

Each QuickTime component provides an interface to a general class of features associated with the manipulation of time-based data. QuickTime provides components so that developers may use a component—for example, one that provides image compression services—without extensive knowledge of all the possible services that that component might provide. Developers are therefore isolated from the details of implementing and managing a given technology.

Since each QuickTime component is registered by the Component Manager, the component's code can be available systemwide or in a resource that is local to a particular application.

QuickTime components supply these services:

- movie playback (including the provision of basic time information and the interpretation of the data to be played)
- image capture
- compression and decompression of still images
- exchange of movie data
- creation and display of movie previews

This book addresses two audiences—developers who communicate directly with existing components and developers who want to create their own components.

Providing Movie Playback

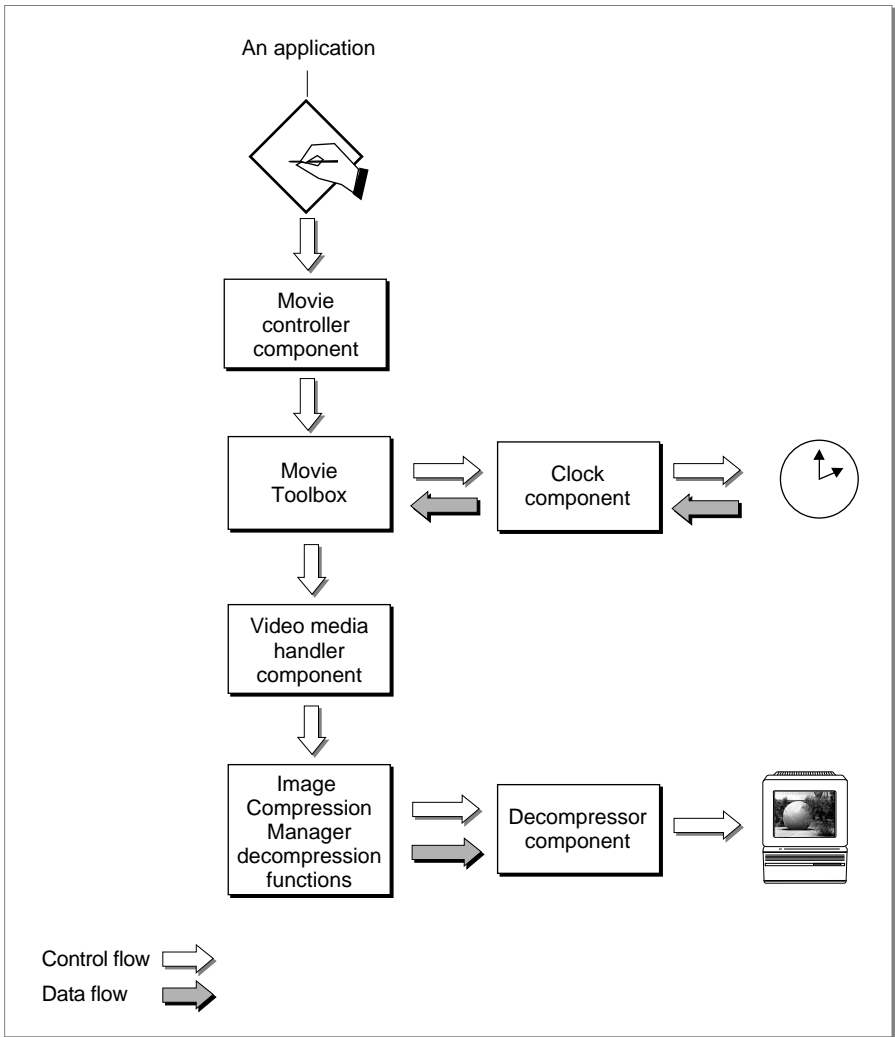
Figure 1-1 shows the QuickTime components that allow your application to provide movie playback.

- Your application calls the movie controller component in order to play movies. **Movie controller components** implement movie controllers, which present a user interface for playing and editing movies. For details on the features of movie controller components and the interfaces they must support, see the chapter “Movie Controller Components” in this book.
- The movie controller component communicates with the Movie Toolbox's functions in order to obtain and receive time-based information from the clock component. **Clock components** supply basic time information to their clients. For details, see the chapter “Clock Components” in this book.

Overview

- The Movie Toolbox passes control to media handler components, which actually interpret the data that will be played. **Media handlers** allow the Movie Toolbox to access the data in a media. They isolate the Movie Toolbox from the details of how or where a particular media is stored. This makes QuickTime extensible to new data formats and storage devices. If you want to develop a media handler component, read the chapter “Derived Media Handler Components” in this book.
- The media handler component passes control to the Image Compression Manager’s decompression functions, which send the movie data to a decompressor component. A decompressor component is one kind of **image compressor component**, a code resource that may provide either compression or decompression services. For details on decompressor components, see the chapter “Image Compressor Components” in this book.
- The decompressor component actually decompresses the movie data so that it can be played on the screen of the Macintosh computer.

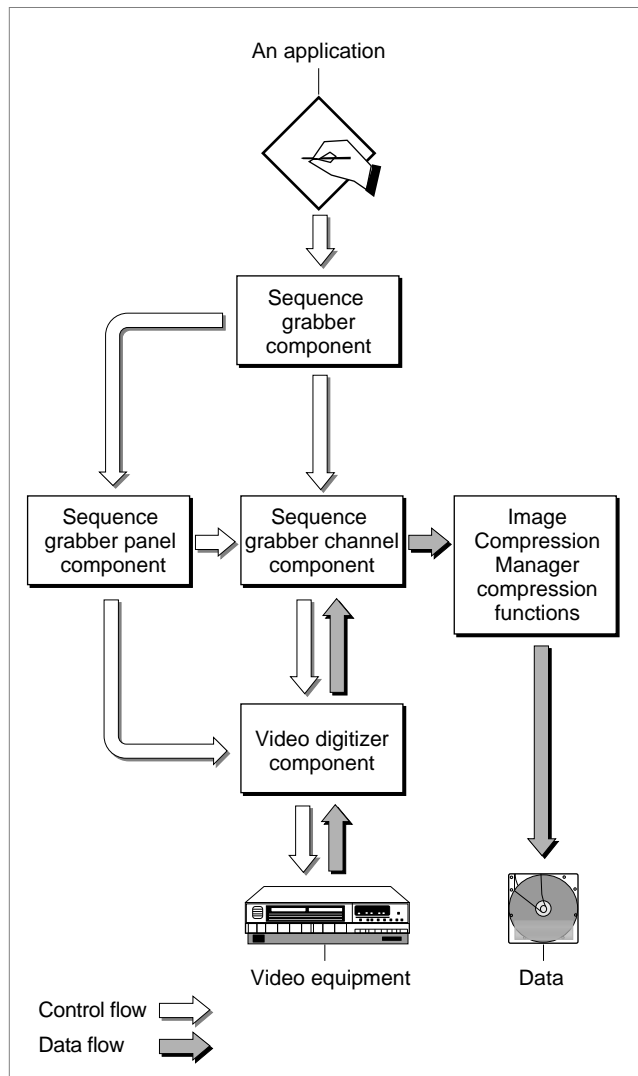
Figure 1-1 QuickTime components for movie playback



Capturing Sequences of Images

Figure 1-2 shows the QuickTime components that allow your application to capture image data for storage or for further processing by video equipment.

- Your application calls the sequence grabber component to digitize data. **Sequence grabber components** allow applications to obtain digitized data from sources that are external to a Macintosh computer. For more information on how to use these components to acquire images, read the chapter “Sequence Grabber Components” in this book.
- The sequence grabber component uses both sequence grabber panel components and sequence grabber channel components.
 - The **sequence grabber panel component** obtains configuration information before it calls the sequence grabber channel component to manipulate the captured data. For details on creating sequence grabber panel components, see the chapter “Sequence Grabber Panel Components” in this book.
 - The **sequence grabber channel component** manipulates the captured data. For details on sequence grabber channel components, see the chapter “Sequence Grabber Channel Components” in this book.
 - Image compressor components are used by the sequence grabber channel component, if necessary.
- The sequence grabber channel component calls either a video digitizer component or the Image Compression Manager.
 - The **video digitizer component** obtains the digitized data from an analog video source. To understand how to use or create a video digitizer component, see the chapter “Video Digitizer Components” in this book.
 - The Image Compression Manager’s compression functions store the image in a storage media—for example, in a data pack.

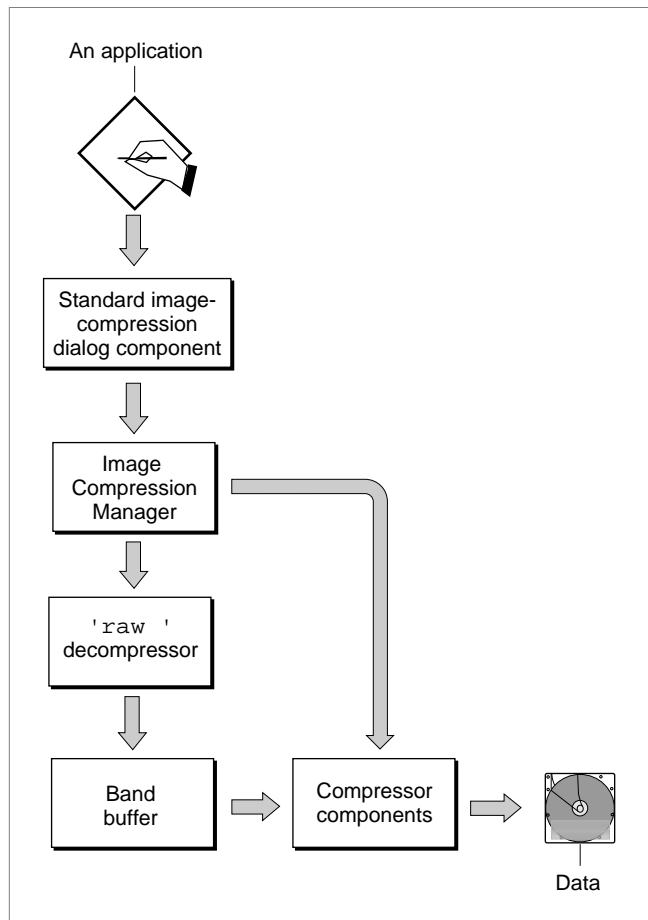
Figure 1-2 QuickTime components for image capture

Compressing and Decompressing Still Images

QuickTime components allow your application to compress and decompress still images.

Figure 1-3 provides an overview of QuickTime components for the compression and decompression of still images.

- Your application calls the standard image-compression dialog component to select parameters for governing the compression of an image and for managing the compression operation.
- The standard image-compression dialog component calls the Image Compression Manager.
- The Image Compression Manager may commence the compression operation in one of two ways:
 - It may send the image directly to an image compressor component and then to a storage media, such as a data pack.
 - It may send the image to the Apple-supplied decompressor, the 'raw' decompressor, and then through a band buffer (for conversion to the image depth required by the compressor component) before sending it to the image compressor component.
- The compressor component compresses the image and sends it to the storage media.

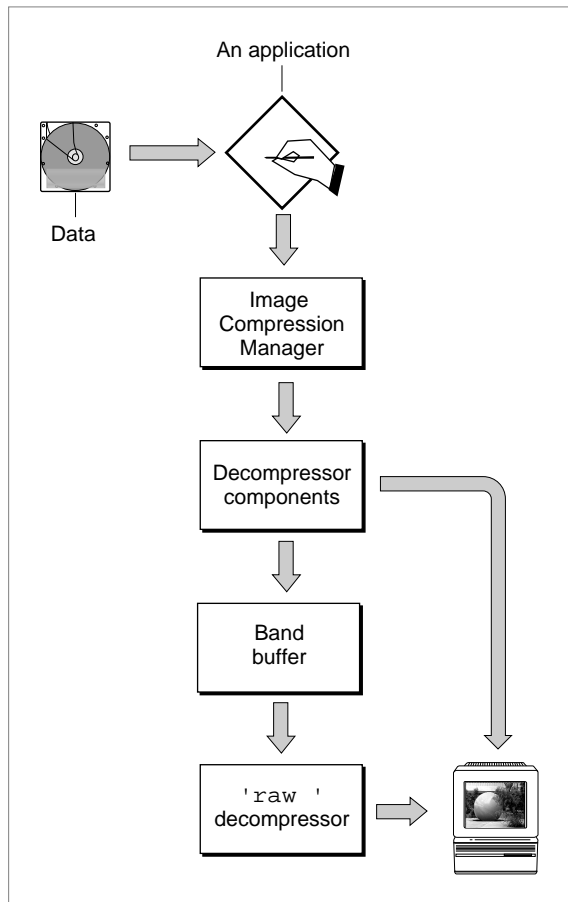
Figure 1-3 QuickTime components for compressing still images

Overview

Figure 1-4 shows the relationships of the components that allow your application to take an image from a storage media and decompress it so that it may be displayed on the Macintosh screen.

- Your application calls the QuickDraw `DrawPicture` routine, which the Image Compression Manager intercepts. The Image Compressor decompresses the image. Alternatively, your application may communicate directly with the Image Compression Manager, which sends the compressed image to the decompressor component.
- The decompressor component sends the image directly to the Macintosh screen or to a band buffer that meets the requirements of the decompressor (in features such as pixel depth and dimension). The contents of the band buffer are then copied to the screen by the 'raw' decompressor, which performs any necessary conversion.

Figure 1-4 QuickTime components for decompressing still images



Converting Data for Use in QuickTime Movies

Movie data exchange components allow your application to convert data in various formats so that it can be imported to or exported from a QuickTime movie. For information on using or creating these components, see the chapter “Movie Data Exchange Components” in this book.

Creating Previews of QuickTime Movies

Preview components let your application create and display previews of QuickTime movies. The Image Compression Manager is the primary client of movie preview components. For details on developing preview components, see the chapter “Preview Components” in this book.

