SDOS (v1.3) – *04/30/2023*

SDOS (v1.3) is a Commodore disk utility and speed loader by Robert Olessak.

All of its contents are Public Domain: open-source and freeware.

The executables together with the source files and some description (this PDF) can be found all within a ZIP file. If you are missing any of them, you can download it from here:

http://istennyila.hu/stuff/sdos.zip

This version has been meant to replace some old and outdated other applications:

1.) **VDOS**: written by Edward Carroll in 1986 (a typical early C64 fastloader).

2.) **SJLOAD (v0.96)**: created by "1570" in 2008-2009, based on VDOS: replacing the speed loader part with another code portion for supporting the JiffyDOS protocol instead.

3.) **SDOS (v1.0)**: created by Robert Olessak in 2016, based on SJLOAD and VDOS: first porting them to CBM prg Studio, then combining both into a common one.

VDOS had supported only 1541 and 1571 disk drives (in C64 mode), while SJLOAD supported only Jiffy drives (mostly used for SD2IEC). SDOS can be used for any kind of periferals: it checks the drive at being launched, then chooses the right protocol.

SDOS (v1.1) to **SDOS (v1.3)** have been created in 2019-2023, and these newer versions have already got a lot of minor and major bugfixes over the previous ones as well as some new features (*see next page for more details*).

General usage (for starting the loader):

LOAD "!" ,8,1	*simply launch (with autostart),* ***or:***
LOAD "!*PROGRAM" ,8,1	*launch and then load and run "program",* ***or:***
LOAD "!" ,8 / RUN	*as above (but without the autostart),* ***or:***
LOAD "!*PROGRAM" ,8 / RUN	*as above*

*(Note: on a 1581 disk drive, the * does not work, so please type = instead.)*

After having been installed:

VERIFY	*display status from command channel*
VERIFY "…"	*send command to drive*
VERIFY "$"	*display directory (only on the screen)*
LOAD "$"	*load directory from last accessed device*
LOAD "PROGRAM"	*load program from last accessed device*
LOAD "PROGRAM" (,8),1	*as above (as a machine code)*

LOAD “PROGRAM” (,8),0	*as above (as a Basic code)*
LOAD *(without filename)*	=> LOAD “?*” ,8(,1) *(load first file)*
SYS 737	*re-install (or activate)*
SYS 700	*un-install (or deactivate)*

New features (of SDOS in v1.0 to v1.2):

- if using LOAD ”!*PROGRAM” ,8(,1) the program will also be autorun
- holding the Shift key skips the autorun (can be combined with below)
- holding the Ctrl key forces always SJLOAD (and skips drive check)
- holding the C= key forces always VDOS (and skips drive check)
- holding both C= and Ctrl keys at once forces always Kernal load
- screen blanked and sprites and IRQ disabled in all three modes
- typing 0 or 1 for device number means latest with ,0 or ,1
- typing no device number at all means latest once again
- number 8 (or 1) is substitute for last accessed device
- specifying no filename means load first file
- display is slightly changed

New features (of SDOS in v1.3):

- no limit in loadable file size any more
- loading even possible to RAM under the I/O
- directory will also be fastloaded if possible (on SJ)
- better optimization, device number, error handling etc.

File sizes:

Older versions were limited to load files sized of maximally about 195-202 blocks on disk (if loaded to Basic start). In this new version of SDOS (v1.3) this restriction has been completely removed (*see about it later*). It is itself 9 blocks (whereas the original SJLOAD or VDOS were merely 5 blocks) though, which is not so surprising, as it contains both of them.

Compatibility:

The main goal was to always have the Jiffy protocol if/when ever just possible while also allowing to use drives without the built-in Jiffy ROM extension.

On being launched, SDOS makes a quick drive check by sending out a UI (soft reset) command, then reading the identity message from the command channel back. If it contains some certain keywords (like e.g. “jiffy”, or “cmd” as identifying a CMD hard drive, or “iec” as identifying an SD2IEC, uIEC, MMC2IEC or IEC-ATA etc.), then it will be treated as a Jiffy device, so the SJLOAD protocol is used by default. If not, then it rather searches for a classical 1541/71 (or 1540/70) floppy drive (but without the JiffyDOS), and if found, then the VDOS protocol is used instead. If none of them is found, then it reverts to the stock Kernal routines of your machine (therefore SDOS only provides the wedge functionality in this case).

You might manually reconsider the above decisions by holding down some controlling keys if you want: C= for forcing to choose VDOS, or Ctrl for forcing to choose SJLOAD; or even by holding down both keys at the same time for forcing to choose Kernal load as well.

Besides, the old programs had still got a lot of minor bugs and flaws before, the most of which have already been fixed in SDOS by now (eventually this v1.3 has been completely re-written from scratch). Therefore they are recommended to be replaced with this one.

Editions:

There are now six different editions of the same program, for the best flexibility:

SDOS: this is the full version with all features included (as before). And it has the same size of 9 blocks on disk, too, as it has always been before (but since it has already been re-written from scratch inside with much better optimization, it has now got more features).

SJ64: hard-wired to always use the SJ protocol (thus the VDOS part has been removed, and it does not even do a drive check any more, either). Only 7 blocks on disk.

SV64: vice versa, hard-wired to always use the VDOS protocol instead (the SJ part removed, no drive check), but everything else is similar. Also 7 blocks on disk.

Compact Edition (CE): the wedge functionality (as for using the VERIFY command) has been removed as well as some further minor features (such as no greetings message prompt on screen any more etc.). There are three of them, one for each of the above respectively (thus called as **SDOS-CE**, **SJ64-CE** and **SV64-CE**) and each is another one block smaller than its pair (thus only 8 or 6 blocks on disk instead).

Some notes on the above:

Loadable file size: its limitation in the old versions was because those programs were originally compiled to run somewhere around the last few pages before the I/O area at $d000 or similar places, so thus when the loading reached that point, they got overwritten, then crashed… This new version however hides at the very end of the 64K memory instead (at $fa00-$ffff) and a more flexible way of memory swapping is applied. (You may turn off this feature by typing SYS 727 if you want, but it is not recommended.) Loading now is even possible into the RAM underneath the I/O area or system ROM's (as bank switching is used).

Directory loading: if you load the disk directory with LOAD "$" or similar commands, then it will be fastloaded, too, but it is only possible when using the SJ protocol (on VDOS it loads at normal speed). Although on an SD2IEC the SJ protocol can speed even up to 22x-25x of the normal Kernal load routine, that for loading the directory is a little bit slower, must be "only" about 10x-12x or so (still not bad).

Naming conventions: the names of the original programs still had to be one-character long always (and generally being called as "!"). It is no longer so important, and you can even use such forms to start up another program like e.g. LOAD "SDOS.PRG*PROGRAM" ,8,1. Simply take one out of the six editions, then copy and rename it as "!" for classical usage.

Device number handling: the virtual drive numbers of 0, 1 and 8 are now all substitutes for the last successfully used drive number, and they can even be omitted for more comfortable typing (as well as the filename can be omitted when loading the first file on the disk, thus e.g. a single LOAD command is now the substitute of LOAD "?*" ,8,1). It means that for example after first accessing a drive with device number 9, all the other LOAD/VERIFY commands henceforth using 0, 1 or 8 will continue on accessing that drive again (that's also useful if some multiload games are hard-coded to always use these numbers). However, it may cause some problems, if you also have another real drive with device number 8, since you won't be able to turn back to it because of that… In such a case, adding any power of two above the number will do the job for you (e.g. specifying 16 or 24 instead of 8 will help, or 17 instead of 1 in case you want to load from tape).

About the author:

This entire *SDOS project* initially started as an independent part of my *Rosetta Interactive Fiction* project. (As I had not found any kind of proper boot loading system, I have had to make it by myself.) However, you can also freely apply it at your will, of course.

***SDOS** project homepage:*

http://istennyila.hu/sdos

***MemTest64** project homepage:*

http://istennyila.hu/memtest64

***Rosetta Interactive Fiction** project homepage:*

http://istennyila.hu/rosetta

(On opening them please click onto the greetings images for entering the main page!)

Robert Olessak (2012-2023)