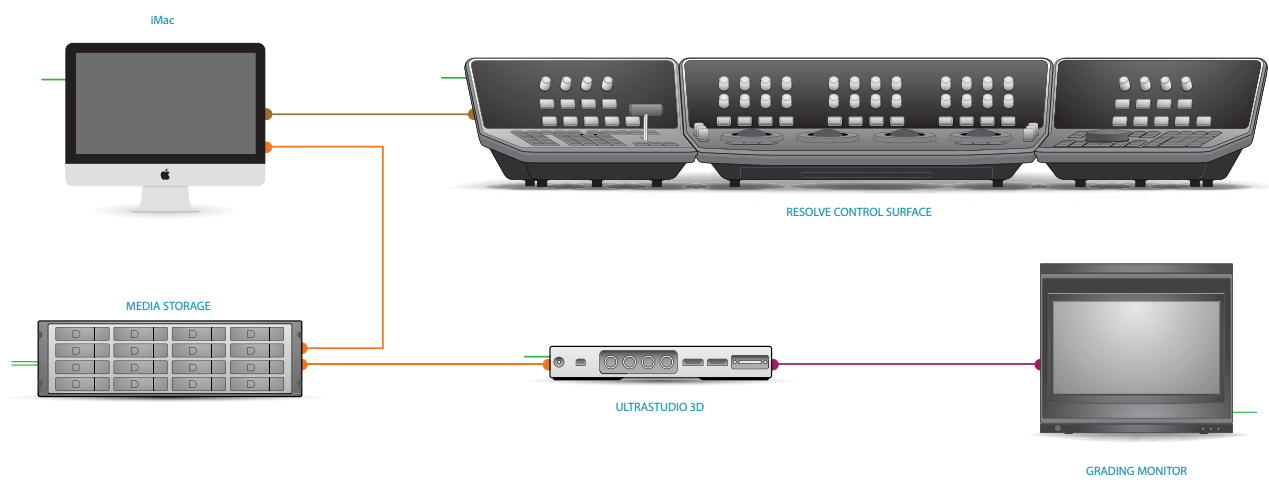
### Optional USB Keyboard

1 x Logickeyboard - Apple DaVinci Resolve

# Building a Resolve iMac

## Connection Diagram

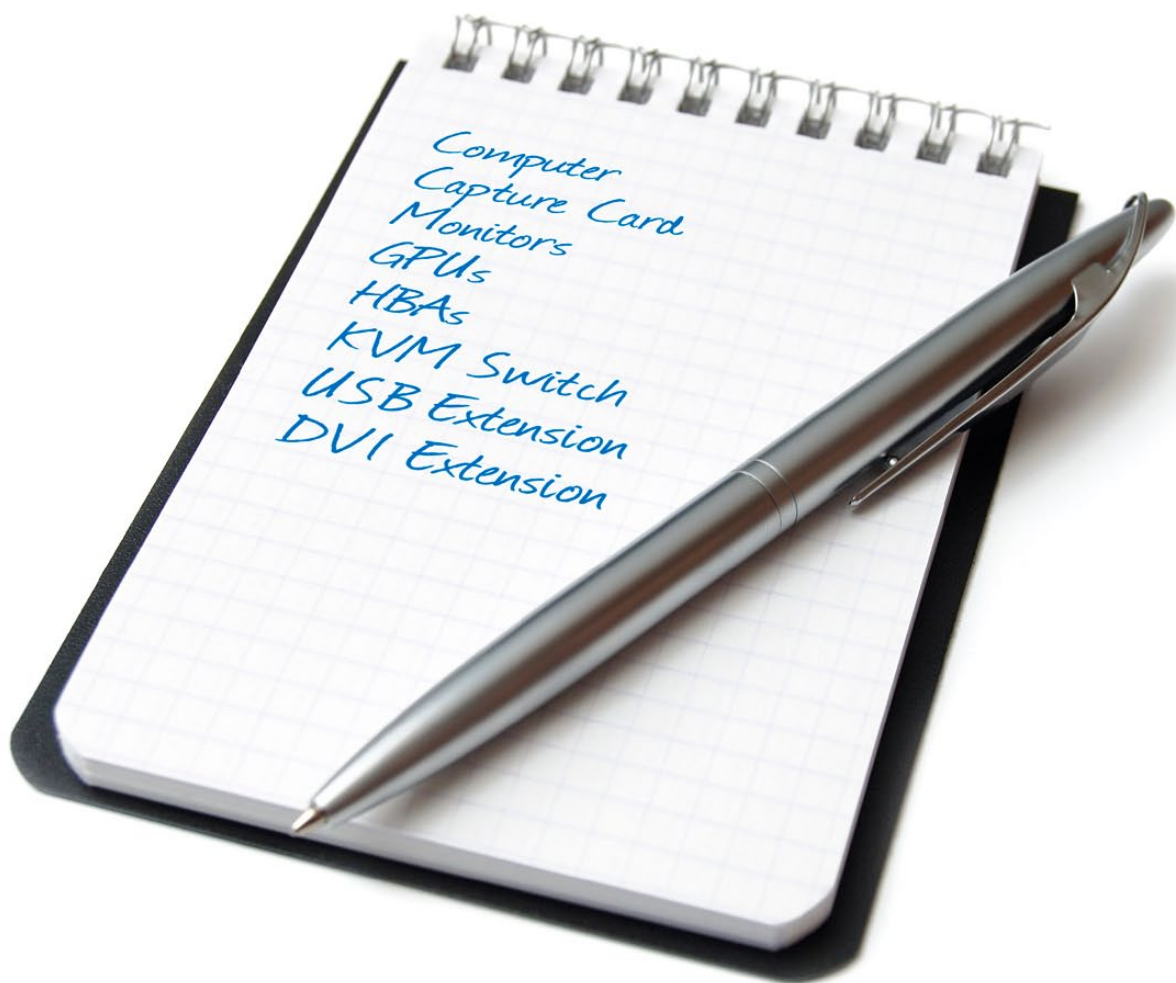
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- Thunderbolt
- DVI
- USB
- HD-SDI
- PCI-E Extender
- Storage Connection
- Reference
- Audio
- RS422
- Electrical Power

## What to buy

Building a DaVinci Resolve is as simple as knowing where to find the certified parts. To help make it easy, we have listed all of the parts you need to build your DaVinci Resolve for Mac and where to find your nearest supplier.



## Certified Components

### Computer

**Apple Mac Pro (Mid 2010), Two 2.4GHz Intel Quad Core**

<http://www.apple.com/macpro/specs.html>

**Apple Mac Pro (Mid 2010), Two 2.66GHz Intel 6-Core**

<http://www.apple.com/macpro/specs.html>

**Apple Mac Pro (Mid 2010), Two 2.93GHz Intel 6-Core**

<http://www.apple.com/macpro/specs.html>

**Apple MacBook Pro (15-inch Hi-Res Widescreen, Early 2011), 2.0GHz Intel Core i7**

<http://www.apple.com/macbookpro/specs.html>

**Apple MacBook Pro (15-inch Hi-Res Widescreen, Early 2011), 2.2GHz Intel Core i7**

<http://www.apple.com/macbookpro/specs.html>

**Apple MacBook Pro (15-inch Hi-Res Widescreen, Early 2011), 2.2GHz Intel Core i7**

<http://www.apple.com/macbookpro/specs.html>

**Apple MacBook Pro (17-inch, Early 2011), 2.2GHz Intel Core i7**

<http://www.apple.com/macbookpro/specs-17inch.html>

**Apple MacBook Pro (17-inch, Early 2011), 2.3GHz Intel Core i7**

<http://www.apple.com/macbookpro/specs-17inch.html>

**Apple iMac (21.5-inch, Mid 2011), 2.5GHz Intel Core i5**

<http://www.apple.com/imac/specs.html>

**Apple iMac (21.5-inch, Mid 2011), 2.7GHz Intel Core i5**

<http://www.apple.com/imac/specs.html>

**Apple iMac (21.5-inch, Mid 2011), 2.8GHz Intel Core i7**

<http://www.apple.com/imac/specs.html>

**Apple iMac (27-inch, Mid 2011), 2.7GHz Intel Core i5**

<http://www.apple.com/imac/specs.html>

**Apple iMac (27-inch, Mid 2011), 3.1GHz Intel Core i5**

<http://www.apple.com/imac/specs.html>

**Apple iMac (27-inch, Mid 2011), 3.4GHz Intel Core i7**

<http://www.apple.com/imac/specs.html>

Where to Buy

<http://store.apple.com/>

## Certified Components

### GPU

#### **ATI Radeon HD 5770 for Mac**

<http://www.amd.com/us/products/desktop/graphics/ati-radeon-hd-5000/hd-5770/Pages/ati-radeon-hd-5770-overview.aspx>

#### **NVIDIA GeForce GT 120 for Mac**

[http://www.nvidia.com/object/product\\_geforce\\_gt\\_120\\_us.html](http://www.nvidia.com/object/product_geforce_gt_120_us.html)

#### **NVIDIA Quadro 4000 for Mac**

<http://www.nvidia.com/object/product-quadro-4000-mac-us.html>

#### **NVIDIA Quadro FX 4800 for Mac**

[http://www.nvidia.com/object/product\\_quadro\\_fx\\_4800\\_for\\_mac\\_us.html](http://www.nvidia.com/object/product_quadro_fx_4800_for_mac_us.html)  
<http://www3.pny.com/NVIDIA-Quadro-FX-4800-For-Mac-P2815C409.aspx>

Where to Buy

<http://store.apple.com/>

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### Software

#### **DaVinci Resolve for Mac**

<http://www.blackmagic-design.com/davinci/>

#### **Apple Xsan**

<http://www.apple.com/xsan/>

Where to Buy

<http://store.apple.com/>

## Certified Components

### Control Panel

#### DaVinci Resolve Control Surface

<http://www.blackmagic-design.com/davinci/>

Where to Buy

<http://www.blackmagic-design.com/resellers/>

#### Avid Artist Color

<http://www.avid.com/products/Artist-Color>

Where to Buy

[http://euphonix.avid.com/artist/ux/euphonix/artist\\_sales.php](http://euphonix.avid.com/artist/ux/euphonix/artist_sales.php)

#### JLCooper's Eclipse CX

<http://www.jlcooper.com/pages/eclipse.html/>

Where to Buy

[http://www.jlcooper.com/cgi/jlcshop\\_ns.cgi?task=purch/](http://www.jlcooper.com/cgi/jlcshop_ns.cgi?task=purch/)

#### Tangent Devices Element Bundle

[http://www.tangentdevices.co.uk/products\\_element.asp](http://www.tangentdevices.co.uk/products_element.asp)

Where to Buy

[http://www.tangentdevices.co.uk/reseller\\_list.asp](http://www.tangentdevices.co.uk/reseller_list.asp)

#### Tangent Devices WAVE

[http://www.tangentdevices.co.uk/products\\_wave.asp](http://www.tangentdevices.co.uk/products_wave.asp)

Where to Buy

[http://www.tangentdevices.co.uk/reseller\\_list.asp](http://www.tangentdevices.co.uk/reseller_list.asp)

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### Monitor

#### Apple LED Cinema Display 27"

<http://www.apple.com/displays/>

Where to Buy

<http://store.apple.com/>

## Certified Components

### Capture and Playback

#### **Blackmagic Design DeckLink HD Extreme 3D+**

<http://www.blackmagic-design.com/products/decklinkhdextreme/>

#### **Blackmagic Design UltraStudio 3D**

<http://www.blackmagic-design.com/products/ultrastudio3d/>

Where to Buy

<http://www.blackmagic-design.com/resellers/>

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### RED r3d Processing Card

#### **RED Rocket**

<http://www.red.com/>

Where to Buy

<http://www.red.com/store/775-0001>

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### USB 2.0 Extender and Hub

#### **ICRON USB 2.0 Ranger 2204**

[http://www.icron.com/products/usb\\_new/usb20-ranger-2204-cat5-extender.php](http://www.icron.com/products/usb_new/usb20-ranger-2204-cat5-extender.php)

Where to Buy

[http://www.icron.com/products/usb/how\\_to\\_buy\\_a.php](http://www.icron.com/products/usb/how_to_buy_a.php)

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### USB 2.0 Keyboard

#### **Logickeyboard - Apple DaVinci Resolve**

Model: LKBU-RESOLVE-AM89-US

<http://www.logickeyboard.com/shop/advance-line-apple-2020p.html>

Where to Buy

<http://www.logickeyboard.com/shop/advance-line-apple-2020p.html>

## Certified Components

### Direct Attached Storage

#### Accusys A08S-PS, 8 Bay RAID

<http://www.accusys.com.tw/A08/A08/Overview.html>

Where to Buy

<http://www.accusys.com.tw/where/index.htm>

#### CalDigit HDPro2, 8 Bay RAID

<http://www.CalDigit.com/HDPro2/>

Where to Buy

<http://www.caldigit.com/store.asp#HDPro2>

#### Facilis Technology TerraBlock, 24 Bay RAID

<http://www.facilis.com/products.html>

Where to Buy

<http://www.facilis.com/howtobuy.html>

#### PROMISE Pegasus R4, 4 Bay RAID

[http://www.promise.com/storage/raid\\_series.aspx?region=en-US&m=1040&sub\\_m=sub\\_m\\_8&rsn1=40&rsn3=47&statistic=pegasus](http://www.promise.com/storage/raid_series.aspx?region=en-US&m=1040&sub_m=sub_m_8&rsn1=40&rsn3=47&statistic=pegasus)

#### PROMISE Pegasus R6, 6 Bay RAID

[http://www.promise.com/storage/raid\\_series.aspx?region=en-US&m=1040&sub\\_m=sub\\_m\\_8&rsn1=40&rsn3=47&statistic=pegasus](http://www.promise.com/storage/raid_series.aspx?region=en-US&m=1040&sub_m=sub_m_8&rsn1=40&rsn3=47&statistic=pegasus)

Where to Buy

[http://www.promise.com/where2buy/where2buy\\_region.aspx?region=en-US&m=178](http://www.promise.com/where2buy/where2buy_region.aspx?region=en-US&m=178)

#### Rorke Data Galaxy Aurora, 24 Bay RAID

<http://www.rorke.com/aurora.cfm>

Where to Buy

<http://www.rorke.com/contact-sales-form.cfm>

#### OWC Multi-Mount

Model: 3.5" to 5.25" bracket set for 2009-2010 Mac Pro "Nehalem"

<http://eshop.macsales.com/item/Other%20World%20Computing/MM52T35MP9/>

#### OWC Multi-Mount

Model: 3.5" to 5.25" bracket and cable set for 2006-2008 Mac Pro

<http://eshop.macsales.com/item/Other%20World%20Computing/MM52T35MP8/>

Where to Buy

<http://eshop.macsales.com/owcpages/multimount/multimount.html>

## Certified Components

### HBA

#### Apple Dual-Channel 4Gb Fibre Channel PCI Express Card

<http://store.apple.com/us/product/MB842G/A?mco=MTY3ODQ5OTY>

#### Apple Mac Pro RAID Card

<http://www.apple.com/macpro/features/storage.html>

Where to Buy

<http://store.apple.com/>

#### ATTO 4Gbps Dual Channel PCIe Fiber Channel HBA

Model: CTFC-42ES-ORO

<http://www.attotech.com/products/product.php?scat=2&sku=CTFC-42ES-ORO>

Where to Buy

<http://www.attostore.com/fibre-channel-hbas/4gb-celerity-fc-42es.htm>

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### PCI Express Expansion

#### CUBIX GPU-Xpander Desktop 4

Model: XPDT-X16-4QF-INT (International)

Model: XPDT-X16-4QF-OSV (North America)

<http://www.cubixgpu.com/Products/Desktop/>

Where to Buy

<https://www.cubixgpu.com/Partners>

#### Cyclone Microsystems PCIe2-2707

Order number: 600-2707-1-15-S

[http://www.cyclone.com/products/expansion\\_systems/600-2707.php](http://www.cyclone.com/products/expansion_systems/600-2707.php)

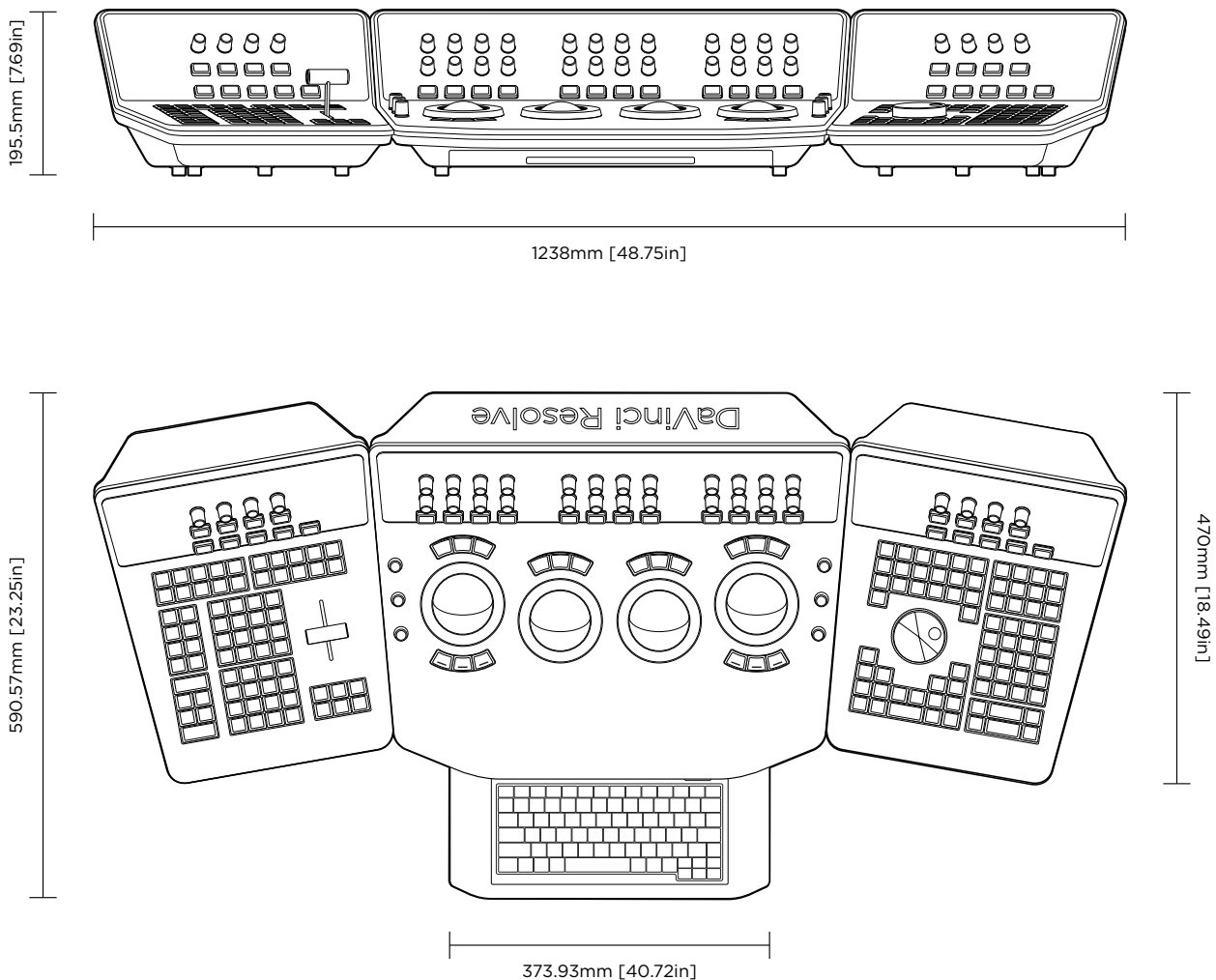
Where to Buy

<http://www.buycyclonemicro.com/>

# DaVinci Resolve Control Surface

## Dimensions and Weights

	HEIGHT	WIDTH	DEPTH	WEIGHT
CENTER PANEL	195.5mm (7.69in)	574.1mm (22.60in)	460.7mm (18.14in)	12.2kg (26.9lb)
LEFT PANEL	195.5mm (7.69in)	333.5mm (13.13in)	421.8mm (16.60in)	4.8kg (10.6lb)
RIGHT PANEL	195.5mm (7.69in)	333.5mm (13.13in)	421.8mm (16.60in)	4.8kg (10.6lb)



# Warranty

## 12 Months Limited Warranty

Blackmagic Design warrants that DaVinci Resolve control surface will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product. Periodical updates to the operational software are not included under this warranty.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personnel other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts

or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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