

Apple II Technical Notes



Developer Technical Support

Apple IIGS #100: VersionVille

Written by: Matt Deatherage
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This Technical Note is all there is to know about versions, version formats and version numbers on the Apple IIGS.

Version Number Formats

There are three kinds of version numbers on the Apple IIGS. Two of the three are documented elsewhere but are repeated here for convenience.

System Tool Set Versions

The Apple IIGS system tools use a one-word version number. The high-order **four** bits of this word have special meaning. Bits 8-11 are the major version number and bits 0-7 are the minor version number. This is illustrated in Figure 1.

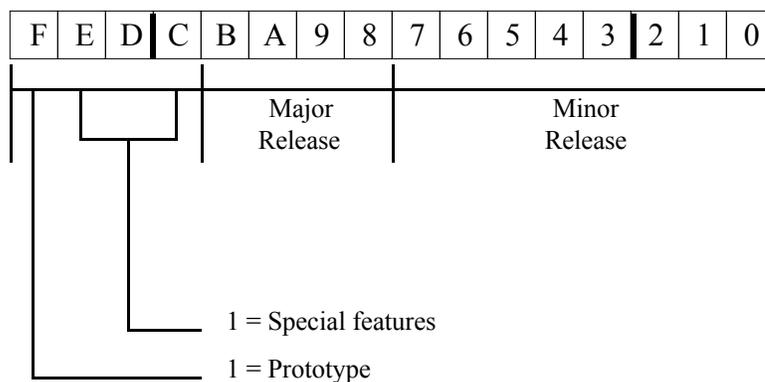


Figure 1—Toolbox Version Numbers

Note that this definition is different and supersedes the definition in the *Apple II GS Toolbox Reference* for system tool sets. Previous documentation reserves only bit 15 as the prototype bit; this has been expanded. Bits 14-12 of user tool set version words have no special meaning; they are still part of the major release.

Note: When comparing the major and minor release version numbers to check the installed version of a system tool, mask off bits 15-12 first (for example, by using an AND # $\$0FFF$ instruction).

SmartPort Or GS/OS Driver Versions

GS/OS drivers and SmartPort firmware drivers use an alternate one-word version number, described in Figure 2.

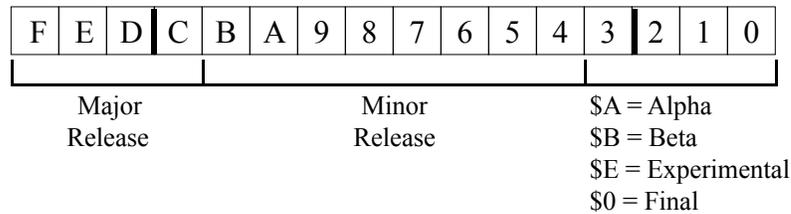


Figure 2—GS/OS Driver And SmartPort Version Numbers

Apple IIGS Long Version Format

Long version format is a 32-bit (two-word) format similar to the standard Macintosh version numbering scheme defined in Macintosh Technical Note #189, Version Territory, except the four bytes are stored least significant byte first, as is standard on the Apple II, and the values of the stage are different. Figure 3 shows the format of a long version.

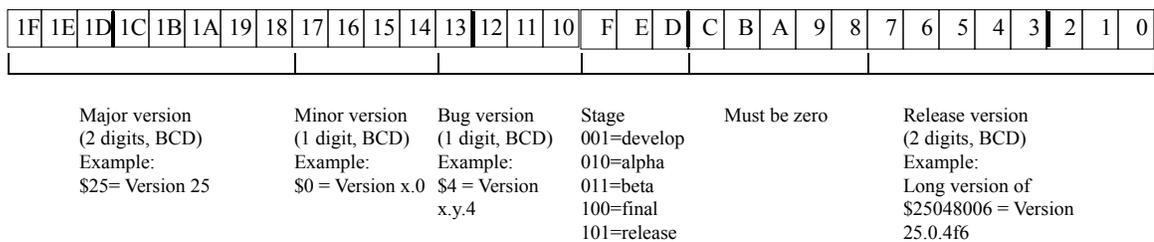


Figure 3—Long Version Numbers

Long version format allows for bug versions, unlike toolbox versions. Also, you can do unsigned long comparisons of long versions to determine which revision is later.

Note: If the version stage is 101 (release), the release version **must** be zero. For example, you may not have version 25.0.4 release 16. “Release version” implies that the product is no longer under development and has no developmental version

numbers.

System Version Numbers

The most important of the numerous version numbers in the system are the system tool version numbers. These numbers, passed to `LoadTools`, `LoadOneTool` or `StartUpTools` ensure that you're getting at least the version you want, or maybe a later one. This mechanism is your primary defense against old system software—by requiring the latest tool versions in your application, you are notified by the Tool Locator early in your program if the system has the latest system software installed or not.

Note that ROM 1 and ROM 3 have different version numbers for seven tools under 5.0.4—QuickDraw II, the Scheduler, ADB, SANE, Integer Math, Text Tools and the List Manager. In each case, the ROM 01 version is lower and should be used in your `LoadOneTool`, `LoadTools` or `StartUpTools` calls.

The current revision of Apple IIGS System Software is 5.0.4. The only system tool to change from 5.0.3 to 5.0.4 is QuickDraw Auxiliary, which changed to version 3.3. Assuming a correct installation, requiring QuickDraw Auxiliary 3.3 in effect requires System Software 5.0.4.

System Tool Set Versions

Number	Tool	ROM 1	ROM 3
1	Tool Locator	\$0300	\$0300
2	Memory Manager	\$0301	\$0301
3	Misc Tools	\$0301	\$0301
4	QuickDraw II	\$0305	\$0306
5	Desk Manager	\$0303	\$0303
6	Event Manager	\$0300	\$0300
7	Scheduler	\$0200	\$0300
8	Sound Tools	\$0303	\$0303
9	ADB	\$0201	\$0300
10	SANE	\$0202	\$0300
11	Integer Math	\$0200	\$0300
12	Text Tools	\$0201	\$0300
14	Window Manager	\$0302	\$0302
15	Menu Manager	\$0302	\$0302
16	Control Manager	\$0302	\$0302
18	QuickDraw II Aux	\$0303	\$0303
19	Print Manager	\$0300	\$0300
20	Line Edit	\$0302	\$0302
21	Dialog Manager	\$0303	\$0303

22	Scrap Manager	\$0300	\$0300
23	Standard File	\$0302	\$0302
25	Note Synthesizer	\$0104	\$0104
26	Note Sequencer	\$0104	\$0104
27	Font Manager	\$0302	\$0302
28	List Manager	\$0301	\$0302
29	ACE	\$0102	\$0102
30	Resource Manager	\$0101	\$0101
32	MIDI Tools	\$0103	\$0103
33	Video Overlay	\$0101	\$0101
34	Text Edit	\$0102	\$0102

GS/OS Version Numbers

Component	Version
GS/OS	3.3
ProDOS FST	3.7
AppleShare FST	3.4
High Sierra FST	3.1
Character FST	3.0
SCSI HD Driver	1.0
SCSI CD Driver	1.0
AppleDisk 3.5 Driver	3.0
AFP Driver	2.2
RPM Driver	2.2
AppleTalk Main Driver	2.2
Console Driver	3.1
AppleDisk 5.25 Driver	2.4
UniDisk 3.5 Driver	2.22

CDev Version Numbers

CDev	Version
Alphabet	1.0
AppleShare	1.0
AppleTalk ImageWriter	1.0.1
AppleTalk ImageWriter LQ	1.0.1
Direct Connect Printer	1.0
General	1.0
Keyboard	1.0
LaserWriter	1.0.1
Modem Port	1.0

Monitor	1.0
Mouse	1.0
Printer Port	1.0
RAM	1.0
Slots	1.1
Sound	1.0
Time	1.0

Further Reference

- *Apple II GS Toolbox Reference*
- *GS/OS Reference*
- GS/OS Technical Note #1, Contents of System Disk and System Tools
- File Type Note for File Type \$C7, Control Panel Devices