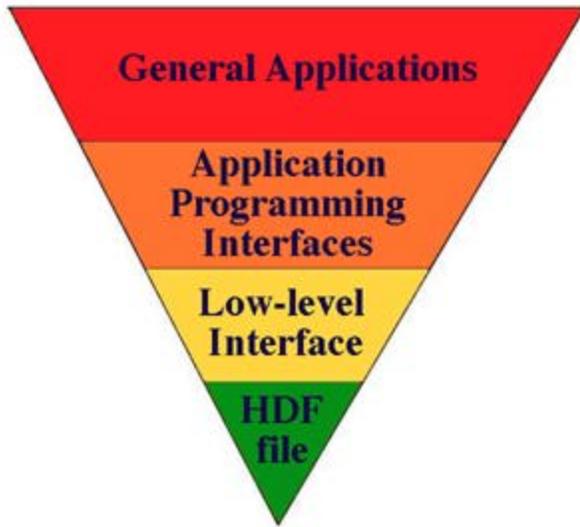


# What is HDF4?

## The HDF Levels of Interaction



At its lowest level, HDF is a physical file format for storing scientific data. At its highest level, HDF is a collection of utilities and applications for manipulating, viewing, and analyzing data in HDF files. Between these levels, HDF is a software library that provides high-level APIs and a low-level data interface.

### General Applications

At the highest level are *HDF command-line utilities*, *The HDF Group applications* that support data visualization and analysis, and a variety of *third-party applications*.

There are HDF command line utilities to:

- convert from one format to another (for eg. to and from JPEG/HDF)
- analyze and view HDF files (*hdp* being one of the more useful tools)
- manipulate HDF files

Please refer to the [Software Using HDF4](#) page for more information

### The Application Programming Interfaces

These include sets of routines for storing and accessing a specific type of data. Although each interface (Application Programming Interface or API) requires programming, all the low-level details can be ignored. These are available in both C and Fortran.

The data structure types that HDF supports are [Scientific Data Sets](#) (SD and DFSD APIs), [Raster Images](#) (General, 8-bit, 24-bit APIs), color palettes, [text entries](#), and [Vdatas](#) and [Vgroups](#).

### The Low-level Interface

This interface is reserved for software developers. It was designed for direct file I/O of data streams, error handling, memory management, and physical storage. It is essentially a software toolkit for skilled programmers who wish to make HDF do something more than what is currently available through the higher-level interfaces. Low-level routines are only available in C.

The routines that make up the lower-level interface and the APIs are available in the HDF Group's HDF libraries. The HDF utilities are included in The HDF Group's HDF distribution. Applications supported by The HDF Group, as well as applications contributed by members of the world-wide HDF user community are freely available on The HDF Group's ftp server.