

# Data Manipulation Software

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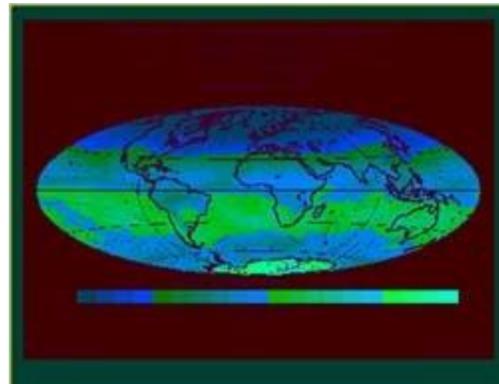
[Public Domain](#) | [Commercial Software](#) | [Suggested Reading](#) | [Native Format](#)

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The applications listed below will open a Hierarchical Data Format (HDF) file and display a browse image and/or data file information. Many of these software programs are available in the public domain. There are also commercial off the shelf (COTS) software products available.

At the NASA Langley Data Center, any data not in HDF is considered to be in a Native data format.

The HDF Group (THG) also maintains a list of [What Tools Use HDF](#). *SRB Image using Staylor Algorithm*



## Public Domain Software

### Software Contributions from HDF Users

[THG's FTP server](#) has a place for HDF users to post their software contributions. NCSA does not support any of this software, but they encourage users to contribute to this site and use what is currently available.

### view hdf

view hdf can select and subset variables from either Science Data Set (SDS) or vdata structures in an HDF file, render both two- and three-dimensional graphics, and plot geolocated data onto various world map projections. Other features include multiple variable plots, difference plots, and simple statistics. Filtered subsets and statistical results can be written to a file in ASCII format for use in other analysis programs. The view hdf tool is written in Interactive Data Language (IDL) and uses a graphical user interface to manipulate the data. The tool was developed on a UNIX platform and has been transported to SGI, Sun Solaris, HP, and DEC Alpha (running Digital Unix) workstations. [Get more information or download view hdf.](#)

## **hdfscan**

A software tool for visualization of data files, **hdfscan**, is now being distributed by NASA's Jet Propulsion Laboratory. hdfscan, which includes a User's Guide, is available for download free of charge from JPL, upon completion of a [license agreement](#). hdfscan software consists of two components - a core hdf file reading engine and a graphical user interface (GUI) built as a wrapper around the core engine. These have been designed and tested to run on Sun Solaris 7 and higher and SGI IRIX 6.5 environments.

## **misr view**

A software tool for visualization of MISR and AirMISR data files, **misr view**, is now being distributed by NASA's Jet Propulsion Laboratory. misr view is an IDL-based and graphical user interface-driven display and analysis tool for use with many types of MISR and AirMISR data. It is specifically designed for use with those MISR and AirMISR files that use the HDF-EOS "grid" interface. These include MISR L1B2 georectified (map-projected) radiance, MISR L1B3 radiometric cloud masks, all MISR Level 2 geophysical products, the MISR Ancillary Geographic Product, and AirMISR L1B2 georectified radiances. For MISR data, the user interface provides data selection for specified orbits, paths, or observation dates, and enables translation between these modes of identification. The interface to AirMISR data is simplified. The display and analysis tools include simultaneous display of several data planes through color assignment, contrast enhancement, data value query, image rotation, creation of stereo anaglyphs, zooming, and linked analysis and view windows.

misr view has been developed by the Visualization and Earth Science Applications Group of the Image Processing Applications and Development Section at the Jet Propulsion Laboratory. The latest version of [misr view](#), which includes a User's Guide, is available for download free of charge from JPL, upon completion of the misr view license agreement.

## **HDF-EOS to GIS Format (HEG) Conversion Tool**

Earth Observing System (EOS) Core System (ECS) Project Office developed the HDF-EOS to GIS Format (HEG) Conversion Tool because the standard format for EOS data is HDF-EOS and this format is not fully recognized by many GIS software packages.

The HDF-EOS to GIS Format (HEG) Conversion Tool provides conversion for HDF-EOS formatted files (granules). The tool converts HDF-EOS swath and grid data to HDF-EOS Grid, GeoTIFF, or to a generic binary format. The tool can be used to re-project data from its original format to other standard projections, to subset data and to mosaic adjacent granules together. Swath data can be converted to Grid data.

The HEG packages are available for Sun and SGI systems in 'tar' format, and a User's Guide in Microsoft Word is available. The tool uses Java Version 1.2. Download and [installation instructions for GeoTIFF tool](#).

## **HDFView**

HDFView is a Java-based tool for browsing and editing NCSA HDF4 and HDF5 files. HDFView allows users to browse through any HDF4 and HDF5 file; starting with a tree view of all top-level objects in an HDF file's hierarchy. HDFView allows a user to descend through the hierarchy and navigate among

the file's data objects. The content of a data object is loaded only when the object is selected, providing interactive and efficient access to HDF4 and HDF5 files. HDFView editing features allow a user to create, delete, and modify the value of HDF objects and attributes.

[HDFView program and download information.](#)

[HDF-EOS plug-in for HDFView](#) is available for SUN, SGI, LINUX, and WINDOWS platforms.

## **EOSView**

EOSView is a tool developed for the Earth Observing System (EOS) project to view files in the HDF-EOS data format. HDF-EOS is built using HDF and adds three data structures with associated geolocation information to those available with HDF. EOSView can be used to view HDF files as well as files using the HDF-EOS structures. It runs on Unix workstations. EOSView is available from the [HDF-EOS and Related Software download site](#).

## **SHARP**

[SHARP](#) is an IDL-based viewer for MODIS Airborne Simulator (MAS) image data. The user does not have to be familiar with HDF to use this program. It has a point-and-click interface and may be run on any system where IDL 5.0 or better is installed. Among this program's features: RGB image display, overlay of cloud mask results, ability to enhance/stretch image with B&W or color lookup tables, automatic scaling to reflectance or brightness temperature, and GIF or Postscript output. SHARP is freely available, and the author welcomes user input.

## **WebWinds**

The successor to LinkWinds is [WebWinds](#). Written in Java, WebWinds is platform-independent. WebWinds has the ability to present and manipulate 2 and 3 dimensional data in a variety of 1 and 2 dimensional display tools; can subset and subsample data on input or display output, making it possible to handle very large data sets; allows the simultaneous display and analysis of multiple data sets which may be totally unrelated; and is able to act as a Web browser helper application, making it possible to survey scientific data archives in interactive mode. WebWinds is currently in beta release, and is available for all major operating systems.

## **National Center for Supercomputing Applications (NCSA) Archived Applications**

NCSA archived applications are available via FTP. Please refer to the [NCSA README](#) prior to downloading.

### **• Import2HDF**

[NCSA Import2HDF](#) (for the Macintosh) is a tool that enables you to convert non-HDF files, such as FITS (Flexible Image Transport System), TIFF (Tagged Image File Format), GIF (Graphical Interchange Format), raw raster image and ASCII, to HDF files. Once the files are converted, you can utilize NCSA-developed software or other software that works with HDF format files. NCSA Import2HDF also allows you to change labels associated with elements of HDF files, display HDF file contents, display Raw Image Sets (RIS) in the format of color raster images, and display Scientific Data Sets (SDS) in spreadsheet fashion.

- **NCSA Collage**

[NCSA Collage](#) provides image display and analysis, color table editing, and spreadsheet display of floating-point numbers. In the presence of a network, this tool provides the capability to distribute most of these data analysis and visualization functions among a number of users. The software is available for Macintosh, X-Windows and PC Windows users.

- **NCSA Habanero**

The successor to NCSA Collage is [Habanero](#). Habanero is designed to be a multi-user, collaborative framework for sharing Java objects with colleagues on the Internet, regardless of physical location. Although Habanero is still in development, NCSA does have a release available to download. Habanero will be capable of distributing session information to a large number of participants. There are plans to add privacy and authentication features to the program, as well.

- **NCSA PC Show**

[NCSA PC Show](#) is a color-imaging application that displays 8-bit binary scientific data as color raster images on an IBM PC or compatible, with the Enhanced Graphics Adapter (EGA), Video Graphics Adapter (VGA), or Revolution 512 graphics card from Number Nine Computer (N09). NCSA PC Show can read raw raster, raw palette, or HDF files; map images according to a user-defined palette; display multiple images in sequences; animate multiple image sequences; and rotate the palette.

- **X Image**

[NCSA X Image](#) (for X Windows) is a color-imaging and data analysis tool that allows you to view and manipulate data values. X Image also allows you to read from HDF, raw raster and raw palette files; display actual data values in a spreadsheet form; display data values as full color Cartesian and polar images and as color contour and shaded data; and create XY graphs and color histograms. X Image also allows you to create and customize color palettes by "mixing" color components or to define individual colors by inverting, compressing, expanding, or rotating entries within the palette.

## Commercial Software

A [list of commercial software products](#) that are able to read HDF files is maintained by The HDF Group.

## Suggested Reading

- [Scientific Visualization Sites](#)
- [Graphics and Visualization Software at DKRZ](#)

## Native Format Data

At the NASA Langley Data Center, any data not in HDF is considered to be in a Native data format.

The Native data formats include binary and ascii. There are sample read software and documentation for all data in binary and for most data in ascii. Some sample read software is provided by the data provider, while other sample read software is developed at the Langley Data Center. The read software and documentation are available from the Data Set tables which are listed on the [Access Data page](#).