What are BIOS files and how to add them

BIOS files are files required for some emulators to operate correctly. For example, the PlayStation 1 and the NeoGeo consoles require a BIOS file to work. These files are not packaged together with the system. These are not legally distributed, so you will need to supply your own.

To add BIOS files, you need to connect to your Batocera device from a computer :

1. From your computer directory (or finder on Mac OS), browse the network
2. Find Batocera (or directly type `\\batocera` (Windows) or `smb://batocera.local` (Linux))
3. Add BIOS files into the BIOS directory

What about arcade games? For arcade emulators, it's a little more complicated: many arcade boards were designed for one specific game, or just a few games. And most cases, you don't need BIOS files, but you might still need some specific additional files as described on this page. For other arcade systems, like Atomiswave or Naomi, they need a proper BIOS file, as listed below.

List of BIOS files that are suitable

You can use the `md5sum` command to get the checksum of your files. But the easiest is to check **MISSING BIOS** from the EmulationStation **SYSTEM SETTINGS** menu. This is always up to date with your current version.

You can find the versions of the BIOS files required by your system when connecting with SSH, they are listed in the file `/usr/share/batocera/datainit/bios/readme.txt`

Here a the compatible md5 and filenames per system, as of Batocera v31:

```
3DO:
f47264dd47fe30f73ab3c010015c155b bios/panafz1.bin
51f2f43ae2f3508a14d9f56597e2d3ce bios/panafz10.bin
8639fd5e549bd6238cfee79e3e749114 bios/goldstar.bin

Amiga:
85ad74194e87c08904327de1a9443b7a bios/kick33180.A500
82a21c1890cae844b3df741f2762d48d bios/kick34005.A500
dc10d7bdd1b6f450773dfb558477c230 bios/kick37175.A500
89da1838a24460e4b93f4f0c5d92d48d bios/kick34005.CDTV
e40a5dfb3d017ba8779faba30cbd1c8e bios/kick40063.A600
b7cc148386aa631136f510cd29e42fc3 bios/kick39106.A1200
646773759326fbac3b2311fd8c8793ee bios/kick40068.A1200
9bdedde6a4f33555b4a270c8ca53297d bios/kick40068.A4000
5f8924d013dd57a89cf349f4cdedc6b1 bios/kick40060.CD32
bb72565701b1b6faece07d68ea5da639 bios/kick40060.CD32.ext
82a21c1890cae844b3df741f2762d48d bios/amiga-os-130.rom
646773759326fbac3b2311fd8c8793ee bios/amiga-os-310-a1200.rom
dc10d7bdd1b6f450773dfb558477c230 bios/amiga-os-204.rom
465646c9b6729f77eea5314d1f057951 bios/amiga-os-205.rom
413590e50098a056cfec418d3df0212d bios/amiga-os-310-a3000.rom
```

```
730888fb1bd9a3606d51f772ed136528 bios/amiga-os-310.rom
85ad74194e87c08904327de1a9443b7a bios/amiga-os-120.rom
5f8924d013dd57a89cf349f4cdedc6b1 bios/amiga-os-310-cd32.rom
bb72565701b1b6faece07d68ea5da639 bios/amiga-ext-310-cd32.rom
89da1838a24460e4b93f4f0c5d92d48d bios/amiga-ext-130-cdtv.rom

Atari 5200 / Atari 800:
281f20ea4320404ec820fb7ec0693b38 bios/5200.rom
06daac977823773a3eea3422fd26a703 bios/ATARIXL.ROM
0bac0c6a50104045d902df4503a4c30b bios/ATARIBAS.ROM
eb1f32f5d9f382db1bbfb8d7f9cb343a bios/ATARIOSA.ROM
a3e8d617c95d08031fe1b20d541434b2 bios/ATARIOSB.ROM

Atari ST:
c1c57ce48e8ee4135885cee9e63a68a2 bios/tos.img
25789a649faff0a1176dc7d9b98105c0 bios/tos100fr.img
c87a52c277f7952b41c639fc7bf0a43b bios/tos100uk.img
d0f682ee6237497004339fb02172638b bios/tos100us.img
a622cc35d8d78703905592dfaa4d2ccb bios/tos102de.img
d6521785627d20c51edc566808a6bf28 bios/tos102fr.img
b2a8570de2e850c5acf81cb80512d9f6 bios/tos102uk.img
41b7dae4e24735f330b63ad923a0bfbc bios/tos104de.img
143343f7b8e0b1162af206fe8f46b002 bios/tos104es.img
0087e2707c57efa2106a0aa7576655c0 bios/tos104fr.img
036c5ae4f885cbf62c9bed651c6c58a8 bios/tos104uk.img
736adb2dc835df4d323191fdc8926cc9 bios/tos104us.img
992bac38e01633a529121a2a65f0779e bios/tos106de.img
30f69d70fe7c210300ed83f991b12de9 bios/tos106es.img
bc7b224d0dc3f0cc14c8897db89c5787 bios/tos106fr.img
6033f2b9364edfed321c6931a8181fd2 bios/tos106uk.img
a0982e760f9807d82667ff5a69e78f6b bios/tos106us.img
94a75c1c65408d9f974b0463e15a3b11 bios/tos162de.img
ed5fbaabe0219092df74c6c14cea3f8e bios/tos162fr.img
1cbc4f55295e469fc8cd72b7efdea1da bios/tos162uk.img
febb00ba8784798293a7ae709a1dafcb bios/tos162us.img
7aeabdc25f8134590e25643a405210ca bios/tos205de.img
7449b131681f1dfe62ebed1392847057 bios/tos205es.img
61b620ad951815a25cb37895c81a947c bios/tos205fr.img
7e87d8fe7e24e0b4c55ad1b7955beae3 bios/tos205it.img
7cdd45b6aac66a21bfb357d9334e46db bios/tos205us.img
0604dbb85928f0598d04144a8b554bbe bios/tos206de.img
b2873004a408b8db36321f98daafa251 bios/tos206fr.img
4a0d4f282c3f2a0196681adf88862dd4 bios/tos206.img
e690bec90d902024beed549d22150755 bios/tos206uk.img
c9093f27159e7d13ac0d1501a95e53d4 bios/tos206us.img
066f39a7ea5789d5afd59dd7b3104fa6 bios/tos306de.img
dd1010ec566efbd71047d6c4919feba5 bios/tos306uk.img
ed2647936ce4bd283c4d7dfd7ae09d1c bios/tos400.img
9e880168d0a004f7f5e852be758f39e4 bios/tos402.img
e5ea0f216fb446f1c4a4f476bc5f03d4 bios/tos404.img
```

```
Atomiswave:
0ec5ae5b5a5c4959fa8b43fcf8687f7c bios/awbios.zip

Fairchild ChannelF:
ac9804d4c0e9d07e33472e3726ed15c3 bios/sl31253.bin
da98f4bb3242ab80d76629021bb27585 bios/sl31254.bin
95d339631d867c8f1d15a5f2ec26069d bios/sl90025.bin

Dreamcast:
e10c53c2f8b90bab96ead2d368858623 bios/dc_boot.bin
0a93f7940c455905bea6e392dfde92a4 bios/dc_flash.bin

Nintendo Family Computer Disk System:
ca30b50f880eb660a320674ed365ef7a bios/disksys.rom

Fujistu FM-Towns:
8fa4e553f28cfc0c30a0a1e589799942 bios/fmtowns/FMT_DIC.ROM
0585b19930d4a7f4c71bcc8a33746588 bios/fmtowns/FMT_DOS.ROM
ac0c7021e9bf48ca84b51ab651169a88 bios/fmtowns/FMT_F20.ROM
b91300e55b70227ce98b59c5f02fa8dd bios/fmtowns/FMT_FNT.ROM
86fb6f7280689259f0ca839dd3dd6cde bios/fmtowns/FMT_SYS.ROM

Future Pinball:
65a8ebf870420316a939ac44fd4c731d bios/wsh57/scripten.exe

Nintendo Gameboy Advance:
a860e8c0b6d573d191e4ec7db1b1e4f6 bios/gba_bios.bin
32fbbd84168d3482956eb3c5051637f5 bios/gb_bios.bin
dbfce9db9deaa2567f6a84fde55f9680 bios/gbc_bios.bin
d574d4f9c12f305074798f54c091a8b4 bios/sgb_bios.bin

Mattel Intellivision:
62e761035cb657903761800f4437b8af bios/exec.bin
0cd5946c6473e42e8e4c2137785e427f bios/grom.bin

Lynx:
fcd403db69f54290b51035d82f835e7b bios/lynxboot.img

MSX:
364a1a579fe5cb8dba54519bcfcdac0d bios/MSX.ROM
ec3a01c91f24fbddcbcab0ad301bc9ef bios/MSX2.ROM
2183c2aff17cf4297bdb496de78c2e8a bios/MSX2EXT.ROM
847cc025ffae665487940ff2639540e5 bios/MSX2P.ROM
7c8243c71d8f143b2531f01afa6a05dc bios/MSX2PEXT.ROM

Naomi:
eb4099aeb42ef089cfe94f8fe95e51f6 bios/naomi.zip

Nintendo DS:
145eaef5bd3037cbc247c213bb3da1b3 bios/firmware.bin
df692a80a5b1bc90728bc3dfc76cd948 bios/bios7.bin
```

```
a392174eb3e572fed6447e956bde4b25 bios/bios9.bin

NeoGeo:
dffb72f116d36d025068b23970a4f6df bios/neogeo.zip

NeoGeo CD:
c733b4b7bd30fa849874d96c591c8639 bios/neocdz.zip

Odyssey 2:
562d5ebf9e030a40d6fabfc2f33139fd bios/o2rom.bin
f1071cdb0b6b10dde94d3bc8a6146387 bios/c52.bin
c500ff71236068e0dc0d0603d265ae76 bios/g7400.bin
279008e4a0db2dc5f1c048853b033828 bios/jopac.bin

NEC PC-8800:
4f984e04a99d56c4cfe36115415d6eb8 bios/quasi88/N88.ROM
793f86784e5608352a5d7f03f03e0858 bios/quasi88/N88SUB.ROM
2ff07b8769367321128e03924af668a0 bios/quasi88/N88N.ROM
d675a2ca186c6efcd6277b835de4c7e5 bios/quasi88/N88EXT0.ROM
e844534dfe5744b381444dbe61ef1b66 bios/quasi88/N88EXT1.ROM
6548fa45061274dee1ea8ae1e9e93910 bios/quasi88/N88EXT2.ROM
fc4b76a402ba501e6ba6de4b3e8b4273 bios/quasi88/N88EXT3.ROM

NEC PC-9800:
e246140dec5124c5e404869a84caefce bios/np2kai/BIOS.ROM
2af6179d7de4893ea0b705c00e9a98d6 bios/np2kai/FONT.ROM
caf90f22197aed6f14c471c21e64658d bios/np2kai/SOUND.ROM
e9fc3890963b12cf15d0a2eea5815b72 bios/np2kai/ITF.ROM
7da1e5b7c482d4108d22a5b09631d967 bios/np2kai/font.bmp

PC Engine:
38179df8f4ac870017db21ebcbf53114 bios/syscard3.pce

PC-FX:
08e36edbea28a017f79f8d4f7ff9b6d7 bios/pcfx.rom

PS2:
28922c703cc7d2cf856f177f2985b3a9 bios/SCPH30004R.bin
3faf7c064a4984f53e2ef5e80ed543bc bios/SCPH30004R.MEC
d5ce2c7d119f563ce04bc04dbc3a323e bios/scph39001.bin
3faf7c064a4984f53e2ef5e80ed543bc bios/scph39001.MEC
9a9e8ed7668e6adfc8f7766c08ab9cd0 bios/EROM.BIN
44552702b05697a14ccbe2ca22ee7139 bios/rom1.bin
b406d05922dac2eaf3c2e68157b1b468 bios/ROM2.BIN

PS3:
03373a581934f0d2b796156d2fb28b39 bios/PS3UPDAT.PUP

PSX:
c53ca5908936d412331790f4426c6c33 bios/psxonpsp660.bin
6e3735ff4c7dc899ee98981385f6f3d0 bios/scph101.bin
```

```
dc2b9bf8da62ec93e868cfd29f0d067d bios/scph1001.bin
8dd7d5296a650fac7319bce665a6a53c bios/scph5500.bin
490f666e1afb15b7362b406ed1cea246 bios/scph5501.bin
32736f17079d0b2b7024407c39bd3050 bios/scph5502.bin
1e68c231d0896b7eadcad1d7d8e76129 bios/scph7001.bin

Satellaview:
96cf17bf589fcbfa6f8de2dc84f19fa2 bios/BS-X.bin

Sega Saturn:
85ec9ca47d8f6807718151cbcca8b964 bios/sega_101.bin
3240872c70984b6cbfda1586cab68dbe bios/mpr-17933.bin
255113ba943c92a54facd25a10fd780c bios/mpr-18811-mx.ic1
1cd19988d1d72a3e7caa0b73234c96b4 bios/mpr-19367-mx.ic1
af5828fdff51384f99b3c4926be27762 bios/saturn_bios.bin

Sega CD:
e66fa1dc5820d254611fdcdba0662372 bios/bios_CD_E.bin
854b9150240a198070150e4566ae1290 bios/bios_CD_U.bin
278a9397d192149e84e820ac621a8edd bios/bios_CD_J.bin

Sufami:
d3a44ba7d42a74d3ac58cb9c14c6a5ca bios/STBIOS.bin

Supergrafx:
38179df8f4ac870017db21ebcbf53114 bios/syscard3.pce

Sharp X1:
eeeea1cd29c6e0e8b094790ae969bfa7 bios/xmil/IPLROM.X1
56c28adcf1f3a2f87cf3d57c378013f5 bios/xmil/iplrom.x1t

Sharp x68000:
7fd4caabac1d9169e289f0f7bbf71d8e bios/keropi/iplrom.dat
cb0a5cfcf7247a7eab74bb2716260269 bios/keropi/cgrom.dat

Xbox:
d49c52a4102f6df7bcf8d0617ac475ed bios/mcpx_1.0.bin
39cee882148a87f93cb440b99dde3ceb bios/Complex_4627.bin
```

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