HDF5 1.8.8

Version	HDF5 1.8.8
Release Date	2011-11-15
Download	/ftp/HDF5/releases/hdf5-1.8/hdf5-1.8.8/
Release Notes	Release Notes

Release Notes:

```
HDF5 version 1.8.8 released on 2011-11-15
================================================================================

INTRODUCTION
============

This document describes the differences between HDF5-1.8.7 and
HDF5 1.8.8, and contains information on the platforms tested and
known problems in HDF5-1.8.8.
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 1.8.8 source code, documentation, and additional materials
can be found on the HDF5 web page at:

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

The HDF5 1.8.8 release can be obtained from:

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

User documentation for 1.8.8 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 1.8.8 (current
release) versus Release 1.8.7":

     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


CONTENTS
========
```

- New Features
- Support for New Platforms, Languages, and Compilers
- Bug Fixes since HDF5-1.8.7
- Platforms Tested
- Supported Configuration Features Summary
- Known Problems

New Features
============

    Configuration

    - Added the --enable-fortran2003 flag to enable Fortran2003 support
      in the HDF5 Fortran library. The flag should be used along with the
      --enable-fortran flag and takes affect only when the Fortran compiler
      is Fortran2003 compliant. (EIP - 2011/11/14)
    - Added checks for clock_gettime and mach/mach_time.h to both configure and
      CMake. This will support the move from gettimeofday to clock_gettime's
      monotonic timer in the profiling code in a future release.
      (DER - 2011/10/12)

    Library

    - The Windows VFD code has been removed with the exception of the functions
      which set it (H5Pset_fapl_windows, for example). Setting the Windows
      VFD now really sets the SEC2 VFD. The WINDOWS_MAX_BUF and
      WINDOWS_USE_STDIO configuration options and #defines have also been
      removed. NOTE: Since the Windows VFD was a clone of the SEC2 VFD, this
      change should be transparent to users.
      (DER - 2011/10/12 - HDFFV-7740, HDFFV-7744)
    - H5Tcreate now supports the string type (fixed-length and variable-
      length). (SLU - 2011/05/20)

    Parallel Library

    - Added new H5Pget_mpio_actual_chunk_opt_mode and
      H5Pget_mpio_actual_io_mode API routines for querying whether/how
      a collective I/O operation completed. (QAK - 2011/10/12)

    Tools

    - None

    High-Level APIs

    - Added the following Fortran wrappers for the Dimension Scale APIs:
        h5dsset_scale_f
        h5dsattach_scale_f
        h5dsdetach_scale_f
        h5dsis_attached_f
        h5dsis_scale_f
        h5dsset_label_f
        h5dsget_label_f
        h5dsget_scale_name_f
        h5dsget_num_scales_f
      (EIP for SB - 2011/10/13 - HDFFV-3797)

```
    Fortran API
    -----------
    - The HDF5 Fortran library was enhanced to support the Fortran 2003 standard.
      The following features are available when the HDF5 library is configured
      using the --enable-fortran and --enable-fortran2003 configure flags AND
      if the Fortran compiler is Fortran 2003 compliant:

      - Subroutines overloaded with the C_PTR derived type:
          h5pget_f
          h5pget_fill_value_f
          h5pinsert_f
          h5pregister_f
          h5pset_f
          h5pset_fill_value_f
          h5rcreate_f
          h5rderefrence_f
          h5rget_name_f
          h5rget_obj_type_f
      - Subroutines overloaded with the C_PTR derived type
        and simplified signatures:
          h5aread_f
          h5awrite_f
          h5dread_f
          h5dwrite_f
      - New subroutines
          h5dvlen_reclaim_f
          h5literate_by_name_f
          h5literate_f
          h5ovisit_f
          h5tconvert_f
          h5pset_nbit_f
          h5pset_scaleoffset_f
      - Subroutines with additional optional parameters:
          h5pcreate_class_f
      (EIP - 2011/10/14)

    C++ API
    -------
    - None


Support for New Platforms, Languages, and Compilers
===================================================
    - None

Bug Fixes since HDF5-1.8.7
==========================

    Configuration
    -------------
    - Changed the size of H5_SIZEOF_OFF_T to 4 bytes (was 8) in the VMS
      h5pubconf.h based on the output of a test program.  (DER - 2011/10/12)
    - The Windows and VMS versions of H5pubconf.h were brought into sync with
      the linux/posix version. (DER - 2011/10/12)
    - Fixed a bug in the bin/trace Perl script where API functions
      that take a variable number of arguments were not processed for
      trace statement fixup. (DER - 2011/08/25)
    - The --enable-h5dump-packed-bits configure option has been removed.
      The h5dump code that this option conditionally enabled is now always
```

compiled into h5dump. Please refer to the h5dump reference manual for
usage of the packed bits feature. (MAM - 2011/06/23 - HDFFV-7592)
- Configure now uses the same flags and symbols in its tests that are
used to build the library. (DER - 2011/05/24)

Library

- Corrected the error when copying attributes between files which are using
different versions of the file format. (QAK - 2011/10/20 - HDFFV-7718)
- Corrected the error when loading local heaps from the file, which could
cause the size of the local heap's data block to increase dramatically.
(QAK - 2011/10/14 - HDFFV-7767)
- An application does not need to do H5O_move_msgs_forward() when writing
attributes. Tests were checked into the performance suite.
(VC - 2011/10/13 - HDFFV-7640)
- Fixed a bug that occurred when using H5Ocopy on a committed datatype
containing an attribute using that committed datatype.
(NAF - 2011/10/13 - HDFFV-5854)
- Added generic VFD I/O types to the SEC2 and log VFDs to ensure correct
I/O sizes (and remove compiler warnings) between Windows and true POSIX
systems. (DER - 2011/10/12)
- Corrected some Windows behavior in the SEC2 and log VFDs. This mainly
involved datatype correctness fixes, Windows API call error checks,
and adding the volume serial number to the VFD cmp functions.
(DER - 2011/10/12)
- Converted post-checks for the appropriate POSIX I/O sizes to pre-checks
in order to avoid platform-specific or undefined behavior.
(DER - 2011/10/12)
- #ifdef _WIN32 instances have been changed to #ifdef H5_HAVE_WIN32_API.
H5_HAVE_VISUAL_STUDIO checks have been added where necessary. This is in
CMake only as configure never sets _WIN32. (ADB - 2011/09/12)
- CLANG compiler with the options -fcatch-undefined-behavior and -ftrapv
discovered 3 problems in tests and tools' library:
  1. In dsets.c, left shifting an unsigned int for 32 bits or more
     caused undefined behavior.
  2. In dt_arith.c, the INIT_INTEGER macro definition has an overflow
     when the value is a negative minimal and is being subtracted from one.
  3. In tools/lib/h5tools_str.c, right shifting an int value for 32 bits
     or more caused undefined behavior.

  All the problems have been corrected. (SLU - 2011/09/02 - HDFFV-7674)
- H5Epush2() now has the correct trace functionality (this is related to the
bin/trace Perl script bug noted in the configure section).
(DER - 2011/08/25)
- Corrected mismatched function name typo of h5pget_dxpl_mpio_c and
h5pfill_value_defined_c. (AKC - 2011/08/22 - HDFFV-7641)
- Corrected an internal error in the library where objects that use committed
(named) datatypes and were accessed from two different file IDs could confuse
the two and cause erroneous failures. (QAK - 2011/07/18 - HDFFV-7638)
- In v1.6 of the library, there was an EOA for the whole MULTI file saved in the
super block. We took it out in v1.8 of the library because it's meaningless
for the MULTI file. v1.8 of the library saves the EOA for the metadata file
instead, but this caused a backward compatibility problem.
A v1.8 library couldn't open the file created with the v1.6 library. We
fixed the problem by checking the EOA value to detect the file
created with v1.6 library. (SLU - 2011/06/22)
- When a dataset had filters and reading data failed, the error message
didn't say which filter wasn't registered. It's fixed now. (SLU - 2011/06/03)

Parallel Library

```
----------------
- The Special Collective IO (IO when some processes do not contribute to the
  IO) and the Complex Derived Datatype MPI functionalities are no longer
  conditionally enabled in the library by configure. They are always
  enabled in order to take advantage of performance boosts from these
  behaviors. Older MPI implementations that do not allow for these
  functionalities can no longer by used by HDF5.
  (MAM - 2011/07/08 - HDFFV-7639).

Tools
-----
- h5diff: fixed segfault over non-comparable attribute with different
  dimention or rank, along with '-c' option to display details.
  (JKM - 2011/10/24 - HDFFV-7770)
- Fixed h5diff to display all the comparable objects and attributes
  regardless of detecting non-comparables. (JKM - 2011/09/16 - HDFFV-7693)
- Fixed h5repack to update the values of references(object and region) of
  attributes in h5repack for 1) references, 2) arrays of references,
  3) variable-length references, and 4) compound references.
  (PC - 2011/09/14 - HDFFV-5932)
- h5diff: fixed a segfault over a dataset with container types
  array and variable-length (vlen) along with multiple nested compound types.
  Example: compound->array->compound, compound->vlen->compound.
  (JKM - 2011/09/01 - HDFFV-7712)
- h5repack: added macro to handle a failure in H5Dread/write when memory
  allocation failed inside the library. (PC - 2011/08/19)
- Fixed h5jam to not to allow the specifying of an HDF5 formatted file as
  an input file for the -u (user block file) option. The original HDF5 file
  would not be accessible if this behavior was allowed.
  (JKM - 2011/08/19 - HDFFV-5941)
- Revised the command help pages of h5jam and h5unjam. The descriptions
  were not up to date and some were missing.
  (JKM - 2011/08/15 - HDFFV-7515)
- Fixed h5dump to correct the schema location:
  <hdf5:HDF5-File
  xmlns:hdf5="http://hdfgroup.org/HDF5/XML/schema/HDF5-File"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://hdfgroup.org/HDF5/XML/schema/HDF5-File
  http://www.hdfgroup.org/HDF5/XML/schema/HDF5-File.xsd">
  (ADB - 2011/08/10)
- h5repack: h5repack failed to copy a dataset if the layout is changed
  from chunked with unlimited dimensions to contiguous.
  (PC - 2011/07/15 - HDFFV-7649)
- Fixed h5diff: the "--delta" option considers two NaN of the same type
  are different. This is wrong based on the h5diff description in the
  Reference Manual. (PC - 2011/07/15 - HDFFV-7656)
- Fixed h5diff to display an instructive error message and exit with
  an instructive error message when mutually exclusive options
  (-d, -p and --use-system-epsilon) are used together.
  (JKM - 2011/07/07 - HDFFV-7600)
- Fixed h5dump so that it displays the first line of each element in correct
  position for multiple dimention array types. Before this fix,
  the first line of each element in an array was
  displayed after the last line of previous element without
  moving to the next line (+indentation).
  (JKM - 2011/06/15 - HDFFV-5878)
- Fixed h5dump so that it will display the correct value for
  H5T_STD_I8LE datasets on the Blue-gene system (ppc64, linux, Big-Endian,
  clustering). (AKC & JKM - 2011/05/12 - HDFFV-7594)
```

```
    - Fixed h5diff to compare a file to itself correctly. Previously h5diff
      reported either the files were different or not compatible in certain
      cases even when comparing a file to itself. This fix also improves
      performance when comparing the same target objects through verifying
      the object and file addresses before comparing the details
      in the objects. Examples of details are datasets and attributes.
      (XCAO & JKM - 2011/05/06 - HDFFV-5928)

    F90 API
    -------
    - Modified the h5open_f and h5close_f subroutines to not to call H5open
      and H5close correspondingly. While the H5open call just adds overhead,
      the H5close call called by a Fortran application shuts down the HDF5
      library. This makes the library inaccessible to the application.
      (EIP & SB - 2011/10/13 - HDFFV-915)
    - Fixed h5tget_tag_f where the length of the C string was used to
      repack the C string into the Fortran string. This lead to memory
      corruption in the calling program. (SB - 2011/07/26)
    - Added defined constants:
        H5T_ORDER_MIXED_F (HDFFV-2767)
        H5Z_SO_FLOAT_DSCALE_F
        H5Z_SO_FLOAT_ESCALE_F
        H5Z_SO_INT_F
        H5Z_SO_INT_MINBITS_DEFAULT_F
        H5O_TYPE_UNKNOWN_F
        H5O_TYPE_GROUP_F
        H5O_TYPE_DATASET_F
        H5O_TYPE_NAMED_DATATYPE_F
        H5O_TYPE_NTYPES_F

    C++ API
    ------
    - None

    High-Level APIs:
    ------
    - Fixed the H5LTdtype_to_text function.  It had some memory problems when
      dealing with some complicated data types. (SLU - 2011/10/19 - HDFFV-7701)
    - Fixed H5DSset_label seg faulting when retrieving the length of a
      dimension label that was not set. (SB - 2011/08/07 - HDFFV-7673)
    - Fixed a dimension scale bug where if you create a dimscale, attach two
      datasets to it, and then unattach them, you get an error if they are
      unattached in order, but no error if you unattach them in reverse order.
      (SB - 2011/06/07 - HDFFV-7605)

    Fortran High-Level APIs:
    ------
    - None


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

    AIX 5.3                     xlc 10.1.0.5
    (NASA G-ADA)                xlC 10.1.0.5
                                xlf90 12.1.0.6

    FreeBSD 8.2-STABLE i386     gcc 4.2.1 [FreeBSD] 20070719
```

```
(loyalty)                       g++ 4.2.1 [FreeBSD] 20070719
                                gcc 4.6.1 20110422
                                g++ 4.6.1 20110422
                                gfortran 4.6.1 20110422

FreeBSD 8.2-STABLE amd64        gcc 4.2.1 [FreeBSD] 20070719
(freedom)                       g++ 4.2.1 [FreeBSD] 20070719
                                gcc 4.6.1 20110422
                                g++ 4.6.1 20110422
                                gfortran 4.6.1 20110422

IBM Blue Gene/P                 bgxlc 9.0.0.9
(LLNL uDawn)                    bgxlf90 11.1.0.7
                                bgxlC 9.0.0.9

Linux 2.6.16.60-0.54.5-smp      Intel(R) C, C++, Fortran Compilers
x86_64                              Version 11.1 20090630
(INL Icestorm)

Linux 2.6.18-194.el5 x86_64     Intel(R) C, C++, Fortran Compilers
(INL Fission)                       Version 12.0.2 20110112

Linux 2.6.18-108chaos x86_64    Intel(R) C, C++, Fortran Compilers
(LLNL Aztec)                        Version 11.1 20090630

Linux 2.6.18-194.3.1.el5PAE     gcc (GCC) 4.1.2 and 4.4.2
#1 SMP i686 i686 i386           GNU Fortran (GCC) 4.1.2 20080704
(jam)                               (Red Hat 4.1.2-48) and 4.4.2
                                PGI C, Fortran, C++ 10.4-0 32-bit
                                PGI C, Fortran, C++ 10.6-0 32-bit
                                Intel(R) C Compiler for 32-bit
                                    applications, Version 11.1
                                Intel(R) C++ Compiler for 32-bit
                                    applications, Version 11.1
                                Intel(R) Fortran Compiler for 32-bit
                                    applications, Version 11.1
                                MPICH mpich2-1.3.1 compiled with
                                    gcc 4.1.2 and gfortran 4.1.2

Linux 2.6.18-238.12.1.el5       gcc 4.1.2 and 4.4.2
#1 SMP x86_64 GNU/Linux         GNU Fortran (GCC) 4.1.2 20080704
(koala)                             (Red Hat 4.1.2-46) and 4.4.2
                                    tested for both 32- and 64-bit binaries
                                Intel(R) C, C++, Fortran Compilers for
                                    applications running on Intel(R) 64,
                                    Version 11.1.
                                PGI C, Fortran, C++ Version 9.0-4
                                    for 64-bit target on x86-64
                                MPICH mpich2-1.3.1 compiled with
                                    gcc 4.1.2 and gfortran 4.1.2

SGI Altix UV                    Intel(R) C, Fortran Compilers
SGI ProPack 7 Linux                 Version 11.1 20100806
2.6.32.24-0.2.1.2230.2.PTF-     SGI MPT 2.02
default #1 SMP
(NCSA ember)

Dell NVIDIA Cluster             Intel(R) C, Fortran Compilers
Red Hat Enterprise Linux 6          Version 12.0.4 20110427
```

```
    2.6.32-131.4.1.el6.x86_64     mvapich2 1.7rc1-intel-12.0.4
    (NCSA forge)

    SunOS 5.10 32- and 64-bit     Sun C 5.11 SunOS_sparc 2010/08/13
                                  Sun Fortran 95 8.5 SunOS_sparc 2010/08/13
                                  Sun C++ 5.11 SunOS_sparc 2010/08/13

    Windows XP                    Visual Studio 2008 w/ Intel Fortran 10.1 (project
files)
                                  Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)
                                  Visual Studio 2010 (cmake)
                                  Cygwin(1.7.9 native gcc(4.5.3) compiler and
gfortran)

    Windows XP x64                Visual Studio 2008 w/ Intel Fortran 10.1 (project
files)
                                  Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)
                                  Visual Studio 2010 (cmake)
                                  Cygwin(1.7.9 native gcc(4.5.3) compiler and
gfortran)

    Windows Vista                 Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)

    Windows Vista x64             Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)

    Windows 7                     Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)

    Windows 7 x64                 Visual Studio 2008 w/ Intel Fortran 11.1 (cmake)

    Mac OS X 10.8.0 (Intel 64-bit) i686-apple-darwin10-gcc-4.2.1 (GCC) 4.2.1 (Apple
Inc. build 5666) (dot 3)
    Darwin Kernel Version 10.8.0  GNU Fortran (GCC) 4.6.1
                                  Intel C, C++ and Fortran compilers 12.1.0

    Mac OS X 10.8.0 (Intel 32-bit) i686-apple-darwin10-gcc-4.2.1 (GCC) 4.2.1 (Apple
Inc. build 5666) (dot 3)
    Darwin Kernel Version 10.8.0  GNU Fortran (GCC) version 4.6.1
          Intel C, C++ and Fortran compilers 12.1.0

    Fedora 12 2.6.32.16-150.fc12.ppc64 #1 SMP ppc64 GNU/Linux
                                  gcc (GCC) 4.4.4 20100630 (Red Hat 4.4.4-10)
                                  GNU Fortran (GCC) 4.4.4 20100630 (Red Hat 4.4.4-10)

    Debian6.0.3 2.6.32-5-686 #1 SMP i686 GNU/Linux
                                  gcc (Debian 4.4.5-8) 4.4.5
                                  GNU Fortran (Debian 4.4.5-8) 4.4.5

    Debian6.0.3 2.6.32-5-amd64 #1 SMP x86_64 GNU/Linux
                                  gcc (Debian 4.4.5-8) 4.4.5
                                  GNU Fortran (Debian 4.4.5-8) 4.4.5

    Fedora15 2.6.40.6-0.fc15.i686.PAE #1 SMP i686 i686 i386 GNU/Linux
                                  gcc (GCC) 4.6.1 20110908 (Red Hat 4.6.1-9)
                                  GNU Fortran (GCC) 4.6.1 20110908 (Red Hat 4.6.1-9)

    Fedora15 2.6.40.6-0.fc15.x86_64 #1 SMP x86_64 x86_64 x86_64 GNU/Linux
                                  gcc (GCC) 4.6.1 20110908 (Red Hat 4.6.1-9)
                                  GNU Fortran (GCC) 4.6.1 20110908 (Red Hat 4.6.1-9)
```

```
    SUSE 11.4 2.6.37.6-0.7-desktop #1 SMP PREEMPT i686 i686 i386 GNU/Linux
                                gcc (SUSE Linux) 4.5.1 20101208
                                GNU Fortran (SUSE Linux) 4.5.1 20101208

    SUSE 11.4 2.6.37.6-0.7-desktop #1 SMP PREEMPT x86_64 x86_64 x86_64 GNU/Linux
                                gcc (SUSE Linux) 4.5.1 20101208
                                GNU Fortran (SUSE Linux) 4.5.1 20101208

    Ubuntu 11.10 3.0.0-12-generic #20-Ubuntu SMP i686 GNU/Linux
                                gcc (Ubuntu/Linaro 4.6.1-9ubuntu3) 4.6.1
                                GNU Fortran (Ubuntu/Linaro 4.6.4-9ubuntu3) 4.6.1

    Ubuntu 11.10 3.0.0-12-generic #20-Ubuntu SMP x86_64 GNU/Linux
                                gcc (Ubuntu/Linaro 4.6.1-9ubuntu3) 4.6.1
                                GNU Fortran (Ubuntu/Linaro 4.6.1-9ubuntu3) 4.6.1

    OpenVMS Alpha 8.3           HP C V7.3-009
                                HP Fortran V8.2-104679-48H9K
                                HP C++ V7.3-009

    Cray Linux Environment (CLE)  PrgEnv-pgi 2.2.74
    hopper.nersc.gov            pgcc 11.7-0 64-bit target on x86-64 Linux -tp k8e
    franklin.nersc.gov          pgf90 11.7-0 64-bit target on x86-64 Linux -tp k8e
                                pgCC 11.7-0 64-bit target on x86-64 Linux -tp k8e

Tested Configuration Features Summary
=====================================

    In the tables below
          y   = tested
          n   = 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        y     y    y
Windows XP x64                            n        y(4)   n        y     y    y
Windows Vista                             n        y(4)   n        y     y    y
Windows Vista x64                         n        y(4)   n        y     y    y
OpenVMS Alpha                             n        y      n        y     y    n
Mac OS X 10.8 Intel 32-bit                n        y      n        y     y    y
Mac OS X 10.8 Intel 64-bit                n        y      n        y     y    y
AIX 5.3 32- and 64-bit                    n        y      n        y     y    y
FreeBSD 8.2-STABLE 32&64 bit              n        x      n        x     y    y
CentOS 5.5 Linux 2.6.18-194 i686 GNU (1)W  y        y(2)   y        y     y    y
CentOS 5.5 Linux 2.6.18-194 i686 Intel  W  n        y      n        y     y    n
CentOS 5.5 Linux 2.6.18-194 i686 PGI    W  n        y      n        y     y    n
CentOS 5.5 Linux 2.6.16 x86_64 GNU (1)  W  y        y(3)   y        y     y    y
CentOS 5.5 Linux 2.6.16 x86_64 Intel    W  n        y      n        y     y    n
CentOS 5.5 Linux 2.6.16 x86_64 PGI      W  n        y      n        y     y    y
Fedora 12 Linux 2.6.32.16-150.fc12.ppc64   n        y      n        y     y    y
SGI ProPack 7 Linux 2.6.32.24              y        y      y        y     y    y
```

Red Hat Enterprise Linux 6		y	y	y	y	y	y
CLE hopper.nersc.gov		y	y(3)	y	y	y	n
CLE franklin.nersc.gov		y	y(3)	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	n
Windows XP x64		y	y(4)	y	n
Windows Vista		y	y(4)	y	y
Windows Vista x64		y	y(4)	y	y
OpenVMS Alpha		n	n	n	n
Mac OS X 10.8 Intel 32-bit		y(5)	n	y	n
Mac OS X 10.8 Intel 64-bit		y(5)	n	y	n
AIX 5.3 32- and 64-bit		n	n	n	y
FreeBSD 8.2-STABLE 32&64 bit		y	x	x	y
CentOS 5.5 Linux 2.6.18-128 i686 GNU (1)	W	y	y(2)	y	y
CentOS 5.5 Linux 2.6.18-128 i686 Intel	W	y	y	y	n
CentOS 5.5 Linux 2.6.18-128 i686 PGI	W	y	y	y	n
CentOS 5.5 Linux 2.6.16 x86_64 GNU (1)	W	y	y	y	y
CentOS 5.5 Linux 2.6.16 x86_64 Intel	W	y	y	y	n
CentOS 5.5 Linux 2.6.16 x86_64 PGI	W	y	y	y	n
Fedora 12 Linux 2.6.32.16-150.fc12.ppc64		y	y	y	y
SGI ProPack 7 Linux 2.6.32.24		y	y	y	n
Red Hat Enterprise Linux 6		y	y	y	n
CLE hopper.nersc.gov		n	n	n	n
CLE franklin.nersc.gov		n	n	n	n

(1) Fortran compiled with gfortran.
(2) With PGI and Absoft compilers.
(3) With PGI compiler for Fortran.
(4) Using Visual Studio 2008 w/ Intel Fortran 10.1 (Cygwin shared libraries are not supported)
(5) C and C++ shared libraries will not be built when Fortran is enabled.

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

Known Problems

* The STDIO VFD does not work on some architectures, possibly due to 32/64 bit or large file issues. The basic STDIO VFD test is known to fail on 64-bit SunOS 5.10 on SPARC when built with -m64 and 32-bit OS X/Darwin 10.7.0. The STDIO VFD test has been disabled while we investigate and a fix should appear in a future release, possibly 1.8.9.
  (DER - 2011/10/14)

* h5diff can report inconsistent results when comparing datasets of enum type that contain invalid values. This is due to how enum types are handled in the library and will be addressed in the next release.
  (DER - 2011/10/14 - HDFFV-7527)

* The links test can fail under the stdio VFD due to some issues with external links. This will be investigated and fixed in a future release.
  (DER - 2011/10/14 - HDFFV-7768)

* After the shared library support was fixed for some bugs, it was discovered
  that "make prefix=XXX install" no longer works for shared libraries. It
  still works correctly for static libraries. Therefore, if you want to
  install the HDF5 shared libraries in a location such as /usr/local/hdf5,
  you need to specify the location via the --prefix option during configure
  time. E.g, ./configure --prefix=/usr/local/hdf5 ...
  (AKC - 2011/05/07 - HDFFV-7583)

* The parallel test, t_shapesame, in testpar/, may run for a long time and may
  be terminated by the alarm signal. If that happens, one can increase the
  alarm seconds (default is 1200 seconds = 20 minutes) by setting the
  environment variable, $HDF5_ALARM_SECONDS, to a larger value such as 3600
  (60 minutes). Note that the t_shapesame test may fail in some systems
  (see the "While working on the 1.8.6 release..." problem below). If
  it does, it will waste more time if $HDF5_ALARM_SECONDS is set
  to a larger value. (AKC - 2011/05/07)

* The C++ and FORTRAN bindings are not currently working on FreeBSD.
  (QAK - 2011/04/26)

* Shared Fortran libraries are not quite working on AIX. While they are
  generated when --enable-shared is specified, the fortran and hl/fortran
  tests fail. We are looking into the issue. HL and C++ shared libraries
  should now be working as intended, however. (MAM - 2011/04/20)

* The --with-mpe configure option does not work with Mpich2. (AKC - 2011/03/10)

* While working on the 1.8.6 release of HDF5, a bug was discovered that can
  occur when reading from a dataset in parallel shortly after it has been
  written to collectively. The issue was exposed by a new test in the parallel
  HDF5 test suite, but had existed before that. We believe the problem lies with
  certain MPI implementations and/or file systems.

  We have provided a pure MPI test program, as well as a standalone HDF5
  program, that can be used to determine if this is an issue on your system.
  They should be run across multiple nodes with a varying number of processes.
  These programs can be found at:
  http://www.hdfgroup.org/ftp/HDF5/examples/known_problems/
  (NAF - 2011/01/19)

* The library's test dt_arith.c showed a compiler's rounding problem on
  Cygwin when converting from unsigned long long to long double. The
  library's own conversion works fine. We defined a macro for Cygwin to
  skip this test until we can solve the problem.
  (SLU - 2010/05/05 - HDFFV-1264)

* All the VFL drivers aren't backward compatible. In H5FDpublic.h, the
  structure H5FD_class_t changed in 1.8. There is new parameter added to
  get_eoa and set_eoa callback functions. A new callback function
  get_type_map was added in. The public function H5FDrealloc was taken
  out in 1.8. The problem only happens when users define their own driver
  for 1.6 and try to plug in 1.8 library. Because there's only one user
  complaining about it, we (Elena, Quincey, and I) decided to leave it as
  it is (see bug report #1279). Quincey will make a plan for 1.10.
  (SLU - 2010/02/02)

* MinGW has a missing libstdc++.dll.a library file and will not successfully link
  C++ applications/tests. Do not use the enable-cxx configure option. Read all of
  the INSTALL_MINGW.txt file for all restrictions. (ADB - 2009/11/11)

```
* 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.
  (MAM - 2009/11/04)

* The PathScale MPI implementation, accessing a Panasas file system, would
  cause H5Fcreate() with H5F_ACC_EXCL to fail even when the file does not
  exist. This is due to the MPI_File_open() call failing if the mode has
  the MPI_MODE_EXCL bit set. (AKC - 2009/08/11 - HDFFV-988)

* 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)

* 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 to see 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 an 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 - 2005/06/30)

* 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.
(AKC - 2004/12/08)