About the Gestalt Manager and System 7.0

The Macintosh family of computers includes many models of computers, and it is likely to grow in the future. Macintosh software runs on a number of different processors, some of which are accompanied by floating-point coprocessors or memory management units. In addition, the installed versions of the system software, drivers, and **QuickDraw** routines may vary from machine to machine. To ensure that your applications are maximally compatible with existing and future versions of the Macintosh, you should keep references to specific software and hardware features to a minimum.

In general, applications should communicate with the system software and hardware through the available managers and device drivers. If, however, it is necessary or useful for your applications to take advantage of software or hardware components that may not be present on all Macintosh computers, then you need some method of determining whether those components are available. The **Gestalt Manager** serves this need by allowing you to get information about the operating environment in a simple and efficient manner.

System 7.0 introduces several new managers and makes significant changes to many existing managers. To take advantage of new system 7.0 features, and to run on as many machines as possible, it is more important than ever before that your application deter-mine the software and hardware components available in a particular operating environment. To help you develop software for the entire line of Macintosh computers, system 7.0 includes the **Gestalt Manager**. This manager includes the **Gestalt** function, which is a replacement for both the **Environs** procedure and the **SysEnvirons** function. The **Gestalt** function gives your application the ability to determine information about a large number of machine-dependent features. You can use the **Gestalt** function to find the following sorts of information about the hardware configuration and operating environment of the machine your application is executing on:

- the type of machine
- the version of the System file currently running
- the type of CPU
- the type of keyboard attached to the machine
- the type of floating-point processing unit (FPU), if any
- the type of MMU, if any
- the size of available RAM
- the amount of available virtual memory
- the versions of various drivers and managers
- the features of various drivers and managers
- the version of **QuickDraw** currently present
- whether the A/UX operating system is running or not

How your application uses the resulting information depends on what your application needs to accomplish. For example, in a case where critical hardware features are not available, your application might display an alert box to notify the user that the required hardware is missing and then terminate. Or if your application has determined that **Color QuickDraw** is available, it could execute alternate code to take advantage of the expanded capabilities of that software.

Associated with the **Gestalt** function are two other functions-one that allows an application to register new features with **Gestalt** and another that allows an application to change the function used by **Gestalt** to retrieve a particular piece of information. These two functions make it easy for your application to announce its presence to other applications, in case they wish to alter their actions in view of the presence of your application. For example, a macro utility that intercepts sequences of keyboard presses and translates them into other sequences can register itself with **Gestalt** at system initialization time; afterward, other applications can call **Gestalt** to determine if that utility is present. In this way, **Gestalt** can act as a central clearinghouse for information on the available hardware and software features of the operating environment, including any third-party applications that register themselves with **Gestalt**. **Gestalt** therefore provides a further means of cooperation and awareness among applications executing in the system 7.0 environment.

Although the **Gestalt** function can provide your application with most of the basic information it needs about particular software or hardware features, you may still need to call other routines to determine more specific features. For example, if you need to determine the resolution of the main Macintosh screen, you can use the Toolbox Utility procedure **ScreenRes**.
(See the **Toolbox Utilities** for a description of this procedure.)

The **Gestalt** function replaces both the **Environs** procedure and the current implementation of the **SysEnvirons** function as the standard means of determining specific aspects of the operating environment. The **Gestalt** function is simpler to use and provides more information than either of those routines. Applications that use **SysEnvirons** still execute correctly in system 7.0 (the **SysEnvirons** function calls the **Gestalt** function).

Use of the **Environs** procedure is no longer recommended because it encourages you to think in terms of ROM versions, not in term of features that may be available. The **Gestalt Manager** can also provide information such as ROM version and size, but you should not write applications that infer the presence of particular software or hardware features on the basis of that information. When you need to know whether a particular feature is present, you should request information about it directly, using the appropriate **Gestalt** selector.

Although you can still call the **SysEnvirons** function, the **Gestalt Manager** is simpler and more efficient, and is the recommended way to get information about the operating environment. **SysEnvirons** returns a system environment record containing nine different pieces of information. **Gestalt** returns only the information requested by use of a specific selector code parameter. In most cases, your application really needs only a part of what is contained in the system environment record. With **Gestalt**, your application can request only the information it needs.