

Chapter 8. Directory Types and Naming

The Directory Naming standard defines the conventions for naming directories on a data volume. This chapter lists the standard directories established by PDS, plus the rules for forming subdirectory names and abbreviations.

8.1 Standard Directory Names

When any of the following directories are included on an archive product, the following standard directory naming conventions are used.

<i>Directory</i>	<i>Contents</i>
CATALOG	PDS catalog files
DOCUMENT	Documentation, supplementary and ancillary information to assist in understanding and using the data products
EXTRAS	“Value added” elements included by the data preparer, but outside the scope of the PDS archive requirements
GAZETTER	Tables of information about the geological features of a target
INDEX	Indices to assist in locating data of interest
LABEL	“Include” files which describe specific aspects of the data format and organization
SOFTWARE	Utilities, application programs, or subprograms used to access or process the data

The following standard directory names are recommended for use on archive volumes. Note that these directory names are reserved for the uses described below. That is, if they appear on an archive volume, they must contain the indicated information:

CALIB	Calibration files used in the original processing of the data, or needed to use the data
GEOMETRY	Files describing the observational geometry (e.g., SEDRs, SPICE kernels)
BROWSE	Reduced resolution versions of data products
DATA	Contains one or more subdirectories of data products. The DATA subdirectory is used to unclutter the root directory of a volume by providing a single entry point to multiple data subdirectories.

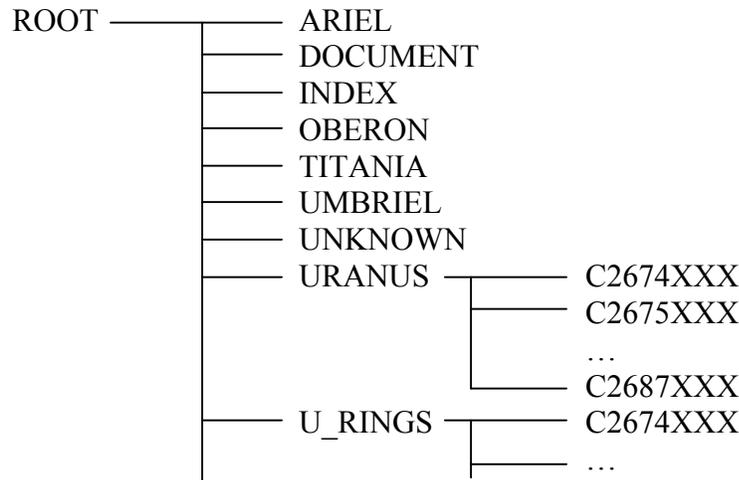
Note that some data sets may not contain all the components above and, as a result, do not need all of the directories listed. For example, many image data sets do not include geometry files and so do not need a GEOMETRY directory. See the *Volume Organization and Naming* chapter of this document for a list of required and optional subdirectories on any specific volume.

8.2 Formation of Directory Names

1. A directory name must consist of only uppercase alphanumeric characters and the underscore character (i.e., A-Z, 0-9, or “_”). No lowercase letters (i.e., a-z) or special characters (e.g., “#”, “&”, “*”) are allowed.
2. Directory names must comply with the ISO 9660 Level 2 standard and not exceed 31 characters in length. Users are encouraged to keep directory names as brief as practical in the interests of providing succinct file paths and easy to read directory listings. The total length of the directory path and file name must not exceed 255 characters.
3. The first letter of a directory name must be an alphabetic character, unless the directory name represents a year (e.g., 1984).
4. If numeric characters are used as part of the name (e.g., DIR1, DIR2, DIR3) the numeric part should be padded with leading zeros up to the maximum size of the numeric (DIR0001, DIR0002, DIR3267).
5. Directories which contain a range of similarly named files must be assigned directory names using the portion of the filename which encompasses all the files in the directory, with “X’s” used to indicate the range of values of actual filenames in the directory.

For example, the PDS Uranus Imaging CD-ROM disk contains image files that have filenames that correspond to SPACECRAFT_CLOCK_START_COUNT values. The directory that contains the image files ranging from C2674702.IMG through C2674959.IMG has the directory name C2674XXX.
6. Directory names must use full length terms whenever possible (e.g., SATURN, MAGELLAN, CRUISE, NORTH, DATA, SOFTWARE). Otherwise, directory names must be constructed from abbreviations of full-length names using the underscore character to separate abbreviated terms, if possible. The meaning of the directory name should be clear from the abbreviation and from the directory structure.

For example, the following directory structure can be found on the Voyager 2 Images of Uranus CD-ROM Volume 1:



In this case, it is clear from the context that the directory U_RINGS is the abbreviated form of URANUS_RINGS.

- High level directories that deal with data sets covering a range of planetary science disciplines or targets shall adhere to the following hierarchy:

A Planetary science directory:	PLANET
Planetary body subdirectories:	MERCURY, MOON, MARS, VENUS, COMET
Discipline subdirectories:	ATMOS, IONOSPHE, MAGNETOS, RING, SURFACE, and SATELLIT (Use satellite name if numerous files exist)

- The recommended SOFTWARE subdirectory naming convention is described in the *Volume Organization and Naming* chapter of this document. Either a platform-based model or an application-based model can be used in defining software subdirectories. In a platform-based model, the hardware platform, operating system and environment must be explicitly stated. If there is more than one operating system/environment supported they are addressed as subdirectories under the hardware directories. When there is only one, the subdirectory may be promoted to the hardware directory.

For example, if software for the PC for both DOS and Windows were present on the volume, the directories SOFTWARE/PC/DOS and SOFTWARE/PC/WIN would exist. If only DOS software were present, the directory would be SOFTWARE/PCDOS.

8.3 Path Formation Standard

The PDS standard for path names is based on Level 2 of the ISO 9660 international standard. A pathname may consist of up to eight directory levels. Each directory name is limited to 31 characters; the forward-slash character (“/”) is used as the separator in path names. The total length of the directory path and file name must not exceed 255 characters. Path names typically appear on PDS volumes as data in index tables for locating specific files on an archive volume. They may also appear as values in a limited number of keywords (e.g., FILE_SPECIFICATION_NAME, PATH_NAME, and LOGICAL_VOLUME_PATH_NAME).

The following are examples of valid values for the keywords listed above:

TG15NXXX/TG15N1XX/TG15N12X/	identifies the location of the directory TG15N12X at the third level below the top level of an archive volume.
DOCUMENT/	identifies a DOCUMENT directory within the root directory.

Note: The leading slash is omitted because these are relative paths. The trailing slash is included so that concatenation of PATH_NAME and FILE_NAME will yield the full file specification. See the *File Specification and Naming* chapter of this document for more information.

Previous PDS standards allowed the use of the DEC VMS syntax for path names. While PDS support for this format continues to exist, it is recommended that all future volumes use the UNIX syntax instead.

8.4 Tape Volumes

When magnetic tape is the archive medium, a disk directory structure cannot be used because the medium does not support multi-level directories. In this case, files must be stored sequentially.

A directory structure for the volume must be designed in any case, so that when the data are transferred to a medium that supports hierarchical file management they can be placed into an appropriate directory structure. A DIRECTORY object must be included with each tape volume within the VOLUME object. This object is then used to describe how the sequential files should be loaded into a hierarchical structure.

8.5 Exceptions to These Standards

In certain cases, the archive medium used to store the data, the hardware used to produce the data set, or the software operating on the data may impose restrictions on directory names and organization. In these cases, consult a PDS data engineer for guidance in designing the archive volume structure.