Purpose

File PDBRRS contains the data for River, reservoir and snow (RRS) data
types.

RRS data are stored by observation with two or three values per
observation, depending on the data type. Each set of observations has
a header containing information about the data and station.

The RRS data records are stored in two areas.

The primary record area is stored in the PDBRRS file and contains data
values for the number of observations specified when the station was
defined.

The free pool record area is stored in one of the daily data files.
The free pool records are stored in a different file than the primary
records in order to minimize disk accesses. The free pool records are
used to expand a set of observations if a station reports more
frequently than usual and still retain the minimum period of observed
data specified for the station.

The data that is stored in the free pool records is for the oldest
days in the period of record for the station.

Description

ATTRIBUTES: fixed length 64 byte binary records

RECORD STRUCTURE:

Variable	Type	Dimension	Word Position	Description
The first record is the File Control Record.				
MAXREC	I*4	1	1	Maximum primary records
NEXTRC	I*4	1	2	Next available primary record
FREE1	I*4	1	3	Record number of first free pool record
FREEN	I*4	1	4	Record number of next available free pool record
FREEL	I*4	1	5	Number of words in a free pool record
LUFREE	I*4	1	6	Ordinal number of the daily data file in which the free

Variable	Type	Dimension	Word Position	Description
				pool data are stored
MAXFRE	I*4	1	7	Maximum free pool records
MAXPD	I*4	1	8	Length of longest observation period
NUMSET	I*4	1	9	Number of daily and RRS stations defined
INUSE	I*4	1	10	In-use indicator
USER	A8	1	11	User name

The next group of records are the RRS Data Records. 1/

The contents of the RRS primary data record is as follows:

Variable	Type	Dimension	Word Position	Description
NWRDS	I*4	1	1	Number of words in RRS primary record (header, statistics and data)
STAID	A8	1	2-3	Station identifier
NUMID	I*4	1	4	Station number
DTYPE	A4	1	5	Data type
MINDAY	A4	1	6	Minimum number of days of observed data to be retained
MAXOBS	I*4	1	7	Maximum number of observations that can be stored in primary space
NUMOBS	I*4	1	8	Number of observations in primary space
EVAL	I*4	1	9	Word position of earliest value
REVAL	I*4	1	10	Not used
LVAL	I*4	1	11	Word position of latest value
RLVAL	I*4	1	12	Not used
IFREC1	I*4	1	13	Record number of first free pool record (zero if none)
NVALS	I*4	1	14	Number of values per observation

Variable	Type	Dimension	Word Position	Description
FTIME	I*4	1	15	Time of first data free pool record
LSTHR	I*4	1	16	Julian hour of last value of observed data
NSTAT	I*4	1	17	Number of words of statistics
BDATE	I*4	1	18	Julian hour statistics begin
RDATE	I*4	1	19	Julian date of most recent report
NTOTAL	I*4	1	20	Total number of reports
RPTLG	R*4	1	21	Largest value reported
LDATE	R*4	1	22	Julian date of largest value reported
RPT2LG	R*4	1	23	Second largest value reported
L2DATE	I*4	1	24	Julian date of second largest value reported
RPTSM	R*4	1	25	Julian date of smallest value reported
SDATE	I*4	1	26	Julian date of smallest reported
RPT2SM	I*4	1	27	Second smallest value reported
S2DATE	I*4	1	28	Julian date of second smallest value reported
DATA	I*4,R*4	?	29+	See note 2/

The free pool records are a continuation of the data part of the RRS record. The content of the RRS free pool data record is as follows:

Variable	Type	Dimension	Word Position	Description
NXTREC	I*4	1	1	Pointer to next available free pool record (zero if none)
NVALS	I*4	1	2	Number of observations in this record
DATA	I*4,R*4	NVALS	3+	See note 2/

Notes:

1/ The RRS data records consist of a header followed by the data. The

user determines a typical number of values for the maximum
reporting period and this amount of space is reserved when a
station is defined. If the stations report more frequently and
thus require more records to keep the minimum reporting period of
observed data, these records are taken from the free pool record
area. When a free record is no longer needed, it is reset to
unused. If no more free records can be found from the pointers, a
search will be made for unused records to find one that has been
returned to the pool. The word FREEL points to the last unused
record found to reduce the number of records that must be searched.

Access to these RRS data records is through one of two methods.
The first method is to read the next sequential record in the file.
If this is not the desired RRS station, the routines use a hashing
algorithm to read the index record to get the record number of the
desired station.

2/ If the data is an instantaneous value, the observation time and the
    data values are stored.

    If the data is a mean value, the observation time, the data value
    and the data time interval are stored.

    The observation time is stored as Julian minutes.