

Blackmagicdesign



Hardware Selection and Configuration Guide

DaVinci Resolve 15

PUBLIC BETA

The world's most popular and advanced on set, offline and online editing, color correction, audio post production and visual effects system.

Contents

Introduction	3
Getting Started	4
Guidelines for selecting your OS and system hardware	4
Media storage selection and file systems	9
Hardware Selection and Setup	10
DaVinci Resolve for Mac	11
DaVinci Resolve for Windows	16
DaVinci Resolve for Linux	22
Shopping Guide	32
Mac systems	32
Windows systems	35
Linux systems	38
Media storage	40
GPU selection	42
Expanders	44
Accessories	45
Third Party Audio Consoles	45
Third Party Color Grading Panels	46
Windows and Linux Systems: PCIe Slot Configurations	47
ASUS PCIe configuration	47
GIGABYTE PCIe configuration	47
HP PCIe configuration	48
DELL PCIe configuration	49
Supermicro PCIe configuration	50
PCIe expanders: Slot configurations	51
Panel Information	52
Regulatory Notices and Safety Information	54
Warranty	55

Introduction

Building a professional all in one solution for offline and online editing, color correction, audio post production and visual effects

DaVinci Resolve has evolved over a decade from a high-end color correction system used almost exclusively for the most demanding film and TV products to become the worlds most popular and advanced professional all in one solution for offline and online editing, color correction, audio post production and now visual effects.

It's a scalable and resolution independent finishing tool for Mac, Windows and Linux which natively supports an extensive list of image, audio and video format and codecs so you can mix various sources on the timeline at the same time. But most importantly, each stage of your post production has a page focused on that task and tailored for that user. Switching roles is a simple as a mouse click to another page and when in collaboration groups you can pass the same project to your colleagues without the fear that shots wont conform.



When deciding what hardware and configuration to use for your DaVinci Resolve system you can build one for almost every possible use. You can also configure DaVinci Resolve hardware for a subset of its various users.

On-set users have quite different needs to those focused only on offline editing who are looking for maximum flexibility with compressed files. The colorist is likely to request uncompressed full resolution clips, even camera RAW files and so Tera-bytes of high speed online storage. An audio engineer might not need a powerful GPU as they often use flatten HD reference video files but they will need access to many thousands of small audio elements. The VFX artist will want significantly more system and GPU memory than most other users.

The key thing to keep in mind when selecting your config is unlike traditional editing, grading, audio post or finishing systems, image processing in DaVinci Resolve is graphics processor (GPU) based and so some of the features require a higher end GPU that you might be accustomed to. High performance GPUs or multiple GPUs will offer the best experience.

Whether you are just starting your editing, grading, audio post or VFX career, or if you just want to have some fun with video, this guide contains important information which will help you upgrade, buy or build and configure your system.

Getting Started

Guidelines for selecting your OS and system hardware

The system you select to upgrade, buy or build may be based on what computer you already have and can update, or a specific operational or technical requirement. It's also worth considering that even on a modest budget using the right combination of hardware can make a significant performance difference.

The OS selection may also be as simple as what you have or prefer, or it's guided by the system cost, however it's really important to consider that each OS has its advantages over the others and sometimes the requirement to support a particular codec will define your selection.



Depending on your expected source formats and codecs and the selected timeline resolution, the hardware configuration defines the speed that you can edit, playback and grade and also the time to play complex VFX compositions and render your finished timeline.

As there are many potential bottle necks within an image processing pipeline depending on the clip codec, CPU speed and number of cores, system RAM, the number of GPUs, their core count and GPU RAM, even the motherboard slot speed, disk speed, etc. and each of these can affect the playback, editing, grading and display of your timeline. So in selecting your hardware configuration please consider these practical and often physical limitations and scale your system based on your budget as well as your expected performance requirement.

There are hardware configurations detailed below starting from a single dedicated GPU for image processing up to a eight GPU system suitable for demanding 8K projects. While performance varies greatly, most modern Intel, AMD and NVIDIA GPUs that support Metal, OpenCL 1.2 or CUDA 3.0 compute capability will operate with DaVinci Resolve.

DaVinci Resolve and DaVinci Resolve Studio for the most part have the same hardware performance needs so even if you plan on using the free version for home, the hardware configuration is important.

Please review the following information to help you select your system requirements.

Camera RAW and Codec considerations

With the increasing use of digital cameras, projects now often include camera clips at HD, UHD, 4K-DCI or higher resolutions. While some cameras provide UHD or 4K or higher capture resolutions they usually store the images as compressed data as this takes less storage space and bandwidth to record.

However for editing, VFX and grading, the compressed data needs to be decompressed to the full RGB per pixel bit depth that can use four times or more processing power of a HD image for the same real time grading performance. The decompression process, like compression, uses the CPU so the heavily compressed codecs need more powerful and a greater number of CPU cores. H.264 and H.265 are heavily compressed formats and while not ideal for editing are often used by lower cost cameras. If you use these types of compressed codecs you will need a more powerful CPU or be prepared to use proxies or Resolves optimised media feature.

Once the files are decompressed DaVinci Resolve uses the GPU for image processing so the number of GPU cores and the size of GPU RAM becomes a very important factor when dealing with UHD and 4K-DCI sources and timelines. For VFX each layer of images uses GPU memory and so any GPU with a small amount of memory will have a performance hit as you add layers up to the level where the GPU just has insufficient memory and performance.

For uncompressed images, in industry standards like DPX or EXR particularly with 16 bit files, the CPU has an easier time as these are efficient codecs. However they place greater demands on the disk array, RAID controller, storage connection and even the file system itself.

Audio facilitates who plan to use flattened HD video files won't need as powerful GPU or disk I/O as audio files by their nature are smaller than video. But remember, if you are importing a DaVinci Resolve project file or sharing projects on a central database, you may be opening projects with complex video timelines, a variety of image formats and codecs and potentially with demanding VFX elements so even the most basic audio system should be prepared for these demands.



User interface monitors

DaVinci Resolve offers support for a wide variety of UI resolutions in single and also dual monitor configurations. The application is optimized for the Apple Retina 5K screen (5120x2880) with a resultant resolution of 2560x1440 and scales in a number of ways to even operate on laptops screens with 1440x900 resolution with abridged name and icons at the controls.

For Windows and Linux systems we recommend monitors with 2560x1440 down to 1920x1200 resolution for the best layout. There are also a number of superwide screen monitors that are suitable with 3440x1440 resolution to offer more timeline, node editor and gallery still screen space.

Client, edit and grading monitors

Whether you are editing and grading for the latest Hollywood blockbuster, a TV series, web video or your own hobby shots, using a non calibrated monitor or one which drifts in black, white and color values means your shots could look different each day or week and certainly make consistent deliverables a challenge even for the most experienced colorist.

We don't currently recommend any specific client, edit or grading monitors so no matter which you decide on, it's very important to have it calibrated, either by an expert or yourself using a high quality probe. You can use one of the calibration programs that connect with Resolve or a standalone application to generate a 3D LUT and use it in the monitor LUT field within DaVinci Resolve, or within the monitor itself if that capability exists.

Client, edit and grading monitor connections

To deliver consistent quality video deliverables, all editors and colorists working on TV or film projects will need to use a proper color calibrated monitor connected to an SDI or HDMI video I/O card. This device will occupy a PCIe slot in the computer, or a Thunderbolt port depending on the system you have and the video card you select.

DaVinci Resolve supports the Blackmagic Design range of DeckLink and UltraStudio capture and playback devices for SDI video and embedded audio ingest and playback. This I/O device is also used for connecting your client, editing and calibrated grading monitor. Users can loop a single feed from the VTR to the grading monitor or connect the second SDI output directly to the monitor.



You can also connect the HDMI output from the I/O device to feed a second monitor.

This same card or another can be used for SDI ingest into DaVinci Resolve from a deck or live camera.

You can also use the UltraStudio Mini Recorder and Mini Monitor with DaVinci Resolve however there is no ingest or tape transport controls available with these devices.

To use the Blackmagic Design video I/O devices with DaVinci Resolve, you will need to install the Desktop Video drivers. These are provided along with your I/O device. The latest version of the drivers are available from the support page at www.blackmagicdesign.com

Audio output and speaker connections

DaVinci Resolve supports the standard system audio output for most computers, a dedicated USB or Thunderbolt audio I/O device and the range of Blackmagic Design DeckLink and UltraStudio capture and playback devices. To use the Blackmagic Design video I/O devices with DaVinci Resolve, you will need to install the Desktop Video drivers. These are provided along with your I/O device. The latest version of the drivers are available from the support page at www.blackmagicdesign.com



The audio interface will dictate the number of speakers and the configuration that you can connect to DaVinci Resolve. As an example the USB device shown above offers a simple headphone connection and line level outputs that you can connect to stereo power speakers. The same interface can be used for recording audio to Fairlight tracks. Capturing audio with this style of interface at the same time as ingesting SDI is not currently supported. For that operation you will need the embedded SDI audio interface of a Blackmagic Design video I/O device.

For 5.1 and 7.1 outputs consider a USB or Thunderbolt device that has sufficient discreet analog audio connections like the device shown below. This same interface can also be used for MIDI and multiple microphone or line inputs. There are dozens of options available and each are simple connected via the computer audio I/O selection.



For audio studios that need sub milli-second latency and speaker sets greater than 7.1 you can use the Fairlight Audio Accelerator and the Fairlight Audio I/O. These are currently only supported on Windows 10 and require BMD support for configuration. Please contact your local BMD office for assistance.

DaVinci Resolve grading control panels

Of course you can use DaVinci Resolve with your mouse and keyboard or with a pen and tablet however ideally for grading you should use all the benefits that come with the DaVinci Resolve control panel. Whether it's the Micro or Mini control panel, or the Advanced control panel with the custom backlit keys featuring RGB color and intensity to suit your mood and taste, these panels will dramatically improve your creative throughput and will definitely impress your clients.



As an example, with a single key on the panel you can switch your trackballs to grading shadows, mid tones and highlights using log controls with high and low range, contrast and master pivot. There are individual controls on the panel for contrast, lift, gain, color temperature, tint, highlight and lowlight recovery, saturation, color boost and mid tone detail.

In fact each knob allows super fine parameter adjustment and with a simple push, you can reset each parameter back to the default.

Colorists for years have reported more than double and often triple efficiency grading when they use the DaVinci panels. You can use this extra speed for creating more looks, getting through your job quicker when you need to, or just impressing your client by being able to deliver the vision they're looking for without any fuss.

Audio console support

As with grading, your mouse and keyboard or a pen and tablet can be used for editing and mixing audio. However for greater control over multiple parameters at the same time, not to mention routing to other hardware audio processes, a dedicated audio console is a worthy investment.

The Fairlight consoles will soon be available and in the meantime you can use a MIDI connected third party console. Details can be found later in this guide.



Media storage selection and file systems

Mac

DaVinci Resolve for Mac supports a number of internal and external storage systems however almost any storage, designed for Mac and high bandwidth media, will be suitable for use with the Mac file system.

A current model iMac Pro, iMac, Mac Pro and MacBook Pro can be connected directly to a Thunderbolt disk array. Thunderbolt disk arrays provide fast, high capacity disk storage and are easily expandable as your media storage needs grow.

Facilities with SAN based shared storage can work concurrently with projects that are being graded in other Mac, Windows or Linux suites. The most common connection method for the SAN storage is via a Thunderbolt to Fibre channel adapter to connect to a SAN.

The Preferences option under the DaVinci Resolve menu is where you can add or remove internal and external disk storage for use with Resolve. The first volume in the list will be used to store gallery stills and cache files so this should be a drive that is always on your system.



Windows

Windows users can format their drives to the standard NTFS or any Windows supported format such as ExFAT. An external disk array and a RAID or HBA card can also be used for additional disk performance.

Like Mac and Linux, facilities with Windows systems can use SAN based shared storage via single or dual 16Gbit or 32Gbit Fibre Channel connections to a FC card in the Resolve workstation.

The Preferences option under the DaVinci Resolve menu is where you can add or remove internal and external disk storage for use with Resolve. The first volume in the list will be used to store gallery stills and cache files so this should be a drive that is always connected and accessible to your system.

Linux

DaVinci Resolve for Linux supports a number of file systems and in QA we use the Quantum StorNext file system. For more than a decade this has proven to be a robust and reliable file system for direct attached storage (DAS) and storage area network (SAN) systems.

StorNext can provide real-time 8K bandwidth on a continuous basis without dropping or delaying frames as sometimes seen with other file systems. The StorNext license should be purchased from Quantum for a DAS system or ensure your facility has the license if connected to a SAN.

There are also a number of other vendors of file systems suitable for Linux . As there are too many variations for us to test we recommend you consult with your file system vendor for details of what each system can offer you.

Once you have the file system installed, SAN based shared storage can be connected via single or dual 16Gbit or 32Gbit Fibre Channel via a FC card in the Resolve workstation.

Hardware Selection and Setup

Time to select your OS and build your system

The following pages can be used to help select a hardware configuration for a Mac, Windows or Linux DaVinci Resolve system. System interconnection diagrams will also help you plug and play the different components of your selected system.

As there are too many perfectly acceptable configurations for Blackmagic Design to test them all so we recommend visiting the DaVinci Resolve section of the Blackmagic Design Forum to review the feedback other users offer on different configurations and their success for different user applications.

At the end of the guide is a shopping list for each OS where you will see system requirements and recommendations, often with alternatives, and optional extras. GPU models alone change quarterly so this guide should be used as that, a guide to what has been tested and something for you to review before making your hardware selection. These are not exhaustive lists but offer a guideline to help your selection.

We recommend you use this checklist to make sure you have all the items you need to buy and build your system.

Blackmagic Design items

- DaVinci Resolve Studio online activation key or dongle
- Capture and playback card
- DaVinci Resolve Control Panel

System requirements

- Modern computer platform with at least a Quad core CPU and a powerful GPU
- UI monitor if you don't select a laptop or iMac
- Internal storage for the application and project database
- Permanantly connected storage for stills, render cache and audio waveforms
- Keyboard and mouse

Optional extras

- Client, edit or grading monitor
- External media storage and connection
- UI and image processing GPUs for Windows and Linux
- PCIe Expander and external GPUs for Windows and Linux. Thunderbolt expander for Mac
- DaVinci USB Keyboard
- USB tablet and pen
- USB extender
- UI extender
- Database server computer for shared and collaborative workflows

DaVinci Resolve for Mac

Overview and system selection

The Mac offers the broadest format and codec support and systems are available from low power laptops to the iMac Pro. To select the best system configuration for your needs it's important to understand how you will use the system.

There are no special configurations for the majority of Mac systems so you can select from the options listed, select your Blackmagic Design supplied components and then follow the DaVinci Resolve installation instructions.

All users should consider the media storage and other accessory options later in this guide and if you have a system using NVIDIA CUDA GPUs should read the third party driver info below before you start Resolve.

iMac Pro

The 27" Retina 5K iMac Pro with 32GB GPU RAM provides a flexible and versatile desktop workhorse for real time editing, audio mixing and grading material. You should consider the 64GB or even 128GB memory options if you plan extensive Fusion use. The Vega 56 is certainly no slouch and is considerable more powerful than previous iMac GPUs, however we recommend upgrading to the Vega 64 GPU if you can and particularly for UHD and higher resolutions and Fusion use.

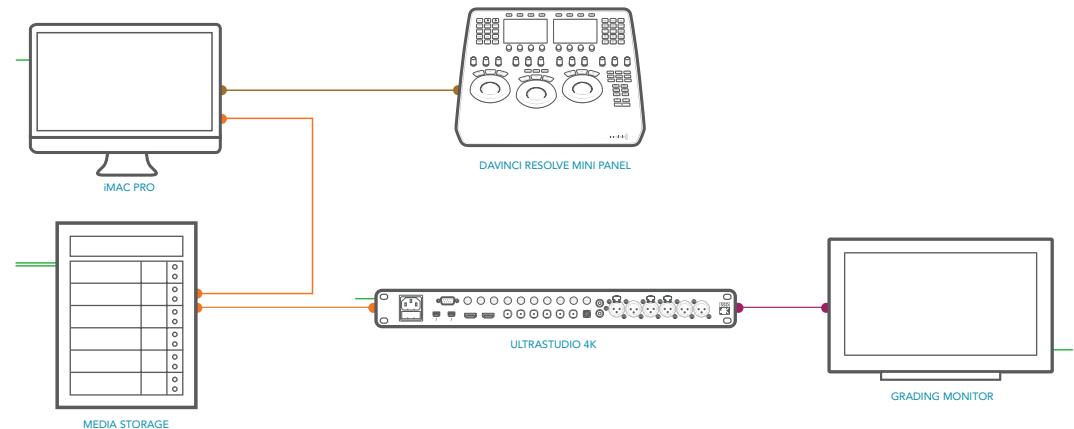


The 27" Retina 5K iMac with 4GB GPU RAM will reach the GPU capabilities sooner with UHD timelines and when using optical flow speed changes, temporal processing and noise reduction, even at lower resolutions and with fewer editing tracks or color grading nodes. Performance of many of the older model iMacs with 2GB of GPU memory is limited even with HD images.

Connection of disk storage systems and the single or dual UI monitoring is via the Thunderbolt 3 ports. These Thunderbolt ports are also used to connect the Blackmagic Design capture and playback card. There are no special setup requirements for the 2017 iMac Pro.

iMac Pro configuration

- Thunderbolt
- USB
- HD-SDI
- Electrical Power



Mac Pro

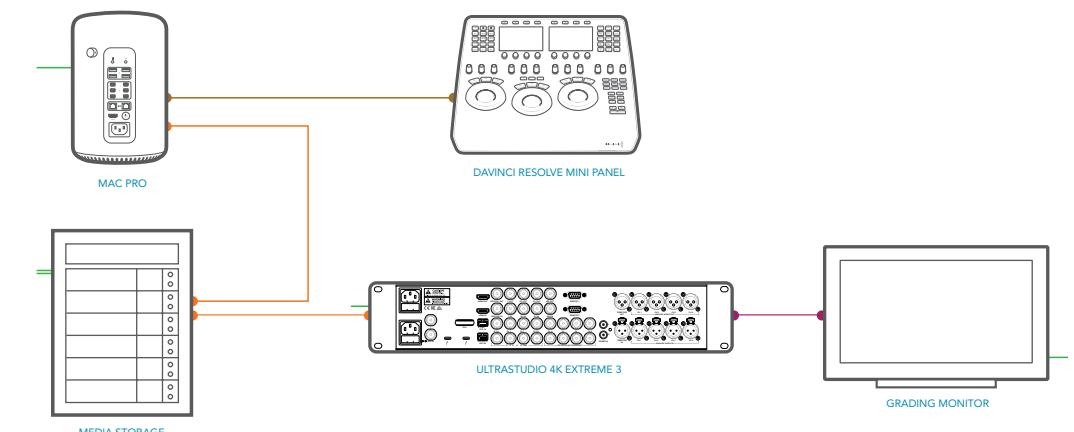
The Mac Pro includes dual AMD GPUs and both of these are used for image processing, even for the free version of DaVinci Resolve. After extensive testing we recommend the D700 GPU model. The D500 GPU model offers limited performance in comparison to the D700 and will exhaust the GPU ram with clips or timelines greater than HD, or when temporal processes, NR and optical flow speed changes are requested.

The 12-core CPU model is ideal for when source clips are UHD or higher resolutions or include heavy clip compression, such as clips from the RED and Sony camera range. We suggest a minimum of 8 CPU cores and 16GB system ram.

Connection of disk storage systems and the single or dual UI monitoring is via the Thunderbolt 2 ports. These Thunderbolt ports are also used to connect the Blackmagic Design capture and playback card. There are no special setup requirements for the 2013 Mac Pro.

Mac Pro configuration

- Thunderbolt
- USB
- HD-SDI
- Electrical Power



MacBook Pro

As all laptop systems are designed for portability and low power, for use with DaVinci Resolve we recommend selecting the fastest CPU, 16GB of system memory and the GPU with the most memory that is currently available.

For example the Retina 15" MacBook Pro can be configured with a Radeon Pro 560 GPU option with 4GB of memory.

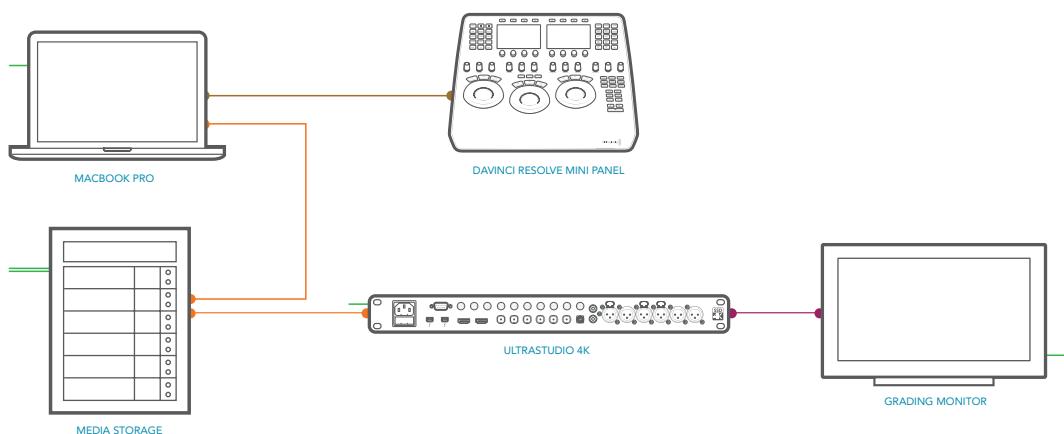


UHD timelines are practical with some performance limitations especially when using optical flow speed changes, temporal processing and noise reduction.

The 15" MacBook Pro with 2GB of GPU memory will reach these GPU limits at lower resolutions and with fewer editing tracks or color grading nodes.

MacBook Pro configuration

- Thunderbolt
 - USB
 - HD-SDI
 - Electrical Power



MacBook

The mid 2017 MacBook in the highest performance configuration, with just 8GB of system RAM and an Intel HD Graphics GPU, has been tested for use with HD ProRes files. For offline editing while you're traveling or just reviewing your BMD camera files from the days shoot its performance while limited is operational with HD timelines.

Mac Mini

While the Mac Mini is not ideal for use as a Resolve workstation, due to its low performance GPU, the current series are suitable for use as a central database server for full license Resolve users that wish to share projects with a few other systems within their facility. Details of the Mac Mini setup and installation of the Remote Database Server are available in the DaVinci Resolve User Guide.

NVIDIA and CUDA drivers for Mac

Mac systems using AMD GPUs have the GPU drivers included in the Mac OS. If you are using DaVinci Resolve from the Apple App Store this also uses the drivers within Mac OS even if you have NVIDIA GPUs.

Systems using NVIDIA GPUs and also not using DaVinci Resolve from the Apple App Store will need to have the correct NVIDIA and CUDA driver to operate the GPUs. While Resolve will check the CUDA version on your system you may have to update it after any OS updates.

There are two parts to successful operation of your NVIDIA CUDA based GPUs.

NVIDIA drivers

If you use Mac OS X 10.8.4 or newer then Apple supplies within the OS NVIDIA drivers for the Apple certified GPUs. If you plan to use a GPU that's not certified for Mac the OS driver will not work. In these cases, while not officially certified you can download and try the NVIDIA web driver for non-Mac GPUs. Generally all older Mac certified cards will work with the latest driver.

CUDA drivers

If your Mac has NVIDIA GPU's and does not have CUDA installed the DaVinci Resolve installer will load the latest CUDA drivers suitable for Resolve. If however your system already has a newer CUDA driver that Resolve needs, the DaVinci Resolve installer will not update this driver as this may cause problems with other applications you have that use CUDA.

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

After quitting Resolve, go to the Apple menu and choose System Preferences. Then 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 the Resolve installer readme, avoid clicking on the "Install CUDA Update" button and instead visit www.nvidia.com/object/mac-driver-archive.html to download the certified CUDA driver version.

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

Installing DaVinci Resolve for Mac

Installing or updating Resolve is essentially the same process. Be sure to log in to your Mac as the user that will be operating Resolve. You will need an Administrator password to install the software on your system and we recommend that DaVinci Resolve be installed into the standard Applications folder on your startup hard disk.

Mac App store version

For DaVinci Resolve purchased from the Mac App Store, just press "Install" in the App store page for Resolve and the App Store takes care of everything. You can also receive alerts when updates are available.

Blackmagic Design website version

Using the installer that was downloaded from the Blackmagic Design website, double click the 'Resolve Icon' and follow the on-screen prompts to install the software.

The installation process takes just a couple of minutes. After the software has been installed you may wish to add the application icon to your dock to make DaVinci Resolve easy to launch.

For DaVinci Resolve Studio you will need to activate your license online or use a USB dongle which contains the Resolve for Mac license and must be connected to your computer before launching the Resolve software.

Driver installation

Systems with a Blackmagic Design capture and playback card for your client, edit or grading monitor you will need to install the latest Desktop Video drivers that are available from the support page at www.blackmagicdesign.com

If you use Apple Final Cut Pro, Avid Media Composer or Adobe Premiere Pro on the same Mac as Resolve, and you wish to use these applications with a DeckLink or UltraStudio, install the latest Desktop Video drivers after installing your alternative editing applications.

Blackmagic Desktop Video drivers install associated easy setup options and presets for a number of other editing applications.

Important steps for first use

There are three important hardware items to configure when you first start the Resolve application.

- 1 Open the Preferences window from the DaVinci Resolve application menu.

The first tab shows the System Overview where you select the application language and you can verify that Resolve has found your GPUs.

You can also select to use the Display GPU for image compute if you have DaVinci Resolve Studio. Finally for some systems you can select the GPU processing mode here.

- 2 Go to the second tab, Media Storage. The first location in the storage list will become the primary location for images, all proxies, cached files and gallery stills. This location will usually not be your system disk but a specifically installed permanent disk for media. Often it's an internal or external RAID disk array and it needs plenty of storage capacity.

If you don't have a permanently connected media array on your system we recommend that you identify a folder on your system disk to use as your primary drive and folder and then add and remove other drives as needed but don't change the primary drive until you have considered how to back up and restore your stills.

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

- 3 In the Video I/O and GPU tab select which capture and playback device you will use for capture and playback. Depending on your workflow, this device may also be connected to a VTR or camera. If you are using Resolve Live, select the video input capture device.



You can also select to use the computer system audio output in preference to the capture and playback card and the speaker configuration for your suite.

- 4 In the Control Panels tab choose which color grading control panel hardware you have connected to your system. DaVinci Resolve supports the current DaVinci Resolve control panels but can also be used with third party panels from Avid, JLCooper and Tangent Devices. Details on connection follow later in this guide.

NOTE The Avid Artist Color does not work with the DaVinci Resolve App Store version due to Apple sandbox restrictions.

The Advanced tab is generally not required by most facilities as it's for specific system configurations. You should leave this blank unless directed otherwise.

- 5 After changing any of these preferences select save and restart the DaVinci Resolve application.

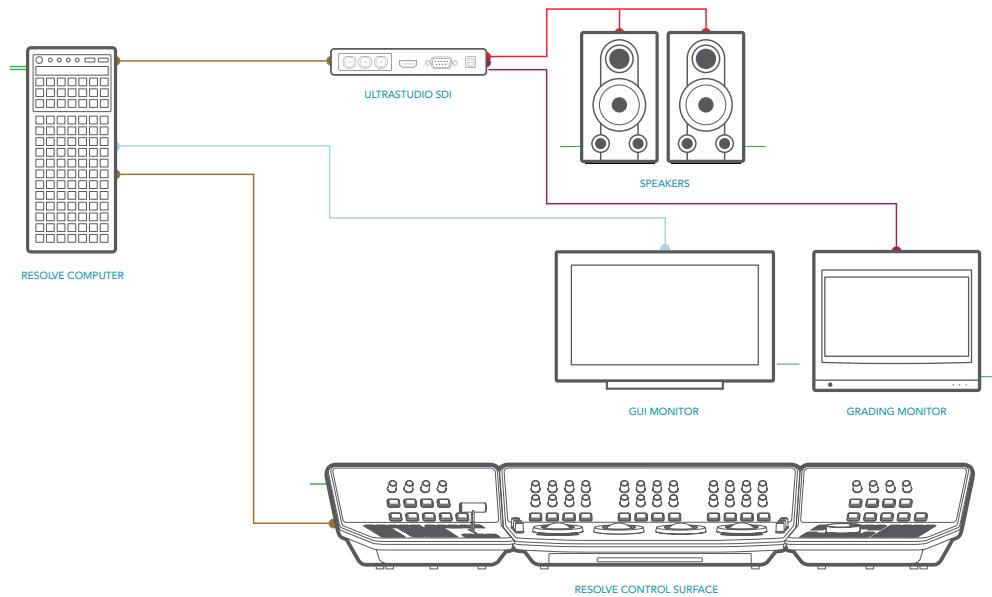
DaVinci Resolve for Windows

Overview and system selection

The Microsoft Windows offers the broadest hardware support and systems are available from low power laptops to the generic motherboard build your own systems for independent users up to the workstation class for facilities that need faster processing. Each has multiple options to consider.

Standard configuration

- DVI
- USB
- HD-SDI
- Audio
- Electrical Power



However in every case there are special performance and hardware configurations for the Microsoft Windows systems so please refer to the hardware and OS setup information below. Please also refer to the GPU driver information and follow the DaVinci Resolve installation instructions and the three important hardware setup steps to get you started.

DaVinci Resolve supports Windows 10 Creators Edition.

All desktop and workstation systems support the use of a PCIe expander to add extra PCIe slots and power. However additional PCIe cards in the computer, such as capture, storage or even an expander HBA, should only be added to the slots shown in the tables below to avoid causing a slow down in the performance of the UI and image processing GPU cards.

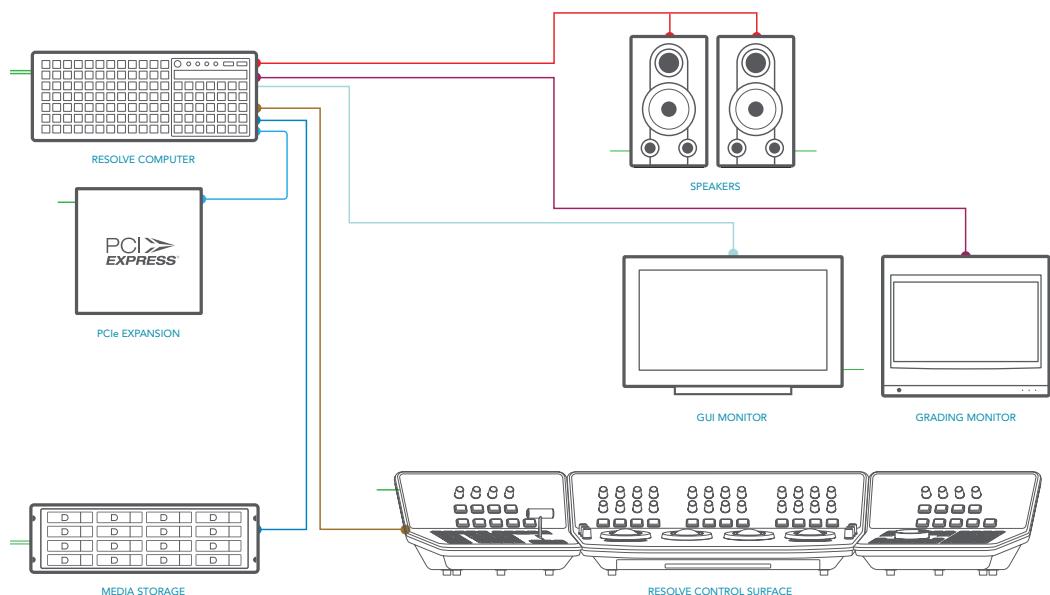
For all systems using an expander, we generally recommend that you install a single UI GPU in your computer and have all image processing GPUs in the expander. While this guide refers to configs with up to three GPUs, there are now third party systems available with more image processing GPUs and for users interested in those configs please contact the vendor directly.

You will also find below a list of suppliers who can offer turnkey systems.

Please note that you cannot mix GPUs from the major suppliers, AMD and NVIDIA, in the one system. We recommend using the same model GPU if multiples are used. A number of GPU options are listed below, as are options for media storage, file system and accessories.

Advanced configuration

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



Generic PCs

If you have a tight budget you can consider one of the many generic pro motherboards now available.

The ASUS motherboard and chassis listed is an example of a generic system that you can build yourself. It will be suitable for most independent users even at 4K when a powerful GPU is installed. The biggest limitation of these systems is the single CPU so files that need decompressing will use most of the CPUs capabilities.

Another key consideration when selecting a generic pro motherboard is not just how many PCIe Gen3 x 16 slots that are available, but how many operate at full speed when other slots are used. Often when you read the fine print, these motherboards only offer x16 speed when just one or two slots are used. Ultimately this reduces real time performance.

The ASUS X299 Deluxe motherboard specification includes 2 x PCIe Gen3.0x16 slots, three x8 slots and a single PCIe Gen2.0x4 (which should not be used). For maximum overall slot bandwidth with Resolve please use the 40 lane CPU and the slots in the following configuration. Slot 1 for GPU, Slot 3 for DeckLink card and slot 5 for RAID controller for external storage. If you use any of the other slots this will reduce the speed of the x16 slots and affect your operational performance.

Most ATX computer chassis provide as many as 10 disk bays for plenty of low cost, internal, SATA disk storage. Alternatively external eSATA, Fibre Channel or even USB 3.0 disk arrays can be used for media storage depending on your image resolution and number of files.

AMD Ryzen Threadripper

The is now an alternative to the Intel CPU in the form of the AMD Ryzen Threadripper. Tests with the 1950X 16-Core Processor with the 3400 MHz clock and 32GB of system memory have shown this to be a viable consideration particularly on a price/performance basis.

We don't recommend this system for use with a PCIe expander or for Linux but with a single AMD GPU, for example the WX9100, performance has been quite good.

Be sure to check the slot use description later in this guide as optimum performance requires cards to be placed in the correct slot.

HP Z8

The HP Z8 provides a flexible and powerful workhorse for previewing and grading material up to and including 8K. As this system has dual CPUs it is more suitable for decompressing hi-res files, such as 4K, 5K and 6K camera RAW.

It can be used as a desktop tower or rack-mounted and contains a single power supply.

The motherboard provides fast image processing using three, PCIe Gen 3.0 x16 slots that do not share bus resources.

One of these slots is used for the UI and the other for image processing GPUs. Please see the recommended slots use in the tables later in this guide to avoid causing a slow down in the performance of the UI and image processing GPU cards.

The Z8 is suitable for Linux and also a PCIe expander to allow for more GPUs.

HP Z6 and HP Z4

HP's Z6 and Z4 are worthy considerations particularly for audio studios or for editing facilities that wont be demanding a high performance 4K or 8K workflow. Be sure to check the slot use description later in this guide as optimum performance requires cards to be placed in the correct slot.

DELL 7920

As an alternative branded PC the Dell 7920 offers single or dual CPU and three PCIe Gen 3x16 non blocking slots making it suitable for UHD editing, grading, Fusion VFX and Fairlight audio applications.

This rackmountable or deskside system can also be provided with substantial storage from DELL suitable for collaboration in the form of Isilon. Please seek further information from your local DELL office.

Note the RAM configurations for optimum memory speed and the best slot configuration later in the guide.

DELL 5820

As an alternative branded PC the Dell 5820 offers single CPU dual PCIe Gen 3x16 non blocking slots making it suitable for editing, grading, and Fairlight audio applications.

Note the RAM configurations for optimum memory speed and the best slot configuration later in the guide.

PC Laptops

In the last year or two there have been an increasing number of systems with the new GPUs that are suitable for use with DaVinci Resolve. So while performance varies greatly, most modern AMD, Intel and NVIDIA GPUs that support OpenCL 1.2 or CUDA 3.0 compute capability will operate with Resolve.

When selecting a system for operational ease you should order a laptop with sufficient screen resolution to clearly show the full UI, such as 1920x1080, and at least 16GB of system RAM.

512GB or more of SSD system disk is also recommended, as is a fast connection for your media storage.

HP Z Book Laptops

While performance for many applications and UHD resolution will be limited the HP Z Book are examples of a laptop suitable for Resolve use.

DELL Precision Laptops

While performance for many applications and UHD resolution will be limited the Dell Precision M7000 is an example of a laptop for Resolve portable use.

Razor Blade

For those wanting ultra thin portability for use with HD media, the Razor RZ09-195 14" is worth considering.

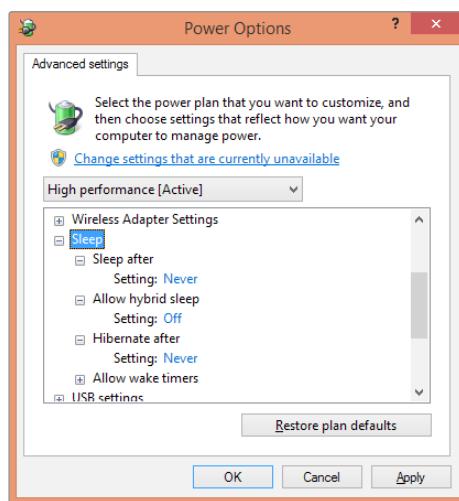
Windows hardware, BIOS and OS configuration

The specific motherboard or computer you select for your Windows system may in its standard jumper configuration set to use internal graphics and the BIOS set for just one GPU. If this is the case you may need to reconfigure the hardware and BIOS prior to installing the OS.

Power settings

DaVinci Resolve is a demanding application and it is important to first ensure your Windows workstation is configured to avoid going into sleep mode or hibernation.

- 1 From the Control Panel select on Power Options.
- 2 Under “Select a power plan”, select “Show additional plans” and then “High Performance”.



- 3 Select “Change plan settings” and ensure the computer is set to “Never” sleep.
- 4 Then select “Change advanced power settings” and ensure all the “Sleep” settings are set to “Never” or “Off”.
- 5 Select “Apply”, “OK”, “Save changes” and close the control panel.

AMD, NVIDIA and CUDA drivers for Windows

DaVinci Resolve uses a number of third party drivers which you may need to install or update depending on the DaVinci Resolve and OS version and also the hardware configuration you are using.

DaVinci Resolve for Windows will use CUDA processing on NVIDIA hardware and OpenCL on AMD GPUs. Please note that systems running both NVIDIA and AMD hardware simultaneously is not supported on DaVinci Resolve for Windows systems.

NVIDIA CUDA GPUs

When you install your NVIDIA GPU you will need to download and install the NVIDIA driver for that specific GPU. Usually it's the latest driver for the most powerful GPU in your system that's required. If the message "WARNING: No CUDA Acceleration Hardware Detected," appears when you launch Resolve and your workstation contains the recommended NVIDIA GPUs, you will need to quit Resolve and update to the recommended NVIDIA driver.

AMD GPUs

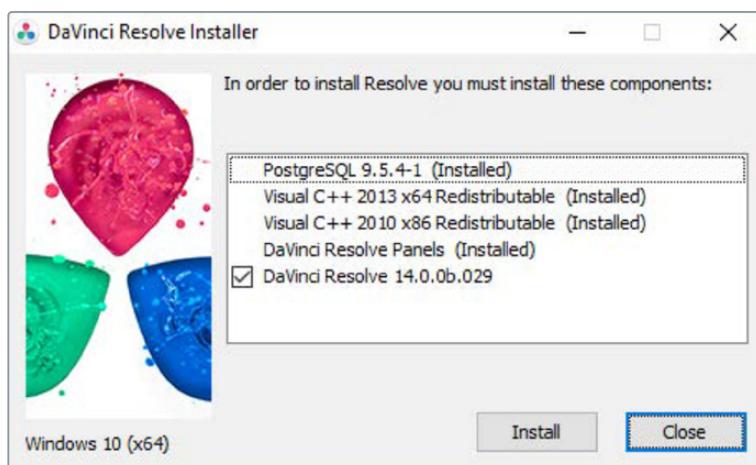
AMD provides a driver installer that you can use to automatically install and configure the appropriate drivers for your AMD GPU. You can download this installer from <http://support.amd.com/en-us/download>.

Installing DaVinci Resolve for Windows

Installing or updating Resolve is essentially the same process. You will need an Administrator password to install the software on your system if you are using a standard User account. We recommend that DaVinci Resolve be installed into the default Program Files folder on your startup hard disk.

Using the installer that was downloaded from the BMD web site, double click the 'DaVinci Resolve Executable' and follow the onscreen prompts to install the software.

The installation process takes just a couple of minutes. When the installation has been completed, you will be prompted to restart your workstation. The installer will add the application to the Program Files folder and will place a shortcut on your Desktop making it easy to launch DaVinci Resolve.



For the full version of DaVinci Resolve, you will need to activate your license online or use a USB dongle which the Resolve for Windows license and must be connected to your computer before launching the Resolve software.

Systems with a Blackmagic Design capture and playback card for your client, edit or grading monitor you will need to install the latest Desktop Video drivers that are available from the support page at www.blackmagicdesign.com

If you use Avid Media Composer or Adobe Premiere Pro on the same computer as Resolve, and you wish to use these applications with a DeckLink or UltraStudio, install the latest Desktop Video drivers after installing your alternative editing applications. Blackmagic Desktop Video drivers install associated easy setup options and presets for a number of other editing applications.

Important steps for first use

There are three important hardware items to configure when you first start the Resolve application.

- 1 Open the Preferences window from the DaVinci Resolve application menu.

The first tab shows the System Overview where you select the application language and you can verify that Resolve has found your GPUs and any Red Rocket cards if installed.

- 2 Go to the second tab, Media Storage. The first location in the storage list will become the primary location for images, all proxies, cached files and gallery stills. This location will usually not be your system disk but a specifically installed permanent disk for media. Often it's an internal or external RAID disk array and it needs plenty of storage capacity.

If you don't have a permanently connected media array on your system we recommend that you identify a folder on your system disk to use as your primary drive and folder and then add and remove other drives as needed but don't change the primary drive until you have considered how to back up and restore your stills.

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

- 3 In the Video I/O and GPU tab select which capture and playback device you will use for capture and playback. Depending on your workflow, this device may also be connected to a VTR or camera. If you are using Resolve Live, select the video input capture device.

This tab also has selections for using a Red Rocket card if. You can also select to use the Display GPU for image compute if you have DaVinci Resolve Studio and also select here if you wish to use the computer system audio output in preference to the capture and playback card.

- 4 In the Control Panels tab choose which color grading control panel hardware you have connected to your system. DaVinci Resolve supports the range of DaVinci Resolve control panels but can also be used with third party panels from Avid, JLCooper, Oxygen Tec and Tangent Devices. Details on connection follow later in this guide.

The Advanced tab is generally not required by most facilities as it's for specific system configurations. You should leave this blank unless directed otherwise.

- 5 After changing any of these preferences select save and restart the DaVinci Resolve application.

DaVinci Resolve for Linux

Overview and system selection

We recommend Mac or Windows systems for their ease of configuration and use, their simple file systems and off the shelf components that generally plug and play. In comparison, Linux systems have a very rudimentary operator desktop, have the most restrictive hardware options, require exacting configuration and also a high performance file system.

The Linux OS does however offer an extremely reliable and powerful platform for facilities that consistently need high performance with high-resolution files from various codecs and is therefore the system of choice for the largest facilities in Hollywood and beyond.

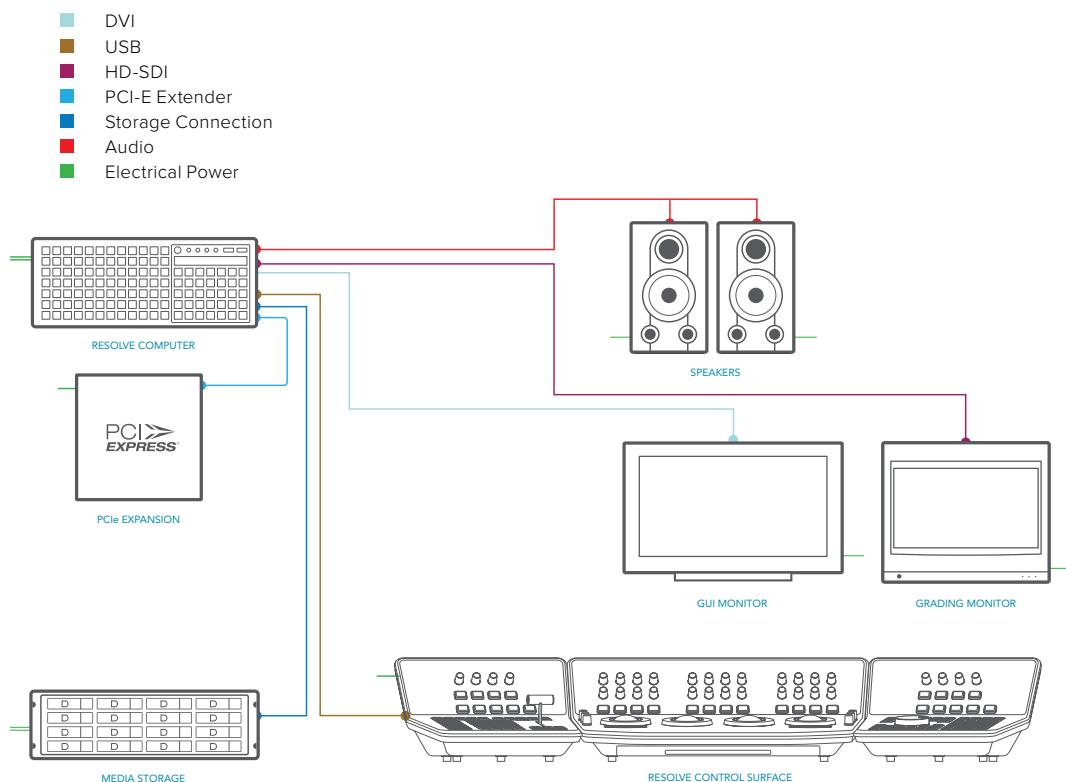
There are hardware configurations detailed below starting from a single dedicated GPU for image processing up to eight GPUs in one system and when configured with the more powerful GPUs this system is suitable for stereoscopic grading and 8K video.

All systems support the use of a PCIe expander to add extra PCIe slots and power. However additional PCIe cards in the computer, such as capture, storage or even an expander HBA, should only be added to the slots shown in the tables below to avoid causing a slow down in the performance of the UI and image processing GPU cards.

For all systems using an expander, we generally recommend that you install a single UI GPU in your computer and have all image processing GPUs in the expander. While this guide refers to configs with up to six GPUs, there are now third party systems available with more image processing GPUs and for users interested in those configs please contact the vendor directly. You will also find below a list of suppliers who can offer turnkey systems of various performance levels and prices.

Please note that you cannot mix GPUs from the major suppliers, AMD and NVIDIA in the one system. We recommend using the same model GPU if multiples are used. A number of GPU options are listed below, as are options for media storage, file system and accessories.

Typical configuration



HP Z8

The HP Z8 provides a flexible and powerful workhorse for previewing and grading material up to and including 8K. As this system has dual CPUs it is more suitable for decompressing hi-res files, such as 4K, 5K and 6K camera RAW.

It can be used as a desktop tower or rack-mounted and contains a single power supply.

The motherboard provides fast image processing using three, PCIe Gen 3.0 x16 slots that do not share bus resources.

One of these slots is used for the UI and the other for image processing GPU and the DeckLink or UltraStudio interface. Please see the recommended slots use in the tables later in this guide to avoid causing a slow down in the performance of the UI and image processing GPU cards.

The Z8 is suitable for Linux and also a PCIe expander to allow for more GPUs.

Supermicro Superservers

While new Supermicro Superservers are available and many customers have reported positive performance once they are configured Blackmagic Design has not performed any recent testing so is not able to provide specific configuration details for these new systems. Please contact your local Supermicro reseller for guidance and support.

For legacy 7048GR-TR Supermicro systems, there are specific jumper configuration and BIOS as indicated in the Windows section above called “Windows hardware, BIOS & OS configuration”.

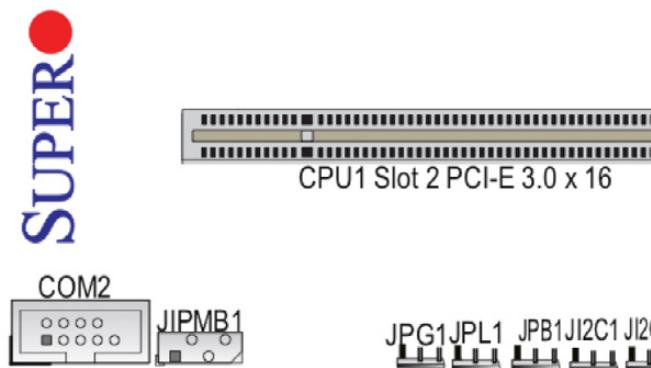
While there are too many variables to list for all motherboards the information provided here for the Supermicro SuperServer may offer the advise you need to configure your system before installing the Linux OS.

If in doubt we recommend that you check with your system vendor.

Supermicro X10DRG-Q Motherboard jumpers and BIOS

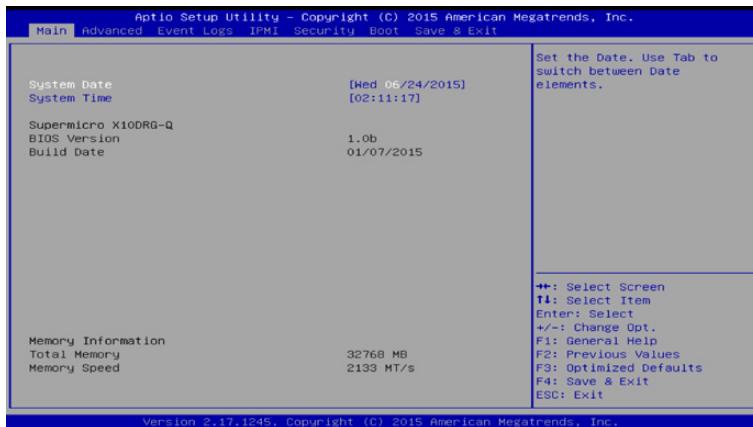
Follow the instructions below to set-up the display jumper to disable the onboard VGA.

- 1 To change the JPG1 jumper setting on the motherboard to disable the onboard VGA graphics locate the JPG1 group of 3 pins that is near the PCI-E slot 2 on the motherboard.
- 2 Remove the jumper from pins 1 and 2 and install it over pins 2 and 3

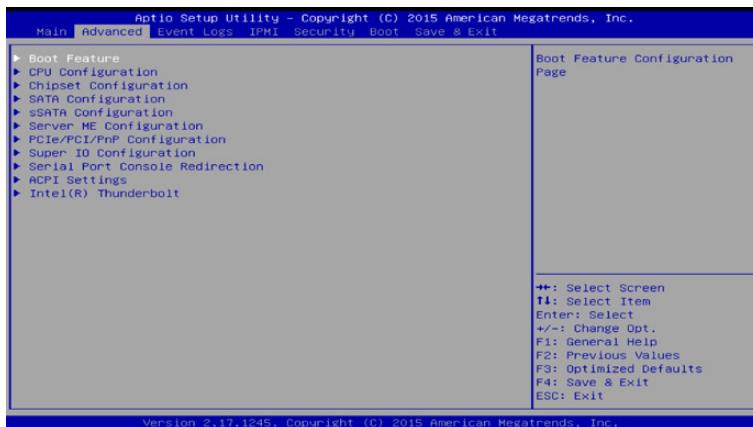


- 3 Unplug all hard disks except the one where you want to install the OS and Resolve.
- 4 Power up the machine. Press 'Delete' when the Supermicro logo appears on the screen in order to go into BIOS.

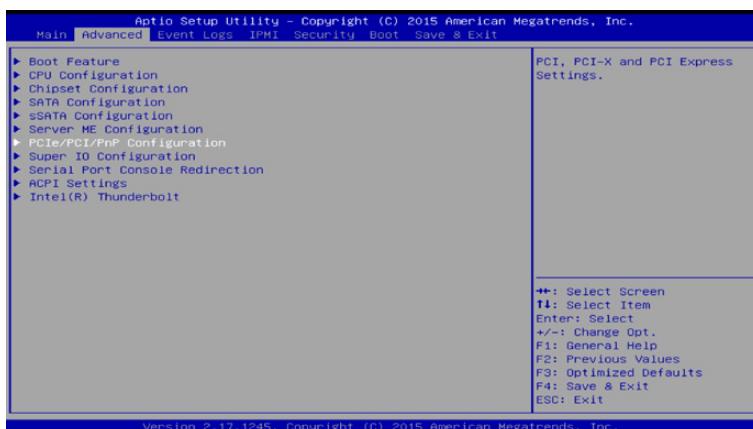
- 5** You will see the main BIOS page shown below. Set the date and time correctly for each server.



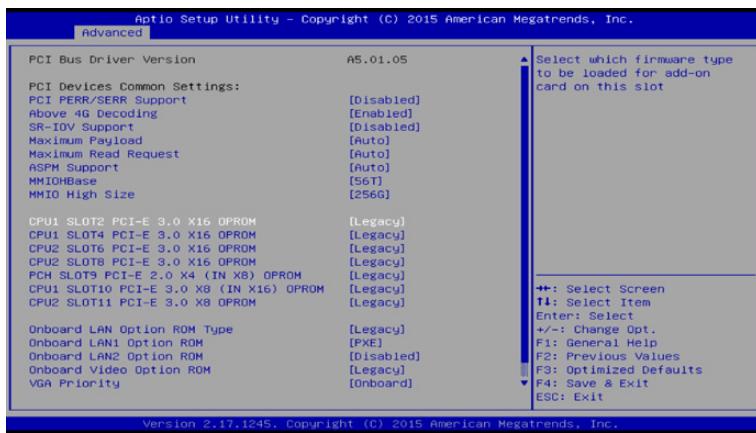
- 6** Use the right arrow key to go to the Advanced page shown below.



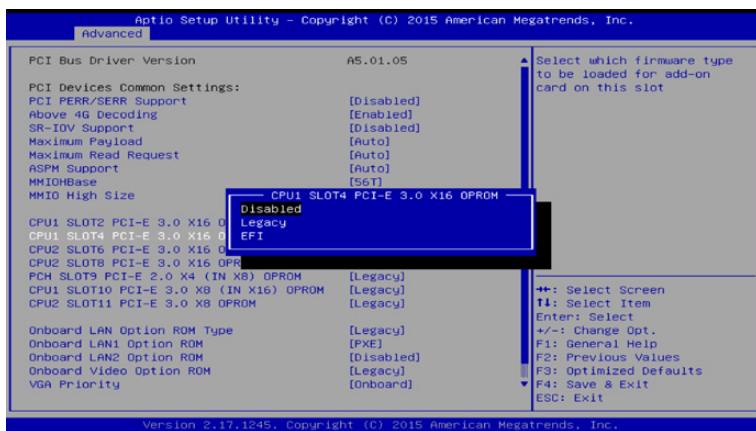
- 7** Now arrow down to select the PCIe/PCI/PNP Configuration page and hit 'Enter'.



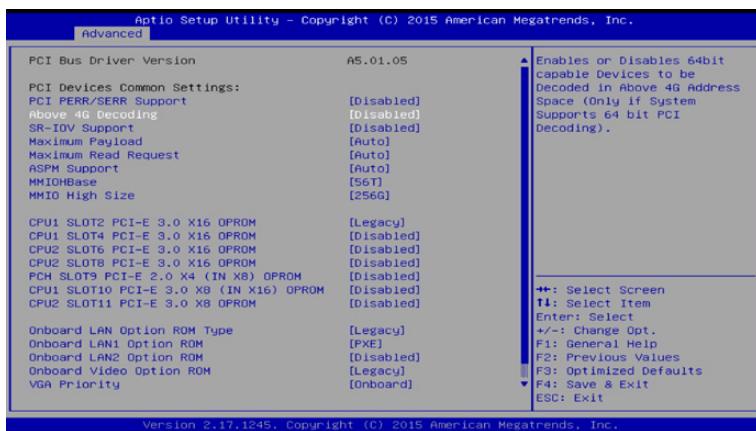
- 8** In the new screen, arrow down to the CPU1 section. You will notice these all currently will indicate ‘Legacy’. We are going to leave slot 2 for the UI GPU and step to slot 4.



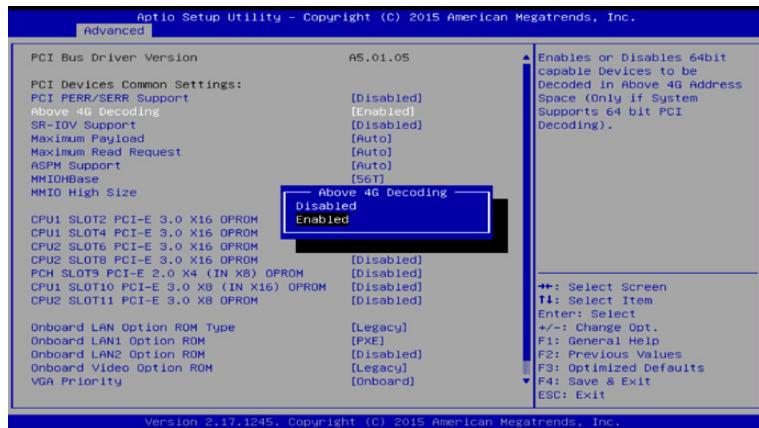
- 9** With the slot 4 line selected hit ‘Enter’ and then using the arrows or -/+ keys select disable and then ‘Enter’ to go back to the list.



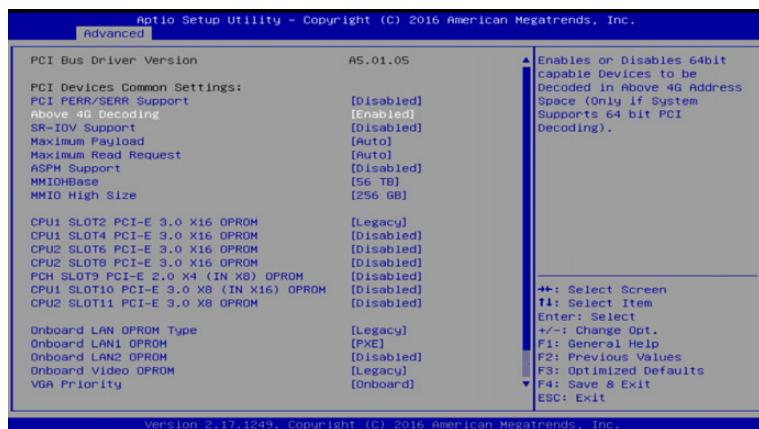
- 10** Repeat step 8 and 9 for the other PCI-E slots. They all should be disabled with the exception of the UI slot 2.
- 11** Then up arrow to select the item ‘Above 4G Decoding’ and hit ‘Enter’.



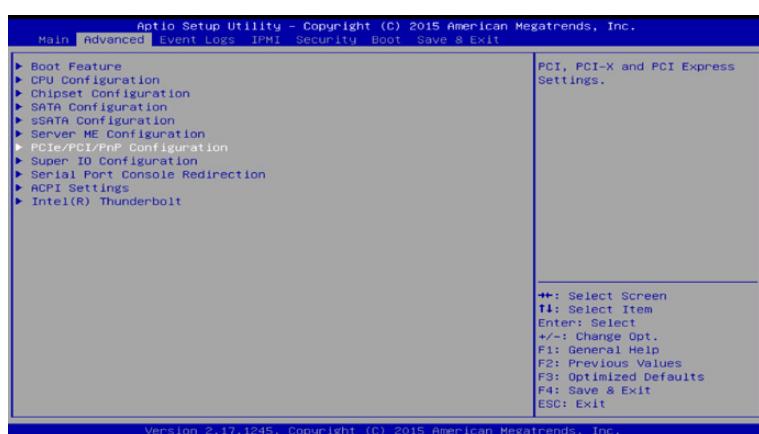
- 12** Change this selection to ‘Enabled’ then ‘Enter’.



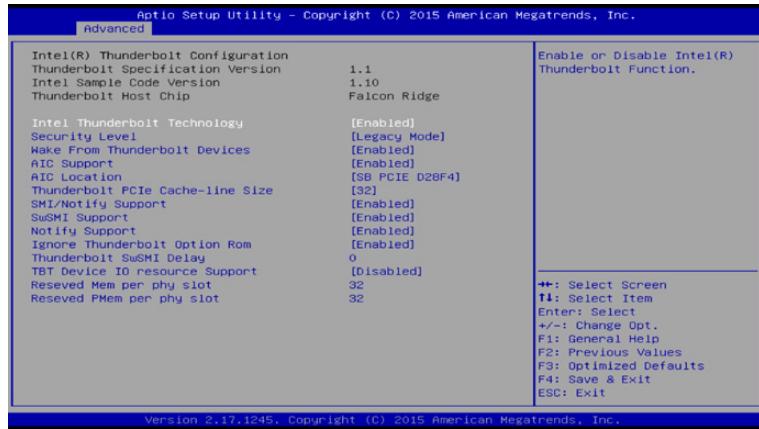
- 13** Double check your configuration is as per below and then select ‘Esc’ to move up one screen.



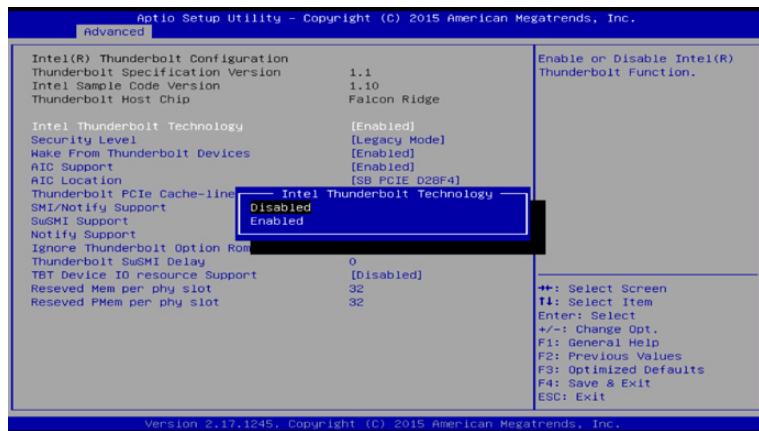
- 14** You are now back at the screen we had in step 7. Arrow down and select ‘Intel Thunderbolt’.



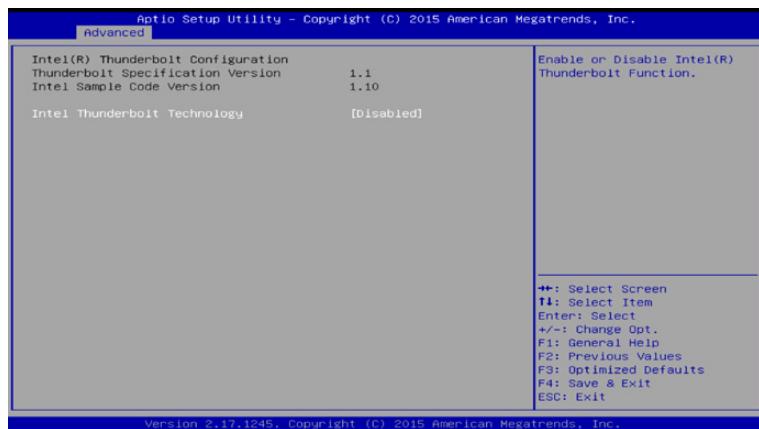
- 15** Then arrow down to ‘Intel Thunderbolt Technology’.



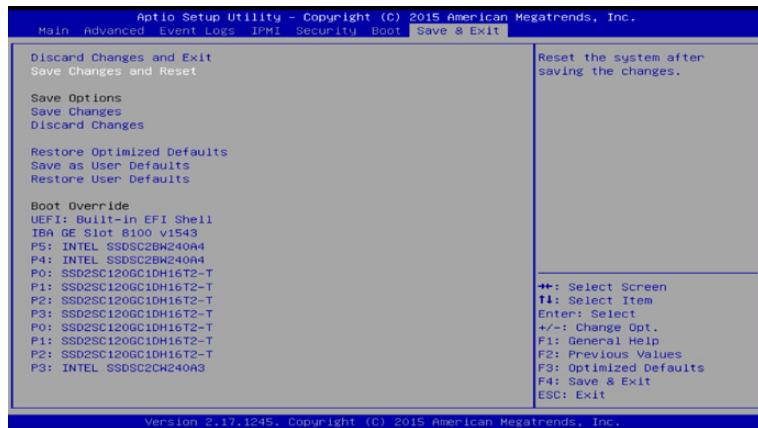
- 16** ‘Enter then select ‘Disabled’ and ‘Enter’ again to complete this step.



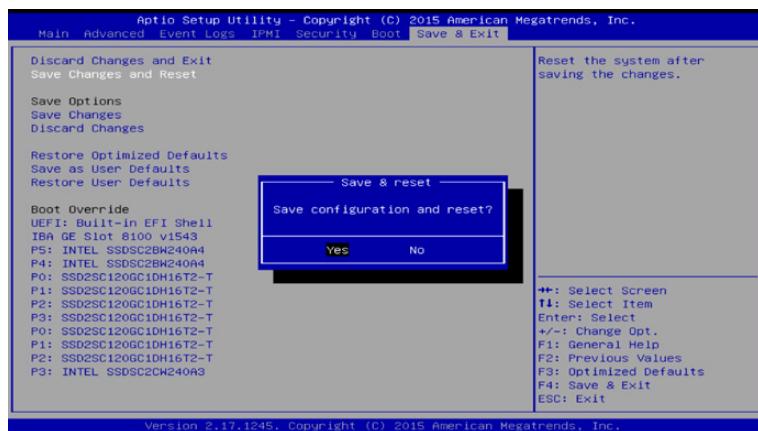
- 17** After disabling you should see this screen below. Then select ‘Esc’ to move up a menu.



- 18** On the home stretch now. Arrow to the right to select Save & Exit and ‘Enter’.



- 19** Down arrow and ‘Select’ Save Changes and Reset. Then confirm ‘Yes’.



This completes the jumper and bios setup and will reboot the computer.

Installing Linux

You can install DaVinci Resolve and DaVinci Resolve Studio for Linux on your own system that has CentOS or RHEL 7.3.

DaVinci Resolve for Linux and DaVinci Resolve Studio for Linux are available from the Blackmagic Design support web site. <https://www.blackmagicdesign.com/support/family/davinci-resolve-and-fusion>.

Storage subsystem connection and file system installation

If you now connect your media storage, via direct RAID controller, fibre channel or GigE, the next step is to install the file system.

There are now a number of options to supply a file system suitable for Linux. Please refer to the list of vendors at the end of the guide. These include the Dell Isilon system and in QA we use the Quantum StorNext file system. For more than a decade this has proven to be a robust and reliable file system for direct attached storage (DAS) and storage area network (SAN) systems.

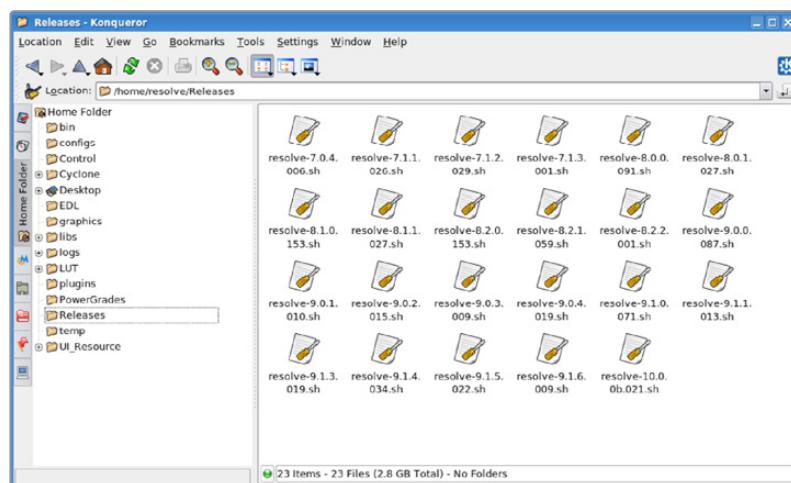
We have certified StorNext version 6.4, 4.7, 4.3 and legacy 3.5.2 systems with Resolve. You can also use StoreNext in a DAS configuration as Resolve hosts the server and client for StorNext. In a SAN configuration, Resolve is a client and the metadata controller (MDC) holds the license information. You StorNext installer will configure Resolve with the IP address of the MDC. Quantum offers a complete turnkey file system including the MDC and storage should you desire this one stop solution for installation and support.

No matter which you choose, we highly recommend that you consult with your local storage subsystem vendor for installation and configuration guidance.

Installing DaVinci Resolve for Linux

Installing or updating Resolve is essentially the same process.

Double-click the ‘Home’ icon on the desktop and, in the resulting window, open the ‘Resolve’ folder to reveal the ‘Releases’ folder. Any future version updates to the Resolve application should be put into the ‘Releases’ folder to make installation easy.



Installation instructions for DaVinci Resolve and DaVinci Resolve Studio software (for the legacy Resolve DVD environment, skip to the next section)

- 1** Download DaVinci_Resolve_Studio_15.x_Linux.zip (if you have a DaVinci Resolve license dongle) or DaVinci_Resolve_15.x_Linux.zip from the Blackmagic Design website.

- 2** Open a Terminal shell

- 3** You need to now become the root user. Type:

```
SU -
```

When prompted, please enter your ‘root’ user’s password.

- 4** Navigate to the folder where you downloaded the DaVinci Resolve software. Type:

```
cd /path/to/downloaded/software/location
```

- 5** Unzip the downloaded file. Type:

```
unzip DaVinci_Resolve_Studio_15.x_Linux.zip
```

or

```
unzip DaVinci_Resolve_15.x_Linux.zip
```

- 6** Run the DaVinci Resolve or DaVinci Resolve Studio installer

```
sh DaVinci_Resolve_Studio_15.x_Linux.sh
```

or

```
sh DaVinci_Resolve_15.0b1_Linux.sh
```

On legacy DaVinci Resolve Linux installations with the DVD environment, Resolve can be installed by following the instructions provided below.

- 1 Download *DaVinci_Resolve_Studio_15.x_Linux.zip* file.
- 2 Double click the zip file to open it and drag *DaVinci_Resolve_Studio_15.x_Linux.sh* to the */home/resolve/Releases/* folder
- 3 Double-click the installer to install the release from the File Browser

When the installation has been completed, you may wish to restart the server but it's not required. It's easy to launch the app from the DaVinci Resolve menu or the Desktop Icon.

Systems with a Blackmagic Design capture and playback card for your client, edit or grading monitor you will need to install the latest Desktop Video drivers that are available from the support page at www.blackmagicdesign.com.



Final setup checks

Once the application installation is complete, please reboot the server. Testing can be performed at this stage, prior to installing the file system if you have not completed that yet.

Shopping Guide

Mac systems

Blackmagic Design items for Mac

DaVinci Resolve Studio for Mac Application

<http://www.blackmagicdesign.com>

DaVinci Resolve Control Panels

<https://www.blackmagicdesign.com/products/davinciresolve>

Blackmagic Design Capture and Playback Card

UltraStudio 4K Extreme 3

<http://www.blackmagicdesign.com/products>

Please refer to the Blackmagic Design web site for feature set details.

NOTE: HD-SDI I/O and HDMI output is supported by DaVinci Resolve

Alternatives with a different feature set

- UltraStudio 4K
- Ultrastudio Mini
- Mini Monitor
- Mini Recorder

<http://www.blackmagicdesign.com/products>

Apple Hardware

Apple iMac Pro with Retina Display

End 2017 27" Retina 5K model, 14-core

2.5GHz Intel Xeon W processor

32GB system RAM recommended

64GB or even 128GB system RAM recommended for Fusion users Radeon Pro Vega 64 GPU

2TB Internal SSD storage

<http://www.apple.com/imac-pro>

Alternatives with a different feature set

Apple iMac Pro with Retina Display

End 2017 27" Retina 5K model, 10-core

3GHz Intel Xeon W processor

32GB system RAM recommended

64GB or even 128GB system RAM recommended for Fusion users Radeon Pro Vega 64 GPU

2TB Internal SSD storage

<http://www.apple.com/imac-pro>

Apple iMac Pro with Retina Display

End 2017 27" Retina 5K model, 8-core

3.2GHz Intel Xeon W processor 32GB system RAM recommended

64GB or even 128GB system RAM recommended for Fusion users Radeon Pro Vega 56 GPU

1TB Internal SSD storage

<http://www.apple.com/imac-pro>

Apple iMac with Retina Display

Mid 2017 27" Retina 5K model, quad-core

4.2GHz Intel Core i7 processor

32GB system RAM recommended

1TB Internal SSD storage

Radeon Pro 580 with 8GB of VRAM

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

Apple iMac with Retina Display

Mid 2017 27" Retina 5K model, quad-core

3.5GHz Intel Core i5 processor

16GB system RAM recommended minimum

1TB Internal SSD storage

Radeon Pro 575 with 4GB of VRAM

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

Apple MacPro

Late 2013 model, 12 Core Dual D700 GPU

2.7GHz Intel Xeon E5 12 Core processor

32GB system RAM recommended

1TB PCIe-based internal flash storage

Dual AMD FirePro D700 GPUs

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

Apple MacBook Pro with Retina Display

Mid 2017 15" model, quad-core i7
3.1GHz Intel Core i7 processor
16GB system RAM
512GB PCIe-based SSD
Radeon Pro 560 with 4GB VRAM
<http://www.apple.com/macbook-pro>

Apple MacBook Pro with Retina Display

End 2016 15" model, quad-core i7
2.6GHz Intel Core i7 processor
16GB system RAM recommended 512GB PCIe internal flash storage
Radeon 450 with 2GB VRAM
<http://www.apple.com/macbook-pro>

Apple MacBook Pro with Retina Display

Early 2015 13" model, dual-core i5
2.9GHz Intel Core i5 processor
16GB system RAM recommended 512GB PCIe internal flash storage Intel Iris Graphics 6100
<http://www.apple.com/macbook-pro>

Apple MacBook

Limited performance for more than HD ProRes

Mid 2017 12" model, dual-core i5
1.3GHz Intel Core i5 processor
8GB system RAM
512GB PCIe internal SSD storage
Intel HD Graphics 615
<http://www.apple.com/macbook>

Apple Mac Mini

Optional Central Database Server Late 2014 model, dual-core i7
3.0GHz Intel Core i7 processor
16GB system RAM
512GB PCIe internal flash storage
Intel Iris Graphics 5100
<http://www.apple.com/macmini>

UI monitor options

Apple

LG Ultrafine 27" 5K Display

<http://www.apple.com>

Dell

Dell UltraSharp 30" UP3017 monitor

<http://www.dell.com/ae/business/p/dell-up3017-monitor/pd>

Windows systems

Blackmagic Design items for Windows

DaVinci Resolve Studio for Windows application

<http://www.blackmagicdesign.com>

DaVinci Resolve Control Panels

<https://www.blackmagicdesign.com/products/davinciresolve>

Blackmagic Design Capture and Playback Card

DeckLink 4K Extreme 12G

with optional

DeckLink 4K Extreme 12G - Quad SDI

<http://www.blackmagicdesign.com/products>

Please refer to the Blackmagic Design web site for feature set details

NOTE HD-SDI I/O and HDMI output is supported by DaVinci Resolve

Alternatives with a different feature set

- DeckLink 4K Extreme 12G
- DeckLink Studio 4K
- Mini Monitor
- Mini Recorder

<http://www.blackmagicdesign.com/products>

Microsoft Windows

Microsoft Windows 10 Professional – Fall Creators update

<http://www.microsoft.com/en-us/windows/features>

Generic PC

ASUS ATX Motherboard

PRIME X299-Deluxe

44-Lane 10 or 12 Core

Intel X-Series Processors on LGA 2066 Socket

16GB (4 x 4GB RAM) DDR4-3200 SDRAM minimum

64GB or 128GB or more recommend for Fusion

<https://www.asus.com/Motherboards/PRIME-X299-DELUXE/>

Generic Chassis

Generic ATX chassis such as Cooler Master HAF 932 Advanced

<http://www.coolermaster.com/case/full-tower/haf-932-advanced>

Power Supply

1000W or greater ATX PSU such as Corsair Professional Series HX1050 Power Supply

<http://www.corsair.com/en/hx-series-hx1050-power-supply-1050-watt-80-plus-gold-certified-modular-psu>

Other Components

1TB SSD system hard drive DVD-RW drive, SATA, Black

GIGABYTE Motherboard

X399-AORUS Gaming 7

1950X 16-Core AMD Ryzen™ Threadripper™ Processor with the 3400 MHz clock

16GB (4 x 4GB RAM) DDR4-3200 SDRAM minimum

64GB or 128GB or more recommend for Fusion

<https://www.gigabyte.com/Motherboard/X399-AORUS-Gaming-7-rev-10#kf>

Generic Chassis

Generic ATX chassis such as Cooler Master HAF 932 Advanced

<http://www.coolermaster.com/case/full-tower/haf-932-advanced/>

Power Supply

1000W or greater ATX PSU such as Corsair Professional Series HX1050 Power Supply

<http://www.corsair.com/en/hx-series-hx1050-power-supply-1050-watt-80-plus-gold-certified-modular-psu>

Other Components

1TB SSD system hard drive DVD-RW drive, SATA, Black

Workstations

HP Z8

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

96GB RAM

128GB total (8x16 GB DDR4-2666 ECC Registered Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www8.hp.com/us/en/campaigns/workstations-z8/index.html>

HP Z6

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

96GB RAM total (12x8 GB DDR4-2666 ECC Registered Memory)

128GB total (8x16 GB DDR4-2666 ECC Registered Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www8.hp.com/us/en/campaigns/workstations-z4-z6/index.html>

DELL Precision 7920 Tower

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

64GB total (8x8GB 2666MHz DDR4 RDIMM ECC memory)

128GB total (8x16GB 2666MHz DDR4 RDIMM ECC Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www.dell.com/en-us/work/shop/workstations-isv-certified-dell/precision-7920-tower/spd/precision-7920-workstation>

Alternatives with a different feature set

HP Z4

Intel® Core™ i9-7940X Processor, 3.1 GHz, 14 core

32GB RAM (4x8 GB) DDR4-2666 ECC Memory

Minimum of 64 GB (8x8 GB) DDR4-2666 ECC Memory) or more recommended for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www8.hp.com/us/en/campaigns/workstations-z4-z6/index.html>

DELL Precision 5820 Tower

Intel(R) Xeon(R) W-2155 CPU @ 4.0GHz 10-Core

32GB RAM (4x8 GB) 2666MHz RDIMM ECC Memory

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www.dell.com/en-us/work/shop/workstations-isv-certified-dell/precision-5820-tower/spd/precision-5820-workstation>

Laptops

Multiple alternative options shown

HP ZBook 17 G4 Customised Mobile

Intel i7-7820HQ, 2.9 GHz

64GB minimum system RAM

NVIDIA Quadro P5000 GPU with 16GB ram 1 TB SSD system hard drive

<https://store.hp.com/us/en/pdp/hp-zbook-17-g4-mobile-workstation---customizable-z8x67av-mb>

Dell Precision M7000 15"

Intel i7-6820HQ, 2.7 GHz

16GB minimum system RAM

NVIDIA Quadro M2000 mobile GPU with 4GB ram

1 TB SSD system hard drive

<http://www.dell.com/sg/business/p/precision-m7510-workstation/pd>

Razer Blade RZ09-195 14"

Intel i7-6700, 2.6 GHz

16GB minimum system RAM NVIDIA Geforce GTX1060 GPU 512GB SSD

<https://www.microsoft.com/en-us/store/d/razer-blade-rz09-0195-signature-edition-gaming-laptop/8zhqthfn884z?activetab=pivot%3aoverviewtab>

Linux systems

Blackmagic Design items for Linux

DaVinci Resolve Studio for Linux Application

<http://www.blackmagicdesign.com>

DaVinci Resolve Control Panels

<https://www.blackmagicdesign.com/products/davinciresolve>

Blackmagic Design Capture and Playback Card

DeckLink 4K Extreme 12G

with optional

DeckLink 4K Extreme 12G - Quad SDI

<http://www.blackmagicdesign.com/products>

Please refer to the Blackmagic Design web site for feature set details

Alternatives with a different feature set

- DeckLink 4K Extreme
- DeckLink Studio 4K
- Mini Monitor
- Mini Recorder

<http://www.blackmagicdesign.com/products>

Linux Workstations

HP Z8

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

96GB RAM

128GB total (8x16 GB DDR4-2666 ECC Registered Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www8.hp.com/us/en/campaigns/workstations-z8/index.html>

HP Z6

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

96GB RAM total (12x8 GB DDR4-2666 ECC Registered Memory)

128GB total (8x16 GB DDR4-2666 ECC Registered Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www8.hp.com/us/en/campaigns/workstations-z4-z6/index.html>

DELL Precision 7920 Tower

Dual Intel(R) Xeon(R) Gold 6132 CPU, 2.60GHz 14-Core

64GB total (8x8GB 2666MHz DDR4 RDIMM ECC memory)

128GB total (8x16GB 2666MHz DDR4 RDIMM ECC Memory) or more recommend for Fusion

1TB SSD system hard drive

1 x DVD-RW drive, SATA, Black

<http://www.dell.com/en-us/work/shop/workstations-isv-certified-dell/precision-7920-tower/spd/precision-7920-workstation>

Alternatives with a different feature set

Supermicro SuperServer 7048GR-TR

Black 4RU Rackmountable/Tower

Dual Intel Xeon E5-2698 v4 (dual 20 core; dual 12 core is minimum recommended)

32GB (8x4GB memory sticks) or more ECC DDR4-2400 SDRAM

Use the same size RAM in all eight slots for maximum RAM access speed Intel SSD530

480GB SSD SATA system drive or larger

DVD-RW drive, SATA, Black

<http://www.supermicro.com/products/system/4u/7048/sys-7048gr-tr.cfm>

Media storage

Thunderbolt storage

Multiple alternative options shown

G-Technology G Speed Shuttle (TB3)

<http://www.g-technology.com/products/g-speed-shuttle-xl>

G-Technology G RAID with Thunderbolt 3

<http://www.g-technology.com/products/g-raid-tb3>

Netstor NA333TB3, NA338TB3

http://www.netstor.com.tw/product_info.aspx?SerID=2&Title=Thunderbolt&ArID=24&PID=PID_170428512347057
http://www.netstor.com.tw/product_info.aspx?SerID=2&Title=Thunderbolt&ArID=24&PID=PID_170313293836163

Accusys A16T3-Share

<http://www.accusys.com.tw/T-Share/A16T3-Share/>
<http://www.accusys.com.tw/T-Share/A12T3-Share/>

Accusys Gamma 12

<http://www.accusys.com.tw/Gamma/Gamma12/>

CalDigit T4 RAID (TB3)

<http://www.caldigit.com/External-Hard-Drive/SSD/Thunderbolt-3/T4-RAID/>

Lacie 5big Thunderbolt 2

<https://www.lacie.com/as/en/products/big/5big-thunderbolt-2/>

Lacie 8big Rack Thunderbolt 2

<https://www.lacie.com/as/en/products/big/8big-rack-thunderbolt-2/>

OWC Thunderbay 4 (TB3)

<https://www.owcdigital.com/products/thunderbay-4-thunderbolt-3>

OWC Thunderbay 4

<https://www.owcdigital.com/products/thunderbay-4>

PCIe attached storage

Multiple alternative options shown

Accusys A08S4-PS, 8 Bay RAID

<http://www.accusys.com.tw/ExaSAN/A08S4-PS/>

Accusys A16S3-PS, 16 Bay RAID

<http://www.accusys.com.tw/ExaSAN/A16S3-PS/>

Accusys SWF16, PCIe Switch

<http://www.accusys.com.tw/ExaSAN/SW16-G3/>

Ethernet attached storage

Multiple alternative options shown

Quantum Xcellis Scale-out NAS

<https://www.quantum.com/products/scale-out-storage/nas/index.aspx>

Isilon Scale-out NAS

<https://www.emc.com/en-us/storage/isilon/index.htm>

Studio Network Solutions EVO

<http://www.studionetworksolutions.com/evo/>

<http://www.studionetworksolutions.com/evo-dpx-shared-storage/>

Lumaforge Jellyfish Mobile & Share Station

<https://lumaforge.com/jellyfish/> <https://lumaforge.com/sharestation/>

EditShare XStream EFS Scale-out Storage

<http://www.editshare.com/products/xstream-efs>

Ardis Technologies DynamicDrivePool (DDP)

<http://www.dynamicdrivepool.com>

Archion Omni

<https://www.archion.com/products/editstor-omni>

Storage file system**Quantum StorNext 6.x**

<http://www.quantum.com/products/software/stornext/index.aspx>

Scale Logic HyperFS

<http://www.scalelogicinc.com/HyperFS/>

HBA for Fiber Channel SAN external storage**ATTO 16Gbps Dual Channel PCIe Fiber Channel HBA**

Model: CTFC-162E-000

<http://www.attotech.com/products/product.php?cat=1&scat=33&prod=108&sku=CTFC-162E-000>

ATTO 16Gbps Single Channel PCIe Fiber Channel HBA

Model: CTFC-162E-000

<http://www.attotech.com/products/product.php?cat=1&scat=33&prod=109&sku=CTFC-161E-000>

Fibre channel attached storage

Multiple alternative options shown

Quantum Scale-out Storage

<http://www.quantum.com/products/scale-out-storage/index.aspx>

Scale Logic Genesis Unlimited SAN Appliance

<http://www.scalelogicinc.com/Genesis-Unlimited/>

GPU selection

DaVinci Resolve performs all image processing in the GPU so selection is important based on the clip type, resolution of the clips and timeline, the processes selected within Resolve and of course final render resolution. Even the debayer of Camera RAW media is performed in the GPU so any 4K, 6K or 8K camera RAW files need a large amount of GPU RAM and compute power even if you are using just an HD timeline.

Some of the image processing operations in DaVinci Resolve, temporal noise reduction, optical flow speed changes, motion effects and OpenFX plugins, also need large GPU memory for operation and utilize a single GPU regardless of the number installed. These processes might not be available or operation could be restricted on GPUs with limited memory so consider this when selecting your GPU from the options below.

For processing UHD or 4K-DCI images we recommend 8GB or more of GPU memory (RAM). For some operations 4GB will be sufficient. 2GB is not recommended.

When selecting GPUs, they all need to be from the same supplier, either NVIDIA or AMD.

For multiple GPU configurations, you should use the same model GPU for all processing GPUs.

NVIDIA options

Premium Quadro options

NVIDIA Quadro GV100

32GB HBM2 RAM

<https://www.nvidia.com/en-us/design-visualization/quadro-store/>

NVIDIA Quadro GP100

16GB HBM2 RAM

<https://www.nvidia.com/en-us/design-visualization/quadro-store/>

NVIDIA Quadro P6000

24GB GDDR5 SDRAM

<https://www.nvidia.com/en-us/design-visualization/quadro-store/>

NVIDIA Quadro P5000

16GB GDDR5 SDRAM

<https://www.nvidia.com/en-us/design-visualization/quadro-store/>

Premium Titan options

NVIDIA Titan V

12GB HBM2 RAM

<https://www.nvidia.com/en-us/titan/titan-v/>

NVIDIA TITAN Xp

12GB GDDR5X SDRAM

<https://www.nvidia.com/en-us/titan/titan-xp/>

NVIDIA options

GeForce options

NVIDIA GeForce GTX 1080ti

11GB GDDR5 SDRAM

<https://www.nvidia.com/en-us/geforce/products/10series/geforce-store/>

NVIDIA GeForce GTX 1080

8GB GDDR5 SDRAM

<https://www.nvidia.com/en-us/geforce/products/10series/geforce-store/>

AMD GPUs

Premium Pro WX Series options

AMD Radeon WX9100

16GB GDDR5 SDRAM

<http://www.amd.com/en-us/products/graphics/workstation/firepro-3d/9100>

AMD Radeon Pro WX 7100

16GB GDDR5 SDRAM

<https://www.amd.com/en-us/products/graphics/workstation/firepro-3d/7100>

Premium Radeon options

AMD Radeon Pro Duo

2x16GB GDDR5 SDRAM

<https://www.amd.com/en/products/professional-graphics/radeon-pro-duo-polaris>

eGPUs

The following have been tested in a TB3 eGPU expander

AMD Radeon RX580

8GB GDDR5 SDRAM

<https://www.amd.com/en/products/graphics/radeon-rx-580>

AMD Radeon Pro 580

16GB GDDR5 SDRAM

<https://www.amd.com/en/graphics/workstations-radeon-pro-500>

NVIDIA TITAN Xp

12GB GDDR5X SDRAM

<https://www.nvidia.com/en-us/titan/titan-xp/>

Expanders

Windows and Linux desktop or rack mount computers offer connection to an external expander chassis via its PCIe motherboard connector. This permits extra GPUs to be installed for use by the unique processing controller in DaVinci Resolve Studio. While there are a number of expanders available in the market only a few have been tested and certified for use with DaVinci Resolve.

The new Thunderbolt 3 expanders can be used for GPU, a fibre channel adapter, storage interface or raid controller or a Red Rocket or Rocket X card.

If you use one of the chassis recommended in the Windows or Linux sections you must install the expander HBA in the PCIe slot indicated and then your image processing GPUs in the expander as indicated. The UI GPU should remain in the main computer, as should the DeckLink and a RAID controller if installed.

NOTE There are multiple PCIe expander options listed below. Not all offer Gen 3.0 x 16 speed to every slot and the power supply limits on some expanders make them suitable for only one or two GPUs especially if a RED Rocket card is also installed.

PCIe expansion chassis options

Multiple alternative options are shown in no particular order

CUBIX GPU-Xpander Series

<https://www.cubix.com/davinci-resolve-systems/>

CUBIX GPU-Xpander Desktop Elite

Model: XPDT-G3-ELDHE5 (Hi-flow exhaust)

<http://www.cubixgpu.com/xpander-desktop>

CUBIX GPU-Xpander Rackmount Elite

Model: XPRM-G3-ELRHE

<http://www.cubixgpu.com/xpander-rackmount-elite>

Cyclone PCIe2-2707 (five slot)

www.cyclone.com/products/expansion_systems/600-2707.php

Thunderbolt expanders

Multiple alternative options are shown in no particular order

Sonnet eGFX Breakaway Box

<http://www.sonnettech.com/product/thunderbolt/index.html>

One Stop Systems Magma ExpressBox 1T, 3T

<https://www.onestopsystems.com/magma-thunderbolt-expansion/?ref=magma.com/expressbox-3t>

Netstor Thunderbolt 3 NA211TB3 , NA333TB3, NA338TB3

http://www.netstor.com.tw/product_info.aspx?SerID=2&Title=Thunderbolt&ArID=82&PID=PID_170427401346986
http://www.netstor.com.tw/product_info.aspx?SerID=2&Title=Thunderbolt&ArID=24&PID=PID_170313293836163
http://www.netstor.com.tw/product_info.aspx?SerID=2&Title=Thunderbolt&ArID=24&PID=PID_170428512347057

Accessories

Logic keyboard Apple DaVinci Resolve

<http://logickeyboard.com/shop/blackmagic-davinci-resolve-apple-keyboards-1074c1.html>
<http://logickeyboard.com/shop/blackmagic-davinci-resolve-pc-keyboards-1073c1.html>

EditorsKeys Backlite Keyboard

<https://www.editorskeys.com/products/davinci-resolve-keyboard-backlit-mac-or-pc>

Optional USB 2.0 Extender

Model: ICRON USB 2.0 Ranger 2304

<http://www.icron.com/products/icron-brand/usb-extenders/cat5/usb-2-0-ranger-2304/>

Third Party Audio Consoles

Alternative options are shown in no particular order

Mackie MCU Pro

<http://mackie.com/products/mcu-pro-and-xt-pro>

Behringer X-Touch

<http://www.musictri.be/Categories/Behringer/Computer-Audio/Desktop-Controllers/X-TOUCH/> p/P0B1X

Third Party Color Grading Panels

DaVinci Resolve for Mac and Windows supports a number of third party control panels including some panels that are no longer for sale from their original manufacturers. Please refer to the instructions from the panel vendor and review with the directions below to configure the panel to work with DaVinci Resolve.

Configuring Davinci Resolve for third party color grading panels

After first starting the Resolve application, open the Hardware Setup tab by selecting ‘Preferences’ from the DaVinci Resolve application. In the Hardware settings window, select the Control Panel tab and select the control panel you have connected to your computer. Save the updated preferences and restart the DaVinci Resolve application.

The OxygenTec ProPanel and the Tangent Devices WAVE and Ripple control panels are USB devices and require no special configuration for use with DaVinci Resolve. Just plug it in to your computer and select in Resolve.

The Tangent Devices Element Bundle is a set of four USB panels that connect to your computer 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 the Tangent Hub is installed, plug the panels into your computer and select in Resolve. The Tangent Hub installer 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 computer. 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 computer is connected to a network with a DHCP server, just connect an Ethernet cable from the panel to the same network switch. Install the EUcontrol 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 solid, the panel is communicating with the EUcontrol 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 computer. It should take just 30 seconds to set.

NOTE The Avid Artist Color does not work with the DaVinci Resolve App Store version due to Apple sandbox restrictions.

Alternative options are shown in no particular order

Tangent Devices Element Bundle

<http://www.tangentwave.co.uk/product/element/>

Tangent Devices Wave

<http://www.tangentwave.co.uk/product/wave/>

Tangent Devices Ripple

<http://www.tangentwave.co.uk/product/ripple/>

Windows and Linux Systems: PCIe Slot Configurations

ASUS PCIe configuration

ASUS X299 Deluxe with single GPU

Slot	Board	Function
1	UI and Image Processing GPU	UI Monitor
1a	Do not use this slot	
2	Do not use this slot	
3	DeckLink Capture Card	Video and Audio Monitoring
4	Do not use this slot	
5	Optional RAID/Storage controller	For External Media Storage

Note: Motherboard slot 1 is closest to the CPU

GIGABYTE PCIe configuration

X399-AORUS Gaming 7 with single GPU

Slot	Board	Function
1	UI and Image Processing GPU	UI Monitor
2	Do not use this slot	
3	DeckLink Capture Card	Video and Audio Monitoring
4	Do not use this slot	
5	Optional RAID/Storage controller	For External Media Storage

Note: Motherboard slot 1 is closest to the CPU.

HP PCIe configuration

HP Z8 Dual CPU with single or dual GPU

Slot	Board	Function
1	Optional RAID/Storage controller	For External Media Storage
2	UI and Image Processing GPU	UI Monitor
3	Blocked	—
4	Optional 2nd GPU	Do not connect
5	Blocked	—
6	DeckLink Capture card	Video and Audio Monitoring
7	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring

Note: Motherboard slot 1 is closest to the CPU.

HP Z8 Dual CPU with PCIe expander for multiple GPUs

Slot	Board	Function
1	Optional RAID/Storage controller	For External Media Storage
2	UI and Image Processing GPU	UI Monitor
3	Blocked	—
4	PCIe Expander HBA	To PCIe Expander
5	Do not use this slot	
6	DeckLink Capture card	Video and Audio Monitoring
7	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring

Note: Motherboard slot 1 is closest to the CPU. PCIe Expander options shown below

HP Z6 Dual CPU with single GPU

Slot	Board	Function
1	Do not use this slot	
2	UI and Image Processing GPU	UI Monitor
3	Blocked	—
4	Optional RAID/Storage controller	For External Media Storage
5	DeckLink Capture card	Video and Audio Monitoring
6	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring

Note: Motherboard slot 1 is closest to the CPU.

HP Z4 Single CPU with single GPU

Slot	Board	Function
1	UI and Image Processing GPU	UI Monitor
2	Blocked	—
3	DeckLink Capture card	Video and Audio Monitoring
4	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring
5	Optional RAID/Storage controller	For External Media Storage

Note: Motherboard slot 1 is closest to the CPU.

DELL PCIe configuration

DELL 7920 Dual CPU with single or dual GPU

Slot	Board	Function
1	Optional RAID/Storage controller	For External Media Storage
2	UI and Image Processing GPU	UI Monitor
3	Blocked	—
4	DeckLink Capture card	Video and Audio Monitoring
5	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring
6	Optional 2nd GPU	Do not connect
7	Blocked	—

Note: Motherboard slot 1 is closest to the CPU.

DELL 5820 Single CPU with single GPU

Slot	Board	Function
1	Optional RAID/Storage controller	For External Media Storage
2	UI and Image Processing GPU	UI Monitor
3	Blocked	—
4	DeckLink Capture card	Video and Audio Monitoring
5	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring
6	Do not use this slot	

Note: Motherboard slot 1 is closest to the CPU. PCIe Expander options shown below

Supermicro PCIe configuration

Supermicro SuperServer 7048GR-TR with single or dual or triple GPUs

Slot	Board	Function
1	–	–
2	UI and Image Processing GPU	UI Monitor
3	–	–
4	Optional 2nd GPU	Do not connect
5	–	–
6	Optional 3rd GPU	Do not connect
7	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring
8	DeckLink Capture card	Video and Audio Monitoring
9	–	–
10	Optional RAID/Storage controller	For External Media Storage
11	–	–

Note: Motherboard slot 11 is closest to the CPU. An optional Red Rocket X card should be installed in slot 4

Supermicro SuperServer 7048GR-TR with expander for multiple GPUs

Slot	Board	Function
1	–	–
2	UI and Image Processing GPU	UI Monitor
3	–	–
4	PCIe Expander HBA	To PCIe Expander
5	–	–
6	PCIe Expander HBA	To PCIe Expander
7	DeckLink HDMI/Mezzanine card	HDMI/Quad SDI Monitoring
8	DeckLink Capture card	Video and Audio Monitoring
9	–	–
10	Optional RAID/Storage controller	For External Media Storage
11	–	–

Note: Motherboard slot 11 is closest to CPU. PCIe Expander options shown below

PCIe expanders: Slot configurations

Multiple alternatives shown in no particular order

CUBIX GPU-Xpander Desktop Elite

Computer Connection	Slot	Board
PCIe HBA	1	Image Processing GPU
	2	Image Processing GPU
	3	Image Processing GPU
	4	Image Processing GPU

CUBIX GPU-Xpander Rackmount Elite

Computer Connection	Slot	Board
PCIe HBA	1	Spare x8 Slot
	2	Spare x8 Slot
	3	Image Processing GPU
	4	Image Processing GPU
	5	Image Processing GPU
	6	Image Processing GPU

CUBIX GPU-Xpander Rackmount 8

Computer Connection	Slot	Board
PCIe HBA	1	Image Processing GPU
	2	Image Processing GPU
	3	Image Processing GPU
	4	Image Processing GPU
PCIe HBA	5	Image Processing GPU
	6	Image Processing GPU
	7	Image Processing GPU
	8	Image Processing GPU

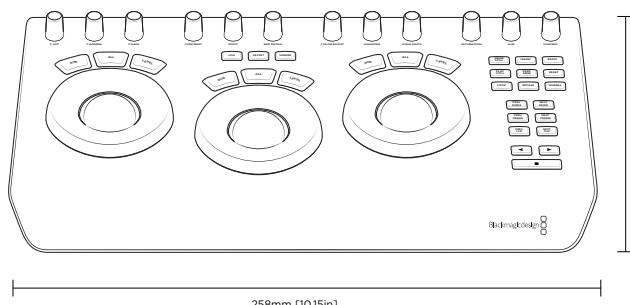
Cyclone PCIe2-2707

Computer Connection	Slot	Board
PCIe HBA	1	Image Processing GPU
	2	Image Processing GPU
	3	Image Processing GPU
	4	Spare x8 Slot
	5	Spare x8 Slot

Panel Information

Davinci Resolve Micro Panel dimensions and weights

	Height	Width	Length	Weight
Micro Panel	75mm (2.95in)	427.5mm (16.83in)	258mm (10.15in)	3.5kg (7.71lb)

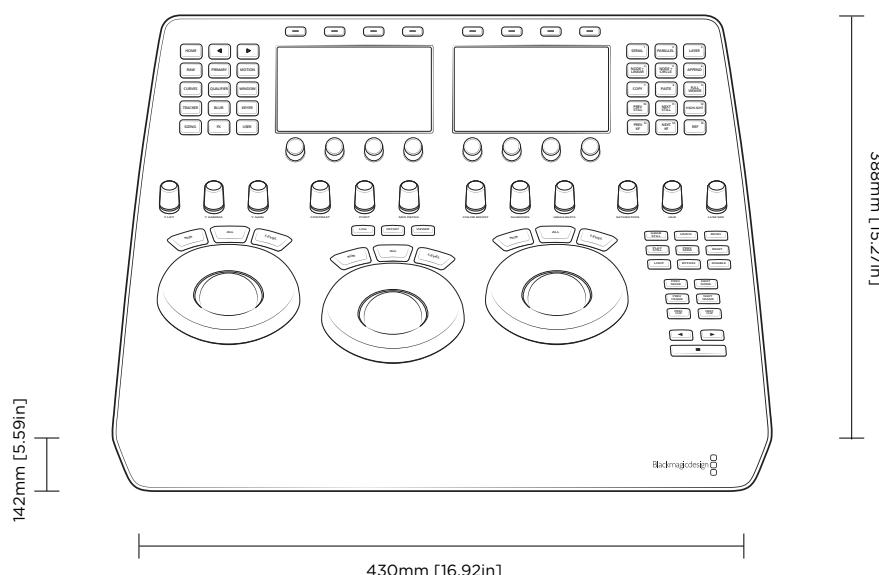


Davinci Resolve Mini Panel dimensions and weights

	Height	Width	Length	Weight
Overall Mini Panel	142mm (5.59in)	430mm (16.92in)	388mm (15.27in)	6.4kg (14.1lb)

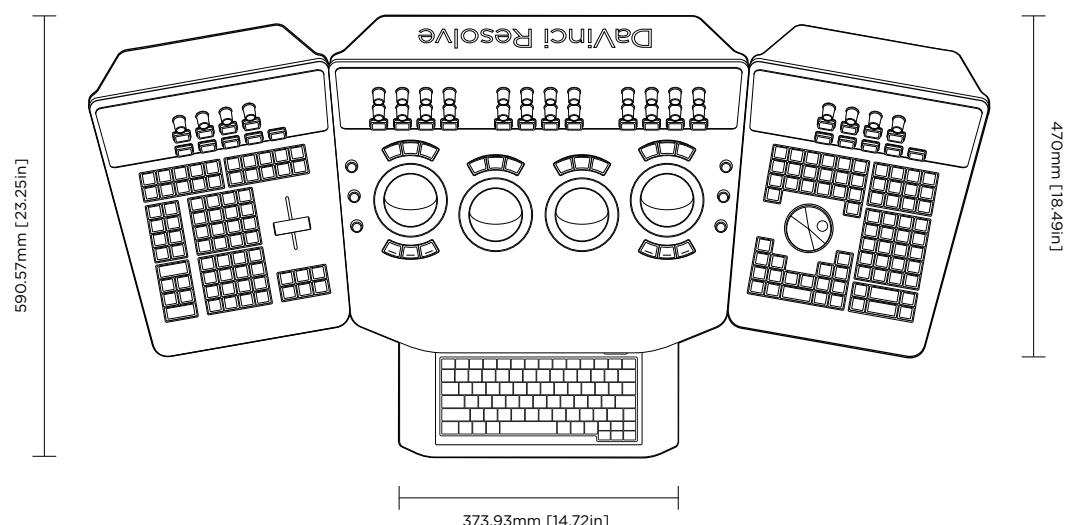
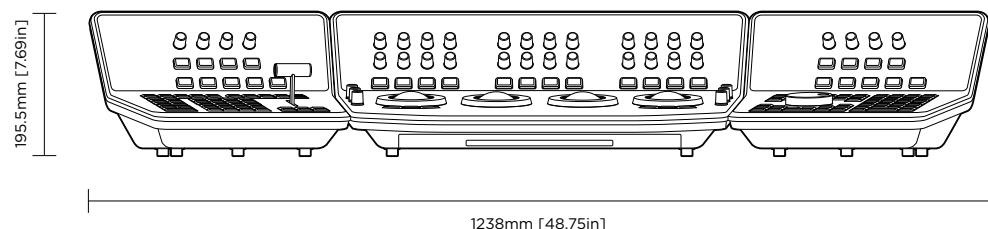
Davinci Resolve Mini Panel mounting dimensions

	Centre to centre	Driver	Thread
Mounting Dimensions	248mm (9.76in)	3mm Hex Head (0.11in)	14"-20



Davinci Resolve Advanced Panel 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)



Regulatory Notices and Safety Information

Regulatory Notices

Disposal of waste of electrical and electronic equipment within the European Union.



The symbol on the product indicates that this equipment must not be disposed of with other waste materials. In order to dispose of your waste equipment, it must be handed over to a designated collection point for recycling. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.

Safety Information

This equipment must be connected to a mains socket outlet with a protective earth connection.

To reduce the risk of electric shock, do not expose this equipment to dripping or splashing.

This equipment is suitable for use in tropical locations with an ambient temperature of up to 40°C.

Ensure that adequate ventilation is provided around the product and is not restricted.

No operator serviceable parts inside. Refer servicing to your local Blackmagic Design service centre.



Use only at altitudes not more than 2000m above sea level.

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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