Guidelines for Naming HDF5 Tool Options

11/01/2010
The HDF Group

1   Introduction

In the past, The HDF Group has provided both short and long option names for HDF5 command-line tools. Some new features have recently been implemented with only a long option name, one example being 'h5diff --use-system-epsilon'.

The issue of naming tool options was discussed at the HDF5 developers' meeting on October 15, 2010, and the guidelines in this document were adopted.

2   Guidelines for naming tools options

2.1   General guidelines

- Names of current options will not be changed.

- It is recommended that the same feature use the same short and long names across tools. For example, any tool that offers the option of following symbolic links should use the option name '--follow-symlinks' for the feature; tools currently offering this option are h5diff and h5ls.

2.2   Short Option Style

Short option names are faster to type than long option names and thus easier to use on the command line. Short option name requirements are as follows:

- Short option names consist of a single dash followed by a single character, such as '-h' for help.

- Short option names are required for frequently used options and optional in other cases.

- Short option names are case sensitive, such as '-h' for help and '-H' for header in h5dump.

- The single letters of short options may be clumped together, as in 'h5ls -rld'. This must be supported in all tools, though the user is not required to use this feature. Clumping should not be used with an option that is passed an argument.

- Short options that take optional arguments take their arguments immediately following the option letter, *without any intervening white space*.

- When the options are separated, the argument for each option that requires an argument directly follows that option with a white space. Arguments should not be used with clumped options.

- Short names for options that are used with several HDF5 tools should, where possible, use the same characters as used by GNU tools, such as `gcc`. Examples of common HDF5 tool options include:

  - '`-h`' for help

  - '`-v`' for verbose

  - '`-o`' for output

  - '`-i`' for input

2.3 Long Option Style

Long options are meant to be intuitive and easy to remember, and their meanings are generally easier to discern, making scripts easier to interpret and maintain. Long option name recommendations and requirements are as follows:

- Each option has at least one *long* (or *mnemonic*) name starting with two consecutive dashes, for example, '`h5ls --data`'.

- Long option names are clearer than their corresponding short names.

- Long names are required for all options.

- It is recommended that long option names adhere to the structure of "--action-thing", though that is not mandatory if it does not fit the situation. "action" is a verb indicating what action to take; "thing" is a noun describing what is acted upon. Examples of this naming structure include '`--follow-symlinks`' and '`--exclude-path`'.

- Long option names are all lower case.

- Long options that require arguments take those arguments immediately following the option name. There are two ways to specify a mandatory argument; it can be separated from the option name by either an equal sign or white space.

- Optional arguments must always be introduced using an equal sign with no white space.

3 Background

See the original RFC for additional background:

https://www.hdfgroup.uiuc.edu/RFC/HDF5/tools/general/hdf5_tools_option_names.pdf