

How To : Install the SAGA SDCard Driver



Overview

Jason Mac Mullan kindly develops and maintains the SAGA SDCard Driver to be used with the MicroSD slot of the Vampire boards. See [SAGA SDCard Core](#) article for more technical informations. This device can be used as an additional disk for use with your AmigaOS 3.x setup. The driver is still in a beta stage. Always **BACKUP** your data before use such piece of software, until you are sure all works as expected.

Important notes



The current SAGA SD Driver does **NOT** implement - in current version - the AUTOMATIC disk drive geometry methods that would allow AmigaOS DOSDrivers MountLists to use some handy default values. As a consequence, keep in mind that :

1. MountList attributes such as LowCyl, HighCyl and some others must be explicitly specified. For example, LowCyl = 0 will **NOT** work !
 2. Each MicroSD card must use its own MountList. **NEVER** use a MountList dedicated to a given SD card with another SD card.
 3. Use third-party program to create correct MountList by reading the lowlevel geometry of the disk, such as [GiggleDisk](#).
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1) Install the required files



The installation of the SDCard on the Vampire requires some files, provided on the SAGA driver package and some additional tools available on Aminet. Please, follow step by step the following procedure :

1.1) Install the SAGA SD Driver package

1. Run the installer provided in the [SAGADriver LHA Package](#).

1.2) Install SCSIQuery (optional)

1. Download [SCSIQuery](#), available on Aminet.
2. Copy the file SCSIQuery/SCSIQuery to C:SCSIQuery

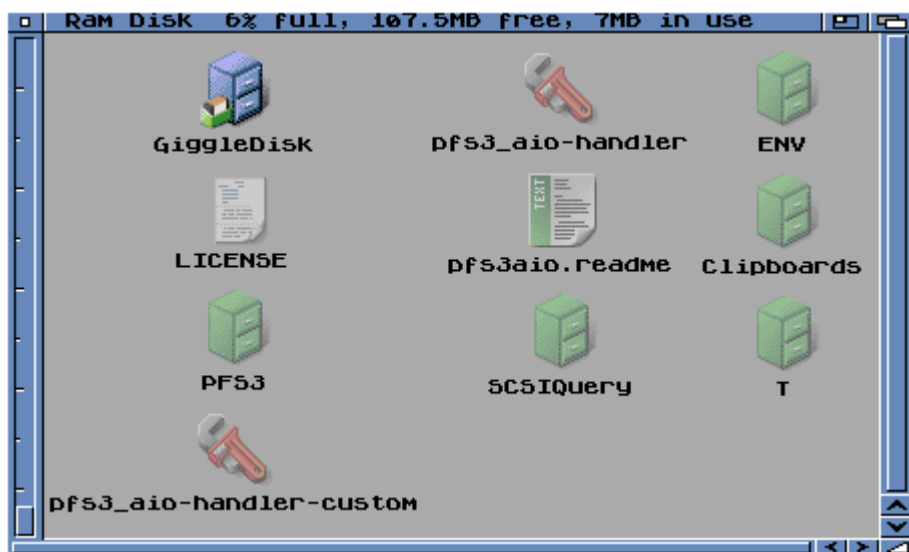
1.3) Install PFS3 All-In-One (recommended filesystem)

1. Download [PFS3AIO](#), available on Aminet.
2. Copy the file pfs3_aio-handler to L:pfs3_aio-handler.
3. Download [PFS3_53](#), available on Aminet.
4. Copy the file PFS3/tools/pfsformat to C:pfsformat.
5. Optionally, you can copy the other PFS tools (pfsdoctor, setfnsiz, ...).

1.4) Check for Installed files

1. Reboot your computer
2. Check if the following files are installed in the System drive :

Filename	>Version FileName FULL
C:GiggleDisk	GiggleDisk 1.19 (21/05/2005) by Guido Mersmann - Amiga 68K Version
C:pfsformat	Format 1.1 (17/05/1999) by Michiel Pelt and copyright 1999 Great Effect Development
C:SCSIQuery	SCSIQuery 1.33 (22/11/1999) © THOR
C:SDDiag	SDDiag 0.8n (28/04/2016) © The AROS Development Team
DEVS:sagasd.device	sagasd.device 0.9 (16/05/2016)
L:pfs_aio-handler	pfs3_aio-handler 18.5 (14/05/2014)
SYS:System/SDMount	no information



2) Check the MicroSD card



The SAGA SD Driver (sagasd.device) provides method for READ GEOMETRY of the disk. First step is to check if the MicroSD card that will be used is compatible or not.

1. Make sure you have all the required files installed on your System (see previous chapter).
2. Insert a MicroSD card in the dedicated Vampire MicroSD slot.
3. Open a CLI (newcli).
4. Type SDDiag and RETURN.
5. If you have an error, then your MicroSD will **NOT** works with the driver.
6. If you have informations such as Block Size, Blocks and Capacity, then the MicroSD should work with the driver.
7. Additionnaly, type in the CLI, SCSIQuery to double-check the geometry of your SDCard.
8. Check if Capacity in blocks is same as Blocks shown in SDDiag.
9. Check if Block length is same as Block Size shown in SDDiag.
10. If there is differences, something is wrong and should be reported in the [APOLLO Forum](#).

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AmigaShell | Help... Settings...
VINCED Version 3.91 © 2000-2001 Amiga Inc.
performed 1990-2001 by Thomas Richter.
New Shell process 4
4.Workbench: > sddiag
DebugLevel: 0
SD Card Detected on $0xDE0000:
Block Size: 512
Blocks: 125001840
Capacity: 60G
OCB: C0FF0000
CID: 28 42 45 32 62 4C 53 50 09 56 50 02 BB 01 0A AF
CSD: 40 0E 00 32 5B 59 00 01 DD 2F 7F 00 0A 40 00 CB
4.Workbench: >

```

3) Prepare the MicroSD card



Different methods for different uses

1. Prepare the disk on Vampire using HDToolBox with a given FileSystem, and Giggledisk.
2. Prepare the disk on WinUAE or FS-UAE using HDToolBox with a given FileSystem.
3. Prepare the disk on Windows or Linux using FAT95 FileSystem.

The following guide will explains how to prepare a MicroSD card

1. From your Amiga equipped with Vampire board.
2. Using AmigaOS3.1.
3. Using HDToolBox version 45.6.
4. Using a single partition.
5. Using PFS FileSystem (requires L:pfs3_aio-handler version 18.5).
6. Using SYS:System/SDMount (requires C:GiggleDisk version 1.19).
7. Using C:pfs3format version 1.1.

Prepare the MicroSD card with HDToolBox

1. Open a CLI (newcli).
2. Type SYS:Tools/HDToolBox device=sagasd.device and RETURN.
3. HDToolBox should open the GUI and shows SAGASD, Vampire SAGA-SD.
4. Click on this item in the list and then click the Install Drive button.
5. Confirm the Warning requester.
6. Click New in the requester if the disk have already a RDB.
7. The program now shows the Drive Definition for SAGASD.
8. Informations are read by the sagasd.device and should be correct, no need to modify them.
9. Click Install button and wait a small delay.
10. Click Partition Drive button.
11. Select '1' in the Default Setup ComboBox, for a single partition.
12. Change Buffers to '150'.
13. Change Partition Name to SD0.
14. Ensure Bootable is **NOT** checked.
15. Click Add / Update button.
16. Delete all items (FileSystems) in list.
17. Click Add new File System... and select L:pfs3_aio-handler.
18. Modify the Identifier 0x444F5303 by 0x50445303.
19. Ensure Version is '18.0'.
20. Click Ok button.
21. Click Change... button.
22. Select PDS\03 in the File System ComboBox.
23. Click Save button.
24. Click Exit button.
25. Reboot.

Create the MountList with SDMount

1. Open a CLI (newcli).
2. Type Execute SYS:System/SDMount and RETURN.
3. Type CD T:SDMount and RETURN.
4. Type Dir and RETURN.
5. This script use C:GiggleDisk to read the MicroSD partitions table,
6. and creates one MountList per partition in T:SDMount directory.
7. Type Ed SD0 and RETURN.
8. Ensure that FileSystem attribute is FileSystem = L:pfs3_aio-handler.
9. Save and exit if needed.
10. Type Copy ALL TO SYS:Storage/DOSDrivers/.
11. Better Reboot, especially if you modified the MountList.

Quick format the partitions with pfsformat

1. Open a CLI (newcli).
 2. Type `Mount SYS:Storage/DOSDrivers/SD0` and RETURN.
 3. Now, we have SD0: mounted and is ready to be formatted.
 4. A icon `SD0:Unitialized` might appears or not on your Workbench desktop.
 5. Type `C:PFSFormat DEVICE=sagasd.device NAME=SDCARD1 QUICK FNSIZE=107` and RETURN.
 6. ALWAYS use QUICK command on SDCard devices (true for all non-mechanical devices, including CompactFlash).
 7. FNSIZE stands for 'FileName Size', max is 107 chars with PFS.
 8. Wait until QUICK Format is finished.
 9. Optionally, copy `SYS:Storage/DOSDrivers/SD0` (including the .info) to `DEVS:DOSDrivers/` to mount them at boot.
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SAGA SD Driver Sources



Under MIT License driver sources :

- [sagasd.device host](#)
 - [sagasd.device history](#)
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Additional informations

- Forum : [SAGA SD Driver News](#)
 - Video : [Vampire 600 V2 - PFSDoctor test with the Silver5 core](#)
 - Video : [Vampire 600 V2 - SD-Card Filesystem Test](#)
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Additional tools

- [GiggleDisk](#)
 - [SCSIQuery](#)
 - [PFS3 AIO](#)
 - [PFS3](#)
 - [SFS](#)
 - [FAT95](#)
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Additional hardware

SDCard to MicroSD adapter



SDCard to MicroSD adapter/extender



Roadmap



1. Make it works :) - Done since sagasd.device version 0.9+ in addition to SILVER5+ core.
2. Fix all remaining bugs spotted by testers - Some are fixed, but there can still be some.
3. Add Automatic disk drive geometry, for much more friendly use.
4. Handle on the fly Removable disk. Such feature is **NOT** supported natively by AmigaOS3.x.
5. Make it Romable so that the OS can boot from SD.

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