CHAPTER 1 – BLU-RAY BASICS
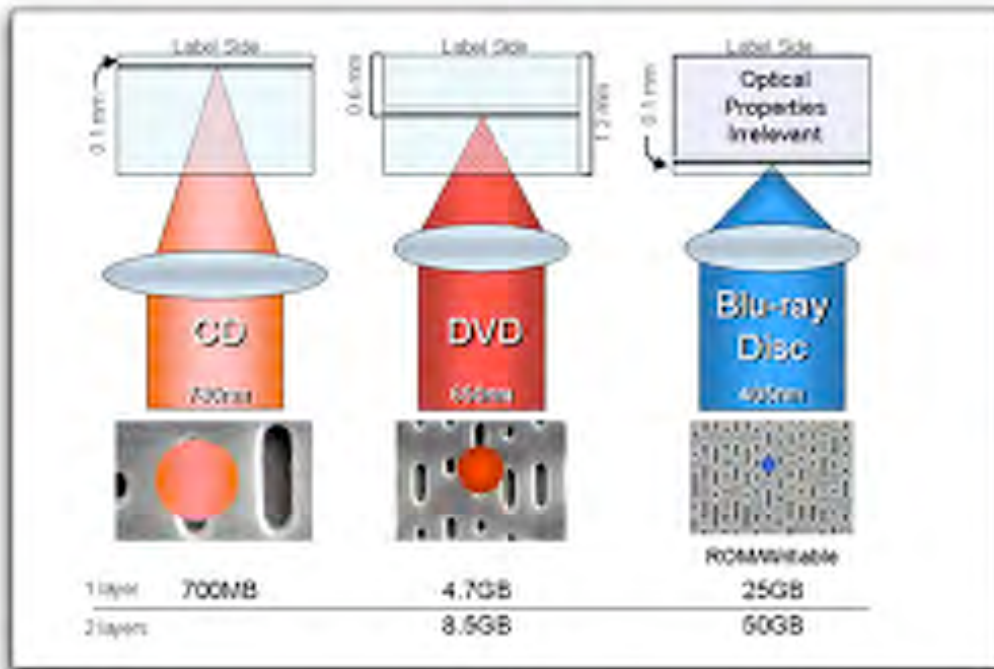
DVD has migrated forwarded into its long-awaited high-definition format, and Blu-ray Disc (BD) has emerged as the survivor after a protracted format war between BD and HD DVD.   But what *is* a Blu-ray Disc, really?

What Is Blu-Ray Disc?

Blu-ray Disc is a High-Definition optical disc format with many physical characteristics similar to DVD, but with unique differences that set the two formats apart.

Similarities And Differences

A BD looks like a DVD, and is the same 12 cm physical size as a DVD, but has dramatically increased storage capacity. A single-layer BD-25 disc contains roughly 25 GB of storage space, and a dual-layer BD-50 contains roughly 50 GB of space. There are also smaller disc sizes (8 cm) that are not generally used for mass-distributed projects (i.e. movies) but can be used in camcorders, or other small recording devices. Capacity increases have been made possible by new laser tech:

Like DVD, BD requires a player that understands its format in order to play it back properly and a burner, software, and disc media that can be properly recorded to in order to create a usable BD. The Blu-ray Disc format is named after the blue-violet laser used in the pickup head.

Currently, there are many Consumer Electronics (CE) Blu-ray players available, with prices falling as economies of scale help reduce manufacturing costs. On the computer side, there are not currently any software solutions for Blu-ray video disc playback on a Macintosh, but several do exist for the PC platform.

The Two Faces Of Blu-Ray

It seems like ages ago but, in fact, it was only in early 2008 when Blu-ray Disc emerged as the winner of the format war and HD DVD disappeared. In the ensuing time period, it's been increasingly obvious that publishing video on Blu-ray Disc has been divided into two completely different and distinct options:

> 1 – **Duplication**- simple Blu-ray Disc titles created and distributed in nominal quantities using recordable optical disc formats (both BD-R/RE and DVD-R).

> 2 - **Replication**, which involves licensing fees and hardware/software acquisition costs currently beyond the means of many independent producers.

It is in the first option, using recordable media, where the "*Fast Path to Blu-ray Disc*" exists for many who are new to the format. This book will show you how a modest investment in software and hardware will enable you to create Blu-ray discs for data backup/archive, as well as author Blu-ray Disc projects (and burn them even if you don't have a Blu-ray Disc burner! As a bonus, it will also show you to use BD-R media for archiving and backup once you have a suitable Blu-ray Disc burner.

What Can You Do To Get Started?

The BD spec allows for the creation of BD Video titles on recordable media that do NOT require an AACS content protection license. Today, many, if not most, Blu-ray Disc players can play these BD-R/RE project discs, meaning Blu-ray projects (short ones) can be created and distributed on DVD-R media. Given the cost of DVD recordable media, quantity duplication of these short BD on DVD projects might well be the way to satisfy a market that wants high-def optical discs created on a shoestring budget. It's a great way to begin, if you haven't yet invested in expensive Blu-ray Disc authoring gear, or even a Blu-ray Disc burner!

What Equipment Do You Need?

In order to monitor the Blu-ray Disc projects you will create, you will need a Blu-ray Disc player and suitable monitor – there is currently NO way to playback a Blu-ray Video Disc on a Macintosh. And you *will* want to acquire a Blu-ray player that has Profile 2.0 capability ("BD Live"). This will give you the ability to play commercial Blu-ray Disc titles for your reference (and enjoyment). Resist any temptingly cheap price point for a Profile 1.1 player, except for those that can be upgraded to Profile 2.0 – like the SONY BDP-S350.

To create a Blu-ray Disc you will also need:

- ✓ Some high-definition footage – either 720 or 1080
- ✓ Authoring software to create a Blu-ray Disc project
- ✓ Some recordable optical disc media (DVD-R to start, BD-R or -RE later on)
- ✓ A DVD burner to begin with, Blu-ray burner later on

You can always upgrade your system to include a Blu-ray Disc burner, if you want to graduate to full-length Blu-ray Disc projects using BD-R or BD-RE media.

A Quick Overview…

If you've used DVD recordable (DVD-R) or DVD rewriteable discs (DVD-RW, +RW) to store data, you're already familiar with 95 % of the procedures you need to know.

Simply add a suitable Blu-ray Burner to your system (we'll tell you more about this in a later paragraph), substitute Blu-ray Recordable (BD-R) or Rewriteable (BD-RE) media for the familiar DVD-R or –RW discs and you're pretty much there.

Why Go With Blu-Ray?

Well, for one thing, *gigantic storage space*. Blu-ray Disc media come in two sizes – BD-25 (25 GB) and BD-50 (50 GB). Compared to the 4.7 or 8.5 gigabyte storage space of DVD, Blu-Ray discs allows you to store much larger files on fewer disks. In many cases, you can easily store files of a size that will not fit on a single DVD, and you can store them without breaking them into pieces.

Yes, Blu-ray Discs will be a little more costly than DVDs, but your files will be in one place rather than spread across several discs.

Finally, what about the "I can't mount Blu-ray Discs on my Mac" question? Don't sweat it! With the method I will show you, you'll be burning and mounting Blu-ray Discs like a champ! (Toast provides the UDF 2.5 mounting compatibility)

Ready to go? Great! Let's begin at the beginning:

It All Starts With Software

You will need software that enables your Mac to read (and write) to Blu-ray media. In its current incarnation (10.5.X), the Mac OS does not provide native capability for UDF 2.5/2.6, the format required for Blu-ray Discs. The simplest, cheapest way to do this is to acquire Roxio Toast 10 Titanium or Toast 10 Pro. Toast can install a special driver to enable the reading and writing of the UDF 2.5 format. We'll cover Toast more completely in Chapter Four, where we discuss Blu-ray Data discs.

You'll Need A Blu-Ray Burner To Burn BD-R/RE Blu-Ray Media.

There are a number of confusing drives out there, many seem to have Blu-ray Disc capability, but look deeper – only SOME are actually Blu-ray Disc burners!

If you don't mind installing a bare drive, an economical choice is the **LG GGW H20L Super Multi Blue**, currently selling online for $179 (Newegg.com). It offers 6X Blu-ray Disc burning, which speeds up data transfers a bit. If you don't want to install it *IN* your computer, you can put it into an external firewire, USB or eSATA case for about $100.

LG GGW H20L	*Panasonic SW-5583*

Another possible choice is the **Panasonic SW-5583**. At around $350, it's a little pricier choice than the LG, but it only offers 4X Blu-ray burning. I've used this one, and it is a solid performer. Pioneer also makes a great burner, the BDR-203BKS, available for around $199.99 (newegg.com).

External Blu-Ray Disc Burners

If you prefer to "plug-and-play", external Blu-ray Disc burners are also available. **LaCie** offers the "d2" in a stylish and solid metal case. The drive does Blu-ray Disc, DVD, and CD. http://www.lacie.com/products/product.htm?pid=11054

Another recent entry on the market is a very tiny model from Digistor, which is perfect to use with a Mac Book Pro. Be sure to look for the 78102 Burner (it's the more expensive one – around $369)

The Digistor 78102 BD50 Blu-ray Burner (USB connect)

Blu-Ray Disc Media

As we explained at the beginning of this tutorial, Blu-ray Disc media is available in both recordable and rewriteable formats. Just as with DVD, the -R format is a write-once format that cannot be erased. The Blu-ray Disc re-writable format is called BD-RE, and it works just like DVD–RW or DVD-RAM. You can record on the disc over and over. Blu-ray Recordable discs are available in both 25 and 50 GB sizes, as are BD-RE (you may find it easier to find 25 GB BD-RE).

Blu-ray Disc BD-R recordable media (L,C)

Blu-ray Disc BD-RE re-writeable media (R)

You will find there are literally a thousand online stores selling Blu-ray Disc media, so I suggest you make a quick Google search and find one with prices and delivery terms you like. If you'd like to see a sample of what media is available, check out *www.meritline.com*, or *http://www.discmakers.com*.

Once you have a disc or two on hand (and I'd recommend using BD-RE or inexpensive DVD-R discs to begin with) you're ready to put all these pieces together.