About the Start Manager   Working with the Start Manager

The **Start Manager** coordinates system initialization and startup procedures for newer Macintosh-family members. Since it is directed entirely by the operating system, an understanding of the **Start Manager** is essential only if you want to use an OS other than that which normally comes with the Mac.

Initialization consists of hardware and system software diagnostics, memory tests, processor identification, initalization of global variables, mode selection, system heap creation, identifying any expansion cards that may be present and turning on basic ROM and RAM functions that are essential to all subsequent operations.

System startup comes next, and includes additional identifying and power-up procedures for internal and external drives, generalized software packages like the **Resource Manager** and the **Font Manager** are initialized, a startup screen is displayed, ROM patches, 'INIT' resources, 'ADBS' resources and debuggers are loaded, device drivers are installed, system heap size and default folder identification are established and either the startup application or the Finder is launched.

Boot Data

System startup information must reside in boot blocks (logical blocks 0 and 1) in each initialized volume. It includes such information as the version number of the boot data, debugger identification, name of system resource code file, system shell name, startup screen name, program to run on startup, the scrap file's name on disk, number of file control blocks, number of events in the event queue and initial size of the system heap.

Heap Request

One of the things that varies between systems is the amount of space that 'INIT' resources need to occupy in the system heap zone. These varying space requirements are accommodated by the 'INIT' 31 resource since it looks for a resource of type 'sysz' with an ID = 0 whenever it opens an 'INIT' or a 'RDEV' file. The first long word of the 'sysz' is the amount of system heap space needed by the 'INIT' resources in your 'RDEV' or 'INIT' files. From there on, 'INIT' 31 calls the SetApplBase procedure to apportion as much space as needed, with a guaranteed minimum of 16K bytes of contiguous heap space.

Timing

The global variables used for timing, and initialized at system startup include:

TimeDBRA--executions per millisecond for the DBRA instruction
TimeSCCDB--SCC accesses per millisecond
TimeSCSIDB--SCSI access per millisecond

Both the SCSI access and the SCC access consist of two instructions:

```
@1    BTST  #0, (A0)
      DBRA  D0, @1
```
In both cases, register A0 points at the chips' base address.