

## Apple IIGS: ProDOS/16 Version 2

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To support the new fast mode of the Apple IIGS, ProDOS/16 version 2 handles expanded Apple IIGS capabilities, features, and operating modes:

- ProDOS/16 is designed to accept system calls from applications running in either 8-bit or 16-bit mode (the 65816 micro-processor can run in either).
- ProDOS/16 can accept system calls from anywhere in the full 16MB range of memory in the Apple IIGS, and those calls can manipulate data anywhere in memory.
- ProDOS/16 relies on a sophisticated memory management system.
- System calls must be made to ProDOS/16 in order to access system global variables such as date and time, system level, and I/O buffer addresses. ProDOS/16 does not support a global variables page.

There are major differences from ProDOS 1.1.1. ProDOS/16 not strictly upward-compatible from previous ProDOS versions. Programs written to function under ProDOS on an Apple II will not run on the IIGS under ProDOS/16 without some modifications.

ProDOS/16 functions, however, are upward-compatible:

- There is a functionally equivalent ProDOS/16 call for almost every ProDOS system call, usually with the same name.
- Calls are made in nearly the same way as with earlier ProDOS versions.
- For passing values to functions, the parameter blocks have a structure similar to (but not exactly like) earlier ProDOS.
- ProDOS/16, using the same file system as earlier ProDOS, can read from and write to any disk volume produced by ProDOS, using the same file and volume

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structure, both disk resident and logical.

On the Apple IIGS, ProDOS/8 and ProDOS/16 are designed to the run in tandem, as a package. Whereas ProDOS/16 takes advantage of all the Apple IIGS's hardware and capabilities, ProDOS/8 is provided to maintain compatibility with ProDOS v1.1.1. In normal situations, you need not be concerned with which operating system is functioning; if you run an Apple IIGS application, ProDOS/16 is loaded automatically.

While most ProDOS/8 calls have functionally exact equivalents in ProDOS/16, some ProDOS/8 calls do not appear in ProDOS/16 because they are unnecessary:

- RENAME: The ProDOS/16 call CHANGE\_PATH performs the same function.
- GET\_TIME: Under ProDOS/16, the time and date are obtained through a call to the Miscellaneous Tools.
- SET\_BUF: Under ProDOS/16, the memory manager, rather than the application, allocates file I/O buffers.
- GET\_BUF: This call is unnecessary under ProDOS/16 because the OPEN call returns a handle to the file's I/O buffer.
- ONLINE: This call is replaced in ProDOS/16 by the VOLUME call.

Under ProDOS/16, you can:

- make ProDOS/16 system calls from anywhere in memory, using ProDOS/16 parameter blocks located anywhere in memory.
- make I/O data transfers to or from anywhere in memory.
- allow limited use of named devices. With ProDOS/8, you must refer to a device by its volume name or its slot and drive number.
- support up to eight system prefixes (ProDOS/8 supports only one).
- have an unlimited number of open files (ProDOS/8 allows only 8).
- have any number of online devices (ProDOS/8 allows a maximum of 14).
- support of at least 3 separate device protocols (ProDOS/8 supports only one block device protocol).
- extensivly support named devices.
- use a volume mounting function, not in ProDOS/8, which prompts the user to mount a needed volume.

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