# HDF5 Tools Documentation Set

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## Planning and design notes, etc.

(The following sketch describes potential work, not a firm design or a commitment to a timeline or deliverables. As appropriate, this sketch may be used to define homework tasks undertaken for the course "DITA: From Legacy to the Future.")

Current status

The HDF5 tools docs:

* Are currently limited to reference manual-style material for the command-line utilities distributed with the HDF5 Library and highly variable documentation for other tools.
* Are linked only from the docs index page and the reference manual; neither link is particularly prominent.
* Are a section of the reference manual, which is functionally an unrelated document, being otherwise targeted strictly at programmers.
* Are not designed or distributed as though any of them were intended for data-only users.
* Lack motivational and contextual information (Who would use what tool? What problem does each tool address?) and adequate examples.
* Make no distinction between a tool that would be a basic data user's primary tool and one that such a user will never need to investigate.

Goals

To create an HDF5 tools doc set that:

* Is free-standing.
  + On a level with either the HDF5 User's Guide that the HDF5 Reference Manual or with the entire HDF5 Library document set.
  + No user should have to know to go to the reference manual for this information.
  + It will contain motivational information (Why would I use this tool? What does this tool do?) and procedural information (How do I do this?).
* Contains material that is, per tool, appropriately targeted for:

All users Intro

Basic data-only users Primer, RM of just a handful of tools

Intensive data users User Guide 1, RM of larger handful

Data maintainers User Guide 2, RM of most tools

Casual programmers User Guide 3, RM of most tools

Full application developers User Guide 4, RM of all tools (except h5debug?)

and maintainers

HDF5 Library developers User Guide 4, RM of all tools

* In addition to the targeted information sets, a master set presenting all the information for all the tools will be readily available.
* A table such as presented in Appendix A should be prominent, possibly even on the first page a user sees.

## As related to DITA/XML/etc

A more functional "Tools" doc set is, indeed, an independent objective with long-term value. For the moment, however, this set of tasks forms a testbed for the study of DITA, XML, content reuse, single-sourcing, and related tools as they relate to improving HDF5 documentation in general. In this regard, the objective is to study and evaluate a new standard and related technologies that might be used with HDF5 docs; any usable documentation produced must be thought of as a valuable side effect (though we will make every effort to make any material produced usable).

Initial steps are tentative until the process is actually under way, but are anticipated to include the following:

* Identify elements of the existing tool reference manual material that are suitable for:
  + Reference manual-style only
  + User guide-style presentation only
  + Reference manual and user guide (content reuse)
* Attempt to structure the material accordingly (content flow), creating meaningful blocks of meaningful content.
* Port existing material to XML:
  + Reference manual-only material for each tool will be ported to one or more XML files per tool.
  + Reusable content will be structured in one XML file per reusable chunk. (For now, think of this as a topic. A topic is actually more defined than that, but it will do for the moment.)
* Write an introduction for the targeted versions of the reference manual. (Possibly starting with a section introducing all versions, providing all users with an overview, in part, to save someone from spending too much time in the wrong document. Then an introduction to the the specific version.)
* Create DITA map files that each build a reference manual suitable to each category of user.
* Create a Master Book that pulls in all material from an "available resources" point of view rather than as a publishable document.
* This will complete work with the existing content (assuming I've not missed something).

Subsequent steps would include the following:

* Identify additional needs and outline missing material.
* Create placeholder topic stubs.
* Expand the previously mentioned DITA maps and begin building DITA map files for "graduated" user guides.
* Add new stubs to Master Book.

The above will be modified and additional tasks will be added as work progresses.

Unanswered questions (current defaults in italic):

* Command-line utilities only or *all tools*?
  + Though HDFview documentation may be minimal, at least initially
* HDF5 tools only, *all HDF5-related tools*, or all tools (including HDF4)?
  + Thus H4toH5 command-line tool and library and the various HDF5 import and export tools are included
* Should this document set be seen as on a level with the user's guide and reference manual or on a level with the HDF5 Library document set?

Notes:

* Under "Contains material that...", some adjacent pairs of user types may have such similar needs that they form effectively a single category.
* Within a category, some users will want more information than others; we will try to provide a mechanism that makes it convenient for a user to either expand the scope of the presented information for a given tool or switch from the "targeted view" to the "full view" for that tool.
* Regarding the table in Appendix A:
  + All ratings are a first estimate.
  + The list of tools may be incomplete.
  + The Java, Fortran, and C++ interfaces are not classified as tools.

# Appendix A

## Tools and Their Applicability to Various Classes of Users

Table : HDF5 and HDF5-related tools distributed by The HDF Group are used differently by the various groups of HDF5 users. Furthermore, some tools are likely to be of no interest to some users. For example, data users who do not write their own applications are unlikely to ever have a need for compilation tools such as h5cc, h5fc, and h5c++, but these tools will be used heavily by other classes of users.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | User Level: | |  |  |  |  |
| Tool: | Basic Data User | Intensive Data User | Data Maintenance Team | Casual Programmer | Application Developer, or Maintainer | HDF5 Library or Driver Developer |
| HDFview | + | + | - | - | - | o |
| h5dump | + | + | + | + | + | + |
| h5ls | + | + | + | + | + | + |
| h5diff | + | + | + | + | + | + |
| h5repack | o | + | + | o | o |  |
| h5repart | + | + | o | o |  |  |
| h5jam | + | + | o | o |  |  |
| h5unjam |  | + | + | o | o |  |
| h5copy |  | + | + | o | o |  |
| h5mkgrp |  | + | + | o | o |  |
| h5stat |  | + | + | + | + | o |
| h5import |  | + | + | o | o |  |
| gif2h5 |  | + | + | o | o |  |
| h52gif |  | + | + | o | o |  |
| H4toH5 Library |  |  | - | - | - |  |
| h5toh4 |  |  | - | - | - |  |
| h4toh5 |  |  | - | - | - |  |
| h5perf |  |  |  |  | o | o |
| h5perf\_serial |  |  |  |  | o | o |
| h5redeploy |  |  | + | + | + | + |
| h5cc, h5pcc |  |  | + | + | + | + |
| h5fc, h5pfc |  |  | + | + | + | + |
| h5c++ |  |  | + | + | + | + |
| h5debug |  |  |  |  | o | + |

Key:

+ A primary tool for this user

- An occasional tool for this user

o A rarely-used tool for this user (possibly not used at all)

(blank) Unlikely to be of interest to this user