

# HDF5 1.8.4

Version	HDF5 1.8.4
Release Date	2009-11-10
Download	<a href="ftp://HDF5/releases/hdf5-1.8/hdf5-1.8.4/">/ftp/HDF5/releases/hdf5-1.8/hdf5-1.8.4/</a>
Release Notes	<a href="#">Release Notes</a>

## Release Notes:

HDF5 version 1.8.4 released on Tue Nov 10 15:18:57 CST 2009

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### INTRODUCTION

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This document describes the differences between HDF5-1.8.3 and HDF5 1.8.4, and contains information on the platforms tested and known problems in HDF5-1.8.4  
For more details, see the files HISTORY-1\_0-1\_8\_0\_rc3.txt and HISTORY-1\_8.txt in the release\_docs/ directory of the HDF5 source.

Links to the HDF5 1.8.4 source code, documentation, and additional materials can be found on the HDF5 web page at:

<http://www.hdfgroup.org/products/hdf5/>

The HDF5 1.8.4 release can be obtained from:

<http://www.hdfgroup.org/HDF5/release/obtain5.html>

User documentation for 1.8.4 can be accessed directly at this location:

<http://www.hdfgroup.org/HDF5/doc/>

New features in the HDF5-1.8.x release series, including brief general descriptions of some new and modified APIs, are described in the "What's New in 1.8.0?" document:

<http://www.hdfgroup.org/HDF5/doc/ADGuide/WhatsNew180.html>

All new and modified APIs are listed in detail in the "HDF5 Software Changes from Release to Release" document, in the section "Release 1.8.4 (current release) versus Release 1.8.3":

<http://www.hdfgroup.org/HDF5/doc/ADGuide/Changes.html>

If you have any questions or comments, please send them to the HDF Help Desk:

[help@hdfgroup.org](mailto:help@hdfgroup.org)

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## New Features

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### Configuration

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- Configuration suite now uses Automake 1.11 and Autoconf 2.64.  
MAM 2009/08/31.
- Changed default Gnu fortran compiler from g95 to gfortran since  
gfortran is more likely installed with gcc now. -AKC 2009/07/19-

### Library

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- The embedded library information is displayed by H5check\_version() if a  
version mismatch is detected. Also changed H5check\_version() to  
suppress the warning message totally if \$HDF5\_DISABLE\_VERSION\_CHECK is 2  
or higher. (Old behavior treated 3 or higher the same as 1, that is  
print a warning and allows the program to continue. (AKC - 2009/9/28)
- If a user does not care for the extra library information insert  
in the executables, he may turn it off by --disable-embedded-libinfo  
during configure. (AKC - 2009/9/15)

### Parallel Library

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- None

### Tools

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- h5diff: h5diff treats two INFINITY values different. Fixed by checking  
(value==expect) before call ABS(...) at h5diff\_array.c. This will make  
that (INF==INF) is true (INF is treated as an number instead of NaN)  
(PC -- 2009/07/28)
- h5diff: add option "--use-system-epsilon" to print difference if  
(|a-b| > EPSILON).  
Change default to use strict equality (PC -- 2009/09/12)

### High-Level APIs

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- None

### F90 API

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- Added H5Open\_by\_addr\_f MSB - 9/14/09

### C++ API

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- None

## Support for New Platforms, Languages, and Compilers

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- PathScale compilers are recognized and can build the HDF5 library properly. AKC - 2009/7/28 -

### Bug Fixes since HDF5-1.8.3

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#### Configuration

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- Removed the following config files, as we no longer support them:  
config/dec-osf\*, config/hpux11.00, config/irix5.x,  
config/powerpc-ibm-aix4.x config/rs6000-ibm-aix5.x config/unicos\*  
MAM - 2009/10/08
- Modified configure and make process to properly preserve user's CFLAGS (and company) environment variables. Build will now properly use automake's AM\_CFLAGS for any compiler flags set by the configure process. Configure will no longer modify CFLAGS directly, nor will setting CFLAGS during make completely replace what configure has set up.  
MAM - 2009/10/08
- Support for TFLOPS, config/intel-osf1, is removed since the TFLOPS machine has long retired. AKC - 2009/10/06.
- Added \$(EXEEXT) extension to H5detect when it's executed in the src/Makefile to generate H5Tinit.c so it works correctly on platforms that require the full extension when running executables.  
MAM - 2009/10/01 - BZ #1613
- Configure will now set FC and CXX to "no" when fortran and c++ are not being compiled, respectively, so configure will not run some of the compiler tests for these languages when they are not being used. MAM - 2009/10/01
- The --enable-static-exec flag will now properly place the -static flag on the link line of all installed executables. This will force the executable to link with static libraries over shared libraries, provided the static libraries are available. MAM - 2009/08/31 - BZ #1583
- The PathScale compiler (v3.2) was mistaken as gcc v4.2.0 but it fails to recognize some gcc options. Fixed. (see bug 1301). AKC - 2009/7/28 -

#### Library

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- Fixed a bug where writing and deleting many global heap objects (i.e. variable length data) would render the file unreadable. Previously created files exhibiting this problem should now be readable.  
NAF - 2009/10/27 - 1483
- Fixed error in library's internal caching mechanisms which could cause an assertion failure (and attendant core dump) when encountering an unusually formatted file. (QAK - 2009/10/13)
- Fixed incorrect return value for H5Pget\_preserve. AKC - 2009/10/08 - 1628
- Fixed an assertion failure that occurred when H5Ocopy was called on a dataset using a vlen inside a compound. NAF - 2009/10/02 - 1597
- Fixed incorrect return value for H5Pget\_filter\_by\_id1/2 in H5Ppublic.h.  
NAF - 2009/09/25 - 1620
- Fixed a bug where properties weren't being compared with the registered compare callback. NAF - 2009/09/25 - 1555
- Corrected problem where library would re-write the superblock in a file opened for R/W access, even when no changes were made to the file. (QAK - 2009/08/20, Bz#1473)
- Fixed a bug where H5Pget\_filter\_by\_id would succeed when called for a filter that wasn't present. NAF - 2009/06/25 - 1250
- Fixed an issue with committed compound datatypes containing a vlen. Also fixed memory leaks involving committed datatypes. NAF - 2009/06/10 - 1593

Parallel Library

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- None

Tools

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- h5dump/h5ls display buffer resize fixed in tools library.  
ADB - 2009/7/21 - 1520
- perf\_serial test added to Windows projects and check batch file.  
ADB - 2009/06/11 -1504

F90 API

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- Fixed bug in h5lget\_info\_by\_idx\_f by adding missing arguments, consequently changing the API. New API is:

```
SUBROUTINE h5lget_info_by_idx_f(loc_id, group_name, index_field, order, n, &  
    link_type, f_corder_valid, corder, cset, address, val_size, hdferr, lapl_id)
```

MSB - 2009/9/17 - 1652

- Corrected the values for the H5L\_flags FORTRAN constants:  
H5L\_LINK\_ERROR\_F, H5L\_LINK\_HARD\_F, H5L\_LINK\_SOFT\_F, H5L\_LINK\_EXTERNAL\_F  
MSB - 2009-09-17 - 1653
- Added FORTRAN equivalent of C constant H5T\_ORDER\_NONE: H5T\_ORDER\_NONE\_F  
MSB - 2009-9-24 - 1471

C++ API

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- None

High-Level APIs:

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- Fixed a bug where the H5TB API would forget the order of fields when added out of offset order. NAF - 2009/10/27 - 1582
- H5DSis\_attached failed to account for different platform types. Added a get native type call. ADB - 2009/9/29 - 1562

Fortran High-Level APIs:

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- Lite: the h5ltread\_dataset\_string\_f and h5ltget\_attribute\_string\_f functions had memory problems with the g95 fortran compiler. (PVN 5/13/2009) 1522

Platforms Tested

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The following platforms and compilers have been tested for this release.

AIX 5.3	xlc 7.0.0.8
(LLNL Up)	xlf 09.01.0000.0008
	xlc 7.0.0.8
	mpcc_r 7.0.0.8
	mpxlf_r 09.01.0000.0008
Cray XT3 (2.0.41)	cc (pgcc) 7.1-4

(SNL red storm)	ftn (pgf90) 7.1-4 CC (pgCC) 7.1-4
FreeBSD 6.3-STABLE i386 (duty)	gcc 3.4.6 [FreeBSD] 20060305 g++ 3.4.6 [FreeBSD] 20060305 gcc 4.3.5 20091004 g++ 4.3.5 20091004 gfortran 4.3.5 20091004
FreeBSD 6.3-STABLE amd64 (liberty)	gcc 3.4.6 [FreeBSD] 20060305 g++ 3.4.6 [FreeBSD] 20060305 gcc 4.4.2 20091006 g++ 4.4.2 20091006 gfortran 4.4.2 20091006
Linux 2.6.18-164.el5 #1 SMP i686 i686 i386 (jam)	gcc (GCC) 4.1.2 20080704 G95 (GCC 4.0.3 (g95 0.92!) Jun 24 2009) GNU Fortran (GCC) 4.1.2 20080704 (Red Hat 4.1.2-46) PGI C, Fortran, C++ 8.0-5 32-bit PGI C, Fortran, C++ 8.0-1 32-bit Intel(R) C Compiler for 32-bit applications, Versions 11.0, 11.1 Intel(R) C++ Compiler for 32-bit applications, Version 11.0, 11.1 Intel(R) Fortran Compiler for 32-bit applications, Version 11.0, 11.1 Absoft 32-bit Fortran 95 10.0.7 MPICH mpich2-1.0.8 compiled with
Linux 2.6.18-164.el5 #1 SMP x86_64 GNU/Linux (amani)	gcc 4.1.2 20080704 G95 (GCC 4.0.3 (g95 0.92!) Jun 24 2009) tested for both 32- and 64-bit binaries Intel(R) C, C++, Fortran Compilers for applications running on Intel(R) 64, Versions 11.1. PGI C, Fortran, C++ Version 9.0-4 for 64-bit target on x86-64 gcc 4.1.2 and G95 (GCC 4.0.3 (g95 0.92!)) MPICH mpich2-1.0.8 compiled with GNU Fortran (GCC) 4.1.2 20080704 (Red Hat 4.1.2-46)
Linux 2.6.16.60-0.42.5 #1 SGI Altix SMP ia64 (cobalt)	Intel(R) C++ Version 10.1.017 Intel(R) Fortran Itanium(R) Version 10.1.017 SGI MPI 1.38
SunOS 5.10 32- and 64-bit (linew)	Sun C 5.9 SunOS_sparc Patch 124867-11 2009/04/30 Sun Fortran 95 8.3 SunOS_sparc Patch 127000-11 2009/10/06 Sun C++ 5.9 SunOS_sparc Patch 124863-16 2009/09/15
Intel Xeon Linux 2.6.18- 92.1.10.el5_lustre.1.6.6smp- perfctr #6 SMP (abe)	Intel(R) C++ Version 10.0.026 Intel(R) Fortran Compiler Version 10.0.026 Open MPI 1.2.2 MVAPICH2-0.9.8p28p2patched-intel-ofed-1.2 compiled with icc v10.0.026 and ifort 10.0.026

IA-64 Linux 2.4.21-309.tg1 #1 SMP ia64 (NCSA tg-login)	gcc (GCC) 3.2.2 Intel(R) C++ Version 8.1.037 Intel(R) Fortran Compiler Version 8.1.033 mpich-gm-1.2.7p1..16-intel-8.1.037-r1
Linux 2.6.9-55.0.9.EL_lustre .1.4.11.1smp #1 SMP SMP x86_64 GNU/Linux (SNL Thunderbird)	Intel(R) C, C++, Fortran Compilers for applications running on Intel(R) 64, Versions 10.1.
Linux 2.6.18-76chaos #1 SMP SMP x86_64 GNU/Linux (SNL Glory)	Intel(R) C, C++, Fortran Compilers for applications running on Intel(R) 64, Versions 10.1.
Windows XP	Visual Studio 2005 w/ Intel Fortran 9.1 Cygwin(native gcc compiler and g95)
Windows XP x64	Visual Studio 2005 w/ Intel Fortran 9.1
Windows Vista	Visual Studio 2005 w/ Intel Fortran 9.1
Windows Vista x64	Visual Studio 2005 w/ Intel Fortran 9.1
MAC OS 10.5.6 (Intel)	i686-apple-darwin9-gcc-4.0.1 (GCC) 4.0.1 GNU Fortran (GCC) 4.3.0 20070810 G95 (GCC 4.0.3 (g95 0.91!) Apr 24 2008) Intel C, C++ and Fortran compilers 10.1

#### Supported Configuration Features Summary

=====

In the tables below

y = tested and supported  
 n = not supported or not tested in this release  
 C = Cluster  
 W = Workstation  
 x = not working in this release  
 dna = does not apply  
 ( ) = footnote appears below second table  
 <blank> = testing incomplete on this feature or platform

Platform	C	F90	F90	C++	zlib	SZIP
	parallel		parallel			
Solaris2.10 32-bit	n	y	n	y	y	y
Solaris2.10 64-bit	n	y	n	y	y	y
Windows XP	n	y(4)	n(4)	y	y	y
Windows XP x64	n	y(4)	n(4)	y	y	y
Windows Vista	n	n	n	y	y	y
Mac OS X 10.5 Intel	n	y	n	y	y	y
AIX 5.3 32- and 64-bit	n	y	n	y	y	n
FreeBSD 6.3-STABLE 32&64 bit	n	y	n	y	y	y
RedHat EL5 2.6.18-164 i686 GNU (1)W	y	y(2)	y	y	y	y
RedHat EL5 2.6.18-164 i686 Intel W	n	y	n	y	y	n
RedHat EL5 2.6.18-164 i686 PGI W	n	y	n	y	y	n
RedHat EL5 2.6.18-164 x86_64 GNU(1)W	y	y(3)	y	y	y	y
RedHat EL5 2.6.18-164 x86_64 IntelW	n	y	n	y	y	n
RedHat EL5 2.6.18-164 x86_64 PGI W	n	y	n	y	y	y

SuSe Linux 2.6.16 SGI Altix ia64	C	y		y	y	y	y	y	y
RedHat EL4 2.6.18 Xeon Lustre	C	y		y	y	y	y	y	n
SuSe Linux 2.4.21 ia64 Intel	C	y		y	y	y	y	y	n
Cray XT3 2.0.62				y	y	y	y	y	n

Platform		Shared C libs	Shared F90 libs	Shared C++ libs	Thread- safe
Solaris2.10 32-bit		y	y	y	y
Solaris2.10 64-bit		y	y	y	y
Windows XP		y	y(4)	y	y
Windows XP x64		y	y(4)	y	y
Windows Vista		y	n	n	y
Mac OS X 10.5		y	n	y	n
AIX 5.3 32- and 64-bit		n	n	n	n
FreeBSD 6.3-STABLE 32&64 bit		y	y	y	y
RedHat EL5 2.6.18-164 i686 GNU (1)W	W	y	y(2)	y	y
RedHat EL5 2.6.18-164 i686 Intel	W	y	y	y	n
RedHat EL5 2.6.18-164 i686 PGI	W	y	y	y	n
RedHat EL5 2.6.18-164 x86_64 GNU(1)W	W	y	y	y	y
RedHat EL5 2.6.18-164 x86_64 Intel	W	y	y	y	n
RedHat EL5 2.6.18-164 x86_64 PGI	W	y	y	y	n
SuSe Linux 2.6.16 SGI Altix ia64	C	y			n
RedHat EL4 2.6.18 Xeon Lustre	C	y	y	y	n
SuSe Linux 2.4.21 ia64 Intel	C	y	y	y	n
Cray XT3 2.0.62		n	n	n	n

(1) Fortran compiled with g95.

(2) With PGI and Absoft compilers.

(3) With PGI compiler for Fortran.

(4) Using Visual Studio 2005 or Cygwin

Compiler versions for each platform are listed in the preceding "Platforms Tested" table.

#### Known Problems

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- \* Parallel mode in AIX will fail some of the testcheck\_version.sh tests where it treats "exit(134) the same as if process 0 had received an abort signal. This is fixed and will be available in the next release. AKC - 2009/11/3
- \* Some tests in tools/h5repack may fail in AIX systems when -q32 mode is used. The error is due to insufficient memory requested. Request a large amount of runtime memory by setting the following environment variable for more memory.  
LDR\_CNTRL=MAXDATA=0x20000000@DSA  
AKC - 2009/10/31
- \* The PathScale MPI implementation, accessing a Panasas file system, would cause H5Fcreate() with H5F\_ACC\_EXCL to fail even when the file is not existing. This is due to the MPI\_File\_open() call failing if the amode has the MPI\_MODE\_EXCL bit set. (See bug 1468 for details.) AKC - 2009/8/11
- \* Parallel tests failed with 16 processes with data inconsistency at testphdf5 / dataset\_readAll. Parallel tests also failed with 32 and 64 processes with collective abort of all ranks at t\_posix\_compliant / allwrite\_allread\_blocks with MPI IO. CMC - 2009/04/28
- \* There is a known issue in which HDF5 will change the timestamp on a file

simply by opening it with read/write permissions, even if the file is not modified in any way. This is due to the way in which HDF5 manages the file superblock. A fix is currently underway and should be included in the 1.8.4 release of HDF5. MAM - 2009/04/28

- \* For gcc v4.3 and v4.4, with production mode, if -O3 is used, H5Tinit.c would fail to compile. Actually bad H5Tinit.c is produced. If -O (same as -O1) is used, H5Tinit.c compiled okay but test/dt\_arith would fail. When -O0 (no optimization) is used, H5Tinit.c compile okay and all tests passed. Therefore, -O0 is imposed for v4.3 and v4.4 of gcc. AKC - 2009/04/20

- \* For Red Storm, a Cray XT3 system, the tools/h5ls/testh5ls.sh and tools/h5copy/testh5copy.sh will fail some of its sub-tests. These sub-tests are expected to fail and should exit with a non-zero code but the yod command does not propagate the exit code of the executables. Yod always returns 0 if it can launch the executable. The test suite shell expects a non-zero for this particular test, therefore it concludes the test has failed when it receives 0 from yod. Skip all the "failing" test for now by changing them as following.

```
===== Original tools/h5ls/testh5ls.sh =====
```

```
TOOLTEST tgroup-1.ls 1 -w80 -r -g tgroup.h5
```

```
===== Change to =====
```

```
echo SKIP TOOLTEST tgroup-1.ls 1 -w80 -r -g tgroup.h5
```

```
=====
```

```
===== Original tools/h5copy/testh5copy.sh =====
```

```
TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -v -s grp_dsets -d grp_rename
```

```
TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -v -s grp_dsets -d /grp_rename/grp_dsets
```

```
TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -vp -s /grp_dsets -d /E/F/grp_dsets
```

```
TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -vp -s /grp_nested -d /G/H/grp_nested
```

```
H5LSTEST $FILEOUT
```

```
===== Change to =====
```

```
echo SKIP TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -v -s grp_dsets -d grp_rename
```

```
echo SKIP TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -v -s grp_dsets -d
```

```
/grp_rename/grp_dsets
```

```
echo SKIP TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -vp -s /grp_dsets -d /E/F/grp_dsets
```

```
echo SKIP TOOLTEST_FAIL -i $TESTFILE -o $FILEOUT -vp -s /grp_nested -d
```

```
/G/H/grp_nested
```

```
echo SKIP H5LSTEST $FILEOUT
```

```
=====
```

```
AKC - 2008/11/10
```

- \* For Red Storm, a Cray XT3 system, the yod command sometimes gives the message, "yod allocation delayed for node recovery". This interferes with test suites that do not expect seeing this message. See the section of "Red Storm" in file INSTALL\_parallel for a way to deal with this problem. AKC - 2008/05/28

- \* On Intel 64 Linux cluster (RH 4, Linux 2.6.9) with Intel 10.0 compilers, use -mp -O1 compilation flags to build the libraries. A higher level of optimization causes failures in several HDF5 library tests.

- \* On mpich 1.2.5 and 1.2.6, if more than two processes contribute no IO and the application asks to do collective IO, we have found that when using 4 processors, a simple collective write will sometimes be hung. This can be verified with t\_mpi test under testpar.

\* A dataset created or rewritten with a v1.6.3 library or after cannot be read with the v1.6.2 library or before when the Fletcher32 EDC filter is enabled. There was a bug in the calculation of the Fletcher32 checksum in the library before v1.6.3; the checksum value was not consistent between big-endian and little-endian systems. This bug was fixed in Release 1.6.3. However, after fixing the bug, the checksum value was no longer the same as before on little-endian system. Library releases after 1.6.4 can still read datasets created or rewritten with an HDF5 library of v1.6.2 or before.  
SLU - 2005/6/30

\* On IBM AIX systems, parallel HDF5 mode will fail some tests with error messages like "INFO: 0031-XXX ...". This is from the command `poe`. Set the environment variable MP\_INFOLEVEL to 0 to minimize the messages and run the tests again.

The tests may fail with messages like "The socket name is already in use", but HDF5 does not use sockets. This failure is due to problems with the poe command trying to set up the debug socket. To resolve this problem, check to see whether there are many old /tmp/s.pedb.\* files staying around. These are sockets used by the poe command and left behind due to failed commands. First, ask your system administrator to clean them out. Lastly, request IBM to provide a means to run poe without the debug socket.

\* The --enable-static-exec configure flag will only statically link libraries if the static version of that library is present. If only the shared version of a library exists (i.e., most system libraries on Solaris, AIX, and Mac, for example, only have shared versions), the flag should still result in a successful compilation, but note that the installed executables will not be fully static. Thus, the only guarantee on these systems is that the executable is statically linked with just the HDF5 library.

\* There is also a configure error on Altix machines that incorrectly reports when a version of Szip without an encoder is being used.