

CDF

Java Reference Manual

July 25, 2005

Space Physics Data Facility

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gsfc.nssdc.cdf

Class Attribute

java.lang.Object

└─ **gsfc.nssdc.cdf.Attribute****All Implemented Interfaces:**[CDFConstants](#), [CDFObject](#)

public class **Attribute**

extends java.lang.Object

implements [CDFConstants](#), [CDFObject](#)

This class contains the methods that are associated with either global or variable attributes.

See Also:[CDF](#), [CDFException](#), [Entry](#), [Variable](#)

Field Summary

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[zVAR SPARSERECORDS](#) , [zVARs CACHESIZE](#) , [zVARs MAXREC](#) ,
[zVARs RECDATA](#) , [zVARs RECNUMBER](#)

Method Summary

protected void [addEntry](#)([Entry](#) newEntry, int id)

Adds an attribute entry.

protected void	addNullEntry () The CDF class uses this method to put a placeholder on the list of entries when a new variable is added to the list of variables.
static Attribute	create (CDF myCDF, java.lang.String name, long scope) Creates a new attribute in the given CDF.
void	delete () Deletes this attribute.
void	deleteEntry (long entryID) Deletes an attribute entry for the given entry number.
void	deleteEntry (Variable var) Deletes the attribute entry for the given variable.
java.util. Vector	getEntries () Gets all the entries defined for this attribute.
Entry	getEntry (long entryID) Gets the attribute entry for the given entry number.
Entry	getEntry (Variable var) Gets the attribute entry for the given variable.
long	getEntryID (Entry entry) Gets the entry id for the given entry.
long	getID () Gets the attribute ID of this attribute.
long	getMaxEntryNumber () Gets the largest Entry number for this attribute.
CDF	getMyCDF () Gets the CDF object to which this attribute belongs.
java.lang. String	getName () Gets the name of this attribute.
long	getNumEntries () Gets the number of entries in this attribute.
long	getScope () Gets the scope of this attribute.
protected void	removeEntry (Entry oldEntry) Removes the entry that is passed to this method.

protected void	removeEntry (int id) The CDF class uses this method to remove entries for variables that have been deleted.
void	rename (java.lang.String newName) Renames the current attribute.
protected static Attribute	retrieve (CDF myCDF, long id) Retrieve an existing attribute by id number from the given CDF.
protected void	select () Selects this attribute.
java.lang.String	toString () Gets the name of this attribute.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Method Detail

retrieve

```
protected static final Attribute retrieve(CDF myCDF,
                                             long id)
    throws CDFException
```

Retrieve an existing attribute by id number from the given CDF.

Note: The user should never have to call this directly as this is done when creating an instance of a CDF.

Parameters:

myCDF - CDF from which to retrieve the attribute
id - Attribute id number to search for

Returns:

An attribute that corresponds to the passed-in attribute id

Throws:

[CDFException](#) - If an error has occurred in retrieving the requested attribute.

create

```
public static Attribute create(CDF myCDF,  
                               java.lang.String name,  
                               long scope)  
    throws CDFException
```

Creates a new attribute in the given CDF. Attributes and attribute entries are used to describe information about a CDF file and the variables in the file. Any number of attributes may be stored in a CDF file.

The following example creates a global attribute called 'Project' and a variable attribute called 'VALIDMIN':

```
Attribute project, validMin;
```

```
project = Attribute.create(cdf, "Project", GLOBAL_SCOPE);  
validMin = Attribute.create(cdf, "VALIDMIN",  
VARIABLE_SCOPE);
```

Parameters:

myCDF - the CDF object to which this attribute belongs

name - the name of the attribute to be created

scope - the attribute's scope - it should be either GLOBAL_SCOPE or VARIABLE_SCOPE

Throws:

[CDFException](#) - if a problem occurred in creating an attribute

delete

```
public void delete()  
    throws CDFException
```

Deletes this attribute.

Note: When an attribute is deleted all the entries for attribute are deleted as well. Also, all attributes that follow the deleted attribute will be renumbered immediately (their IDs will be decremented by one). This can cause confusion when using a loop to delete attributes. The following is incorrect and will result in every other attribute being deleted:

```
Vector attrs = cdf.getAttributes();  
int n = attrs.size();  
for (int i = 0; i < n; i++)  
    ((Attribute)attrs.elementAt(i)).delete();
```

Two possible workarounds are:

```
Vector attrs = cdf.getAttributes();  
int n = attrs.size();  
for (int i = n-1; i >= 0; i--)  
    ((Attribute)attrs.elementAt(i)).delete();
```

and

```
Vector attrs = cdf.getAttributes();  
int n = attrs.size();  
for (int i = 0; i < n; i++)  
    ((Attribute)attrs.elementAt(0)).delete();
```

Specified by:

[delete](#) in interface [CDFObject](#)

Throws:

[CDFException](#) - if there is a problem deleting the attribute

getEntry

```
public Entry getEntry(long entryID)
    throws CDFException
```

Gets the attribute entry for the given entry number.

The following example retrieves the first entry of the global attribute 'project'. Please note that a global attribute can have multiple entries (whereas, a variable attribute has only one entry for a particular attribute), and attribute id starts at 0, not 1.

```
Entry tEntry = project.getEntry(0L)
```

Parameters:

entryID - the entry number from which an attribute entry is retrieved

Throws:

[CDFException](#) - if an error occurred getting an entry (i.e. invalid entryID, no attribute entry for entryID)

getEntry

```
public Entry getEntry(Variable var)
    throws CDFException
```

Gets the attribute entry for the given variable.

The following example retrieves the 'longitude' variable entry associate with the attribute 'validMin':

```
vEntry = validMin.getEntry(longitude);
```

Parameters:

var - the variable from which an attribute entry is retrieved

Throws:

[CDFException](#) - if an error occurred getting a variable attribute entry (e.g. non-existent

variable, no attribute entry for this variable, etc.)

addEntry

```
protected final void addEntry(Entry newEntry,  
                                int id)
```

Adds an attribute entry. The Entry class uses this to establish the communication between the new entry and the attribute.

Parameters:

`newEntry` - the entry to be added

`id` - the entry id for the new entry being added

removeEntry

```
protected final void removeEntry(Entry oldEntry)
```

Removes the entry that is passed to this method. The Entry class uses this to break the connection between the Attribute and the Entry upon Entry deletion

Parameters:

`oldEntry` - the entry to be removed

removeEntry

```
protected final void removeEntry(int id)
```

The CDF class uses this method to remove entries for variables that have been deleted.

Parameters:

`id` - the id of the entry to be removed

addNullEntry

```
protected final void addNullEntry()
```

The CDF class uses this method to put a placeholder on the list of entries when a new variable is added to the list of variables. For example, if there are 8 variables, then there must be 8 entries.

deleteEntry

```
public void deleteEntry(long entryID)  
    throws CDFException
```

Deletes an attribute entry for the given entry number.

The following example deletes the first and second entries of the global attribute 'Project':

```
project.deleteEntry(0L);  
project.deleteEntry(1L);
```

The following example deletes the 'longitude' variable entry associated with the attribute 'validMin':

```
validMin.deleteEntry(longitude.getID());
```

Parameters:

entryID - the ID of the entry to be deleted

Throws:

[CDFException](#) - if there was a problem deleting the entry

deleteEntry

```
public void deleteEntry(Variable var)
```

throws [CDFException](#)

Deletes the attribute entry for the given variable.

The following example deletes the 'longitude' variable entry associated with the attribute 'validMin':

```
validMin.deleteEntry(longitude);
```

Parameters:

var - the variable from which the attribute entry is deleted

Throws:

[CDFException](#) - if there was a problem deleting the entry

getEntries

```
public java.util.Vector getEntries()
```

Gets all the entries defined for this attribute. A global attribute can have multiple entries. Whereas, a variable attribute has only one entry for a particular attribute.

Returns:

all the entries (one or more) defined for a global attribute or a variable entry for this attribute

getEntryID

```
public long getEntryID(Entry entry)
```

Gets the entry id for the given entry.

Parameters:

entry - the entry from which an entry id is retrieved

Returns:

the entry id for the given entry

rename

```
public void rename(java.lang.String newName)  
    throws CDFException
```

Renames the current attribute.

Specified by:

[rename](#) in interface [CDFObject](#)

Parameters:

newName - the new attribute name

Throws:

[CDFException](#) - if there was a problem renaming the attribute

select

```
protected final void select()  
    throws CDFException
```

Selects this attribute. There is no need to build the entire select cmd vector since this is handled in the JNI native method in `cdfNativeLibrary.c`.

Throws:

[CDFException](#) - if there was a problem in selecting the current attribute

getNumEntries

```
public long getNumEntries()
```

Gets the number of entries in this attribute.

Returns:

the number of entries in this attribute

getMaxEntryNumber

```
public long getMaxEntryNumber()
```

Gets the largest Entry number for this attribute.

Returns:

the largest Entry number for this attribute

getID

```
public long getID()
```

Gets the attribute ID of this attribute.

Returns:

the attribute id of this attribute

getMyCDF

```
public CDF getMyCDF()
```

Gets the CDF object to which this attribute belongs.

Returns:

the CDF object to which this attribute belongs

getName

```
public java.lang.String getName()
```

Gets the name of this attribute.

Specified by:

[getName](#) in interface [CDFObject](#)

Returns:

the name of this attribute

toString

```
public java.lang.String toString()
```

Gets the name of this attribute.

Returns:

the name of this attribute

getScope

```
public long getScope()
```

Gets the scope of this attribute.

Returns:

If the attribute is a global attribute, GLOBAL_SCOPE is returned. If the attribute is a variable attribute, VARIABLE_SCOPE is returned.

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gsfc.nssdc.cdf

Class CDF

java.lang.Object

└─ **gsfc.nssdc.cdf.CDF****All Implemented Interfaces:**[CDFConstants](#), [CDFObject](#)public class **CDF**

extends java.lang.Object

implements [CDFObject](#), [CDFConstants](#)

The CDF class is the main class used to interact with a CDF file.

Notes:

- All files are placed in zMODE 2 upon opening or creation
- Variable attributes are handled slightly differently from C.
 - Each variable has a java.util.Vector of attributes.
 - This vector contains only those vAttributes that have a z entry for this variable.
 - Therefore, the index for a given variable Attribute may not be the same for another variable.

Supported dataTypes and their mappings

CDF dataType	Java dataType	Read/Write
CDF_BYTE	java.lang.Byte	Y/Y
CDF_INT1	java.lang.Byte	Y/Y
CDF_UINT1	java.lang.Short	Y/Y
CDF_INT2	java.lang.Short	Y/Y
CDF_UINT2	java.lang.Integer	Y/Y

CDF_INT4	java.lang.Integer	Y/Y
CDF_UINT4	java.lang.Long	Y/Y
CDF_FLOAT	java.lang.Float	Y/Y
CDF_REAL4	java.lang.Float	Y/Y
CDF_DOUBLE	java.lang.Double	Y/Y
CDF_REAL8	java.lang.Double	Y/Y
CDF_CHAR	java.lang.String	Y/Y
CDF_UCHAR	java.lang.String	Y/Y

See Also:

[Attribute](#), [CDFException](#), [Variable](#)

Field Summary

Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
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[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),

[CDF ACCESS](#) , [CDF ATTR NAME LEN](#) , [CDF BYTE](#) , [CDF CACHESIZE](#) , [CDF CHAR](#) ,
[CDF CLOSE ERROR](#) , [CDF COMPRESSION](#) , [CDF COPYRIGHT](#) ,
[CDF COPYRIGHT LEN](#) , [CDF CREATE ERROR](#) , [CDF DECODING](#) ,
[CDF DELETE ERROR](#) , [CDF DOUBLE](#) , [CDF ENCODING](#) , [CDF EPOCH](#) , [CDF EPOCH16](#) ,
[CDF EXISTS](#) , [CDF FLOAT](#) , [CDF FORMAT](#) , [CDF INCREMENT](#) , [CDF INFO](#) ,
[CDF INT1](#) , [CDF INT2](#) , [CDF INT4](#) , [CDF INTERNAL ERROR](#) , [CDF MAJORITY](#) ,
[CDF MAX DIMS](#) , [CDF MAX PARMS](#) , [CDF MIN DIMS](#) , [CDF NAME](#) ,
[CDF NAME TRUNC](#) , [CDF NEGtoPOSfp0 MODE](#) , [CDF NUMATTRS](#) ,
[CDF NUMgATTRS](#) , [CDF NUMrVARS](#) , [CDF NUMvATTRS](#) , [CDF NUMzVARS](#) ,
[CDF OK](#) , [CDF OPEN ERROR](#) , [CDF PATHNAME LEN](#) , [CDF READ ERROR](#) ,
[CDF READONLY MODE](#) , [CDF REAL4](#) , [CDF REAL8](#) , [CDF RELEASE](#) ,
[CDF SCRATCHDIR](#) , [CDF STATUS](#) , [CDF STATUSTEXT LEN](#) , [CDF UCHAR](#) ,
[CDF UINT1](#) , [CDF UINT2](#) , [CDF UINT4](#) , [CDF VAR NAME LEN](#) , [CDF VERSION](#) ,
[CDF WARN](#) , [CDF WRITE ERROR](#) , [CDF zMODE](#) , [CDFwithSTATS](#) , [CLOSE](#) ,
[COLUMN MAJOR](#) , [COMPRESS CACHESIZE](#) , [COMPRESSION ERROR](#) , [CONFIRM](#) ,
[CORRUPTED V2 CDF](#) , [CORRUPTED V3 CDF](#) , [CREATE](#) , [CURgENTRY EXISTENCE](#) ,
[CURrENTRY EXISTENCE](#) , [CURzENTRY EXISTENCE](#) , [DATATYPE MISMATCH](#) ,
[DATATYPE SIZE](#) , [DECOMPRESSION ERROR](#) , [DECSTATION DECODING](#) ,
[DECSTATION ENCODING](#) , [DEFAULT BYTE PADVALUE](#) , [DEFAULT CHAR PADVALUE](#) ,
[DEFAULT DOUBLE PADVALUE](#) , [DEFAULT EPOCH PADVALUE](#) ,
[DEFAULT FLOAT PADVALUE](#) , [DEFAULT INT1 PADVALUE](#) ,
[DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,
[DEFAULT REAL4 PADVALUE](#) , [DEFAULT REAL8 PADVALUE](#) ,
[DEFAULT UCHAR PADVALUE](#) , [DEFAULT UINT1 PADVALUE](#) ,
[DEFAULT UINT2 PADVALUE](#) , [DEFAULT UINT4 PADVALUE](#) , [DELETE](#) ,
[DID NOT COMPRESS](#) , [EMPTY COMPRESSED CDF](#) , [END OF VAR](#) ,
[EPOCH STRING LEN](#) , [EPOCH STRING LEN EXTEND](#) , [EPOCH1 STRING LEN](#) ,
[EPOCH1 STRING LEN EXTEND](#) , [EPOCH2 STRING LEN](#) ,
[EPOCH2 STRING LEN EXTEND](#) , [EPOCH3 STRING LEN](#) ,
[EPOCH3 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,
[FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY DATA](#) , [gENTRY DATASPEC](#) ,
[gENTRY DATATYPE](#) , [gENTRY EXISTENCE](#) , [gENTRY NUMELEMS](#) , [GET](#) ,
[GLOBAL SCOPE](#) , [GZIP COMPRESSION](#) , [HOST DECODING](#) , [HOST ENCODING](#) ,
[HP DECODING](#) , [HP ENCODING](#) , [HUFF COMPRESSION](#) , [IBM PC OVERFLOW](#) ,
[IBMPC DECODING](#) , [IBMPC ENCODING](#) , [IBMRS DECODING](#) , [IBMRS ENCODING](#) ,
[ILLEGAL EPOCH FIELD](#) , [ILLEGAL EPOCH VALUE](#) , [ILLEGAL FOR SCOPE](#) ,
[ILLEGAL IN zMODE](#) , [ILLEGAL ON V1 CDF](#) , [LIB COPYRIGHT](#) , [LIB INCREMENT](#) ,
[LIB RELEASE](#) , [LIB subINCREMENT](#) , [LIB VERSION](#) , [MAC DECODING](#) ,

[MAC_ENCODING](#), [MULTI_FILE](#), [MULTI_FILE_FORMAT](#), [NA_FOR_VARIABLE](#),
[NEGATIVE_FP_ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK_DECODING](#),
[NETWORK_ENCODING](#), [NeXT_DECODING](#), [NeXT_ENCODING](#), [NO_ATTR_SELECTED](#),
[NO_CDF_SELECTED](#), [NO_COMPRESSION](#), [NO_DELETE_ACCESS](#),
[NO_ENTRY_SELECTED](#), [NO_MORE_ACCESS](#), [NO_PADVALUE_SPECIFIED](#),
[NO_SPARSEARRAYS](#), [NO_SPARSERECORDS](#), [NO_STATUS_SELECTED](#), [NO_SUCH_ATTR](#),
[NO_SUCH_CDF](#), [NO_SUCH_ENTRY](#), [NO_SUCH_RECORD](#), [NO_SUCH_VAR](#),
[NO_VAR_SELECTED](#), [NO_VARS_IN_CDF](#), [NO_WRITE_ACCESS](#), [NOT_A_CDF](#),
[NOT_A_CDF_OR_NOT_SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#),
[OPTIMAL_ENCODING_TREES](#), [PAD_SPARSERECORDS](#),
[PRECEEDING_RECORDS_ALLOCATED](#), [PREV_SPARSERECORDS](#), [PUT](#),
[READ_ONLY_DISTRIBUTION](#), [READ_ONLY_MODE](#), [READONLYoff](#), [READONLYon](#),
[rENTRY](#), [rENTRY_DATA](#), [rENTRY_DATASPEC](#), [rENTRY_DATATYPE](#),
[rENTRY_EXISTENCE](#), [rENTRY_NAME](#), [rENTRY_NUMELEMS](#), [RLE_COMPRESSION](#),
[RLE_OF_ZEROS](#), [ROW_MAJOR](#), [rVAR](#), [rVAR_ALLOCATEBLOCK](#),
[rVAR_ALLOCATEDFROM](#), [rVAR_ALLOCATEDTO](#), [rVAR_ALLOCATERECS](#),
[rVAR_BLOCKINGFACTOR](#), [rVAR_CACHESIZE](#), [rVAR_COMPRESSION](#),
[rVAR_DATA](#), [rVAR_DATASPEC](#), [rVAR_DATATYPE](#), [rVAR_DIMVARYS](#),
[rVAR_EXISTENCE](#), [rVAR_HYPERDATA](#), [rVAR_INITIALRECS](#),
[rVAR_MAXallocREC](#), [rVAR_MAXREC](#), [rVAR_NAME](#), [rVAR_nINDEXENTRIES](#),
[rVAR_nINDEXLEVELS](#), [rVAR_nINDEXRECORDS](#), [rVAR_NUMallocRECS](#),
[rVAR_NUMBER](#), [rVAR_NUMELEMS](#), [rVAR_NUMRECS](#), [rVAR_PADVALUE](#),
[rVAR_RECORDS](#), [rVAR_RECVARY](#), [rVAR_RESERVEPERCENT](#), [rVAR_SEQDATA](#),
[rVAR_SEQPOS](#), [rVAR_SPARSEARRAYS](#), [rVAR_SPARSERECORDS](#),
[rVARs_CACHESIZE](#), [rVARs_DIMCOUNTS](#), [rVARs_DIMINDICES](#),
[rVARs_DIMINTERVALS](#), [rVARs_DIMSIZES](#), [rVARs_MAXREC](#), [rVARs_NUMDIMS](#),
[rVARs_RECCOUNT](#), [rVARs_RECDATA](#), [rVARs_RECINTERVAL](#),
[rVARs_RECNUMBER](#), [SAVE](#), [SCRATCH_CREATE_ERROR](#), [SCRATCH_DELETE_ERROR](#),
[SCRATCH_READ_ERROR](#), [SCRATCH_WRITE_ERROR](#), [SELECT](#), [SGi_DECODING](#),
[SGi_ENCODING](#), [SINGLE_FILE](#), [SINGLE_FILE_FORMAT](#),
[SOME_ALREADY_ALLOCATED](#), [STAGE_CACHESIZE](#), [STATUS_TEXT](#),
[SUN_DECODING](#), [SUN_ENCODING](#), [TOO_MANY_PARMS](#), [TOO_MANY_VARS](#),
[UNKNOWN_COMPRESSION](#), [UNKNOWN_SPARSENESS](#), [UNSUPPORTED_OPERATION](#),
[VAR_ALREADY_CLOSED](#), [VAR_CLOSE_ERROR](#), [VAR_CREATE_ERROR](#),
[VAR_DELETE_ERROR](#), [VAR_EXISTS](#), [VAR_NAME_TRUNC](#), [VAR_OPEN_ERROR](#),
[VAR_READ_ERROR](#), [VAR_WRITE_ERROR](#), [VARIABLE_SCOPE](#), [VARY](#), [VAX_DECODING](#),
[VAX_ENCODING](#), [VIRTUAL_RECORD_DATA](#), [zENTRY](#), [zENTRY_DATA](#),
[zENTRY_DATASPEC](#), [zENTRY_DATATYPE](#), [zENTRY_EXISTENCE](#), [zENTRY_NAME](#),

[zENTRY_NUMELEMS](#) , [zMODEoff](#) , [zMODEon1](#) , [zMODEon2](#) , [zVAR](#) ,
[zVAR_ALLOCATEBLOCK](#) , [zVAR_ALLOCATEDFROM](#) , [zVAR_ALLOCATEDTO](#) ,
[zVAR_ALLOCATERECS](#) , [zVAR_BLOCKINGFACTOR](#) , [zVAR_CACHESIZE](#) ,
[zVAR_COMPRESSION](#) , [zVAR_DATA](#) , [zVAR_DATASPEC](#) , [zVAR_DATATYPE](#) ,
[zVAR_DIMCOUNTS](#) , [zVAR_DIMINDICES](#) , [zVAR_DIMINTERVALS](#) ,
[zVAR_DIMSIZES](#) , [zVAR_DIMVARYS](#) , [zVAR_EXISTENCE](#) , [zVAR_HYPERDATA](#) ,
[zVAR_INITIALRECS](#) , [zVAR_MAXallocREC](#) , [zVAR_MAXREC](#) , [zVAR_NAME](#) ,
[zVAR_nINDEXENTRIES](#) , [zVAR_nINDEXLEVELS](#) , [zVAR_nINDEXRECORDS](#) ,
[zVAR_NUMallocRECS](#) , [zVAR_NUMBER](#) , [zVAR_NUMDIMS](#) , [zVAR_NUMELEMS](#) ,
[zVAR_NUMRECS](#) , [zVAR_PADVALUE](#) , [zVAR_RECCOUNT](#) , [zVAR_RECINTERVAL](#) ,
[zVAR_RECNUMBER](#) , [zVAR_RECORDS](#) , [zVAR_RECVARY](#) , [zVAR_RESERVEPERCENT](#) ,
[zVAR_SEQDATA](#) , [zVAR_SEQPOS](#) , [zVAR_SPARSEARRAYS](#) ,
[zVAR_SPARSERECORDS](#) , [zVARs_CACHESIZE](#) , [zVARs_MAXREC](#) ,
[zVARs_RECDATA](#) , [zVARs_RECNUMBER](#)

Method Summary

protected void	addAttribute (Attribute newAttribute) Adds an attribute to this CDF.
protected void	addVariable (Variable newVariable) Adds a variable to this CDF.
void	close () Closes this CDF file.
long	confirmCDFCacheSize () Gets the CDF cache size (the number of 512-byte cache buffers) set for this CDF.
long	confirmCompressCacheSize () Gets the number of 512-byte cache buffers being used for the compression scratch file (for the current CDF).
long	confirmDecoding () Gets the CDF decoding method defined for this CDF.
long	confirmNegtoPosfp0 () Gets the -0.0 to 0.0 translation flag set for this CDF.
long	confirmReadOnlyMode () Gets the value of the read-only mode flag set for this CDF file.

long	<u>confirmStageCacheSize</u> () Gets the number of 512-byte cache buffers defined for the staging scratch file.
long	<u>confirmzMode</u> () Gets the zMode set for this CDF.
static CDF	<u>create</u> (java.lang.String path) Creates a CDF file in the current directory.
void	<u>delete</u> () Deletes this CDF file.
protected void	<u>executeCommand</u> (CDFObject obj, java.util.Vector command) executeCommand is where messages get passed to the CDFDelegate.
void	<u>finalize</u> () Do the necessary cleanup when garbage collector reaps it.
<u>Attribute</u>	<u>getAttribute</u> (long attrNum) Gets the attribute for the given attribute number.
<u>Attribute</u>	<u>getAttribute</u> (java.lang.String attrName) Gets the attribute for the given attribute name.
long	<u>getAttributeID</u> (java.lang.String attrName) Gets the id of the given attribute.
java.util. Vector	<u>getAttributes</u> () Gets all the global and variable attributes defined for this CDF.
java.lang. String	<u>getCompression</u> () Gets the string representation of the compression type and parameters defined for this CDF.
long[]	<u>getCompressionParms</u> () Gets the compression parameters set for this CDF.
long	<u>getCompressionPct</u> () Gets the compression percentage set for this CDF.
long	<u>getCompressionType</u> () Gets the compression type set for this CDF.
java.lang. String	<u>getCopyright</u> () Gets the CDF copyright statement for this CDF.
<u>CDFDelegate</u>	<u>getDelegate</u> () This is a placeholder for future expansions/extensions.

long	<u>getEncoding</u> () Gets the encoding method defined for this CDF.
long	<u>getFormat</u> () Gets the CDF format defined for this CDF.
java.util. Vector	<u>getGlobalAttributes</u> () Gets the global attributes defined for this CDF.
long	<u>getID</u> () Gets the id of this CDF file.
static java. lang.String	<u>getLibraryCopyright</u> () Retrieve library copyright information associated with the CDF library.
static java. lang.String	<u>getLibraryVersion</u> () Retrieve library version/release/increment/sub_increment information associated with the CDF library.
long	<u>getMajority</u> () Gets the variable majority defined for this CDF.
java.lang. String	<u>getName</u> () Gets the name of this CDF.
long	<u>getNumAttrs</u> () Gets the total number of global and variable attributes in this CDF.
long	<u>getNumGattrs</u> () Gets the number of global attributes in this CDF.
long	<u>getNumRvars</u> () Gets the number of r variables.
long	<u>getNumVars</u> () Gets the number of Z variables defined for this CDF.
long	<u>getNumVattrs</u> () Gets the number of variable attributes in this CDF.
long	<u>getNumZvars</u> () Gets the number of z variables in this CDF file.
java.util. Vector	<u>getOrphanAttributes</u> () Gets the variable attributes defined for this CDF that are not associated with any variables.

java.util. Vector	<u>getRecord</u> (long recNum, long[] varIDs) Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
java.util. Vector	<u>getRecord</u> (long recNum, long[] varIDs, long[] status) Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
java.util. Vector	<u>getRecord</u> (long recNum, java.lang.String[] strVars) Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
java.util. Vector	<u>getRecord</u> (long recNum, java.lang.String[] strVars, long[] status) Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
long	<u>getStatus</u> () Gets the status of the most recent CDF JNI/library function call.
static java. lang.String	<u>getStatusText</u> (long statusCode) Gets the status text of the most recent CDF JNI/library function call.
<u>Variable</u>	<u>getVariable</u> (long varNum) Gets the variable object for the given variable number.
<u>Variable</u>	<u>getVariable</u> (java.lang.String varName) Gets the variable object for the given variable name.
java.util. Vector	<u>getVariableAttributes</u> () Gets the variable attributes defined for this CDF.
long	<u>getVariableID</u> (java.lang.String varName) Gets the ID of the given variable.
java.util. Vector	<u>getVariables</u> () Gets the z variables defined for this CDF.
java.lang. String	<u>getVersion</u> () Gets the CDF library version that was used to create this CDF (e.g. 2.6.7, etc.).
static <u>CDF</u>	<u>open</u> (java.lang.String path, long readOnly) Open a CDF file.
void	<u>putRecord</u> (long recNum, long[] varIDs, java.util. Vector myData) Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.

void	putRecord (long recNum, long[] varIDs, java.util.Vector myData, long[] status) Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
void	putRecord (long recNum, java.lang.String[] strVars, java.util.Vector myData) Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
void	putRecord (long recNum, java.lang.String[] strVars, java.util.Vector myData, long[] status) Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables.
protected void	removeAttribute (Attribute oldAttribute) Removes an attribute.
protected void	removeVariable (Variable oldVariable) Remove a variable from this CDF.
void	rename (java.lang.String path) Renames the current CDF.
void	save () Saves this CDF file without closing.
void	selectCDFCacheSize (long cacheSize) Defines the number of 512-byte cache buffers to be used for the dotCDF file (for the current CDF).
void	selectCompressCacheSize (long compressCacheSize) Sets the number of 512-byte cache buffers to be used for the compression scratch file (for the current CDF).
void	selectDecoding (long decoding) Defines the CDF decoding method to be used for this CDF.
void	selectNegtoPosfp0 (long negtoPosfp0) Defines whether to translate -0.0 to 0.0 for reading or writing.
void	selectReadOnlyMode (long readOnly) Sets the desired read-only mode.
void	selectStageCacheSize (long stageCacheSize) Sets the number of 512-byte cache buffers to be used for the staging scratch file (for the current CDF).

void	<u>setCompression</u> (long cType, long[] cParms) Sets the compression type and parameters for this CDF.
void	<u>setDelegate</u> (<u>CDFDelegate</u> delegate) This is a placeholder for future expansions/extensions.
void	<u>setEncoding</u> (long encoding) Defines the encoding method to be used for this CDF.
void	<u>setFormat</u> (long format) Specifies the format of this CDF.
void	<u>setInfoWarningOff</u> () Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function off.
void	<u>setInfoWarningOn</u> () Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function on.
void	<u>setMajority</u> (long majority) Sets the variable majority for this CDF.
java.lang. String	<u>toString</u> () Gets the name of this CDF.

Methods inherited from class [java.lang.Object](#)

[clone](#), [equals](#), [getClass](#), [hashCode](#), [notify](#), [notifyAll](#), [wait](#), [wait](#), [wait](#)

Method Detail

create

```
public static CDF create(java.lang.String path)
    throws CDFException
```

Creates a CDF file in the current directory. By default, a single-file CDF is created. If the user wants to create a multi-file CDF, the user must open a file and change its file format as following:

```
CDF cdf = null;
```

```
cdf = CDF.create("test");  
cdf.setFormat(MULTI_FILE);
```

If the above example didn't change its format, it would have created a single-file CDF called 'test.cdf'. See chapter 1 of the CDF User's Guide for more information about the file format options.

Parameters:

path - the full pathname of the CDF file to be created

Returns:

the newly created CDF file/object

Throws:

[CDFException](#) - if there was a problem creating a CDF file

open

```
public static CDF open(java.lang.String path,  
                        long readOnly)  
    throws CDFException
```

Open a CDF file. A CDF file can be opened in read-only or read/write mode. If a file is opened in read-only mode, the user can only read values out of the file. Any operation other than reading data will throw a CDFException. If the user wants to modify the contents of a file, the file must be opened in read/write mode as following:

```
CDF cdf = CDF.open(fileName, READONLYoff);
```

Parameters:

path - the full pathname of the CDF file to be opened

readOnly - read-only flag that should be one the following:

- READONLYon - opens the file in read only mode.
- READONLYoff - opens the file in read/write mode

Returns:

the CDF object that represents the CDF file the user requested for opening

Throws:

[CDFException](#) - if there was a problem opening a file

getLibraryVersion

```
public static java.lang.String getLibraryVersion()  
                                throws CDFException
```

Retrieve library version/release/increment/sub_increment information associated with the CDF library.

Throws:

[CDFException](#) - If there was a problem retrieving the information associated with this CDF file

getLibraryCopyright

```
public static java.lang.String getLibraryCopyright()  
                                throws CDFException
```

Retrieve library copyright information associated with the CDF library.

Throws:

[CDFException](#) - If there was a problem retrieving the information associated with this CDF file

close

```
public void close()  
           throws CDFException
```

Closes this CDF file. It is essential that a CDF that has been created or modified by an

application be closed before the program exits. If the CDF is not closed, the file will be corrupted and unreadable. This is because the cache buffers maintained by the CDF library will not have been written to the CDF file(s).

The following example closes a CDF file:

```
cdf.close();
```

Throws:

[CDFException](#) - if there was a problem closing the CDF file

getID

```
public long getID()
```

Gets the id of this CDF file.

Returns:

the id of this CDF file

getEncoding

```
public long getEncoding()
```

Gets the encoding method defined for this CDF.

Returns:

The encoding method defined for this CDF file. One of the encoding methods described in the `setEncoding` method is returned.

setEncoding

```
public void setEncoding(long encoding)  
    throws CDFException
```


Defines the encoding method to be used for this CDF. A CDF's data encoding affects how its attribute entry and variable data values are stored. By default, attribute entry and variable data values passed into the CDF library are always stored using the host machine's native encoding. For example, if a CDF file is created without specifying what encoding method should be used on a IBM PC, the `IBMPC_ENCODING` method is used. This method becomes useful if someone wants to create a CDF file that will be read on a machine that is different from the machine the CDF file was created. A CDF with any of the supported encodings may be read from and written to any supported computer. See section 2.2.8 of the CDF User's Guide for a detailed description of the encodings listed below.

Parameters:

`encoding` - the encoding method to be used for this CDF that should be one of the following:

- `HOST_ENCODING`
- `NETWORK_ENCODING`
- `SUN_ENCODING`
- `VAX_ENCODING`
- `DECSTATION_ENCODING`
- `SGi_ENCODING`
- `IBMPC_ENCODING`
- `IBMRS_ENCODING`
- `MAC_ENCODING`
- `HP_ENCODING`
- `NeXT_ENCODING`
- `ALPHAOSF1_ENCODING`
- `ALPHAVMSd_ENCODING`
- `ALPHAVMSg_ENCODING`
- `ALPHAVMSi_ENCODING`

Throws:

[CDFException](#) - if there was a problem setting the requested encoding method

selectDecoding

```
public void selectDecoding(long decoding)
    throws CDFException
```

Defines the CDF decoding method to be used for this CDF. A CDF's decoding affects how its attribute entry and variable data values are passed out to a calling application. The decoding for a

CDF may be selected any number of times while the CDF is open. Selecting a decoding does not affect how the values are store in the CDF file(s) - only how the values are decoded by the CDF library.

Parameters:

`decoding` - the decoding method to be used for this CDF that should be one of the following:

- `HOST_DECODING` - this is the default decoding
- `NETWORK_DECODING`
- `SUN_DECODING`
- `VAX_DECODING`
- `DECSTATION_DECODING`
- `SGi_DECODING`
- `IBMPc_DECODING`
- `IBMRS_DECODING`
- `MAC_DECODING`
- `HP_DECODING`
- `NeXT_DECODING`
- `ALPHAOSF1_DECODING`
- `ALPHAVMSd_DECODING`
- `ALPHAVMSg_DECODING`
- `ALPHAVMSi_DECODING`

Throws:

[CDFException](#) - if there was a problem selecting the requested decoding method

confirmDecoding

```
public long confirmDecoding()  
           throws CDFException
```

Gets the CDF decoding method defined for this CDF.

Returns:

The decoding method set for this CDF file. One of the decoding methods defined in the `selectDecoding` method is returned.

Throws:

[CDFException](#) - if there was a problem getting the decoding method set for this CDF file

selectCDFCacheSize

```
public void selectCDFCacheSize(long cacheSize)
        throws CDFException
```

Defines the number of 512-byte cache buffers to be used for the dotCDF file (for the current CDF). The concepts chapter in the CDF User's Guide describes the caching scheme used by the CDF library.

Parameters:

cacheSize - the number of 512-byte cache buffers

Throws:

[CDFException](#) - if there was a problem setting the CDF cache size

confirmCDFCacheSize

```
public long confirmCDFCacheSize()
        throws CDFException
```

Gets the CDF cache size (the number of 512-byte cache buffers) set for this CDF.

Returns:

the number of 512-byte cache buffers set for this CDF

Throws:

[CDFException](#) - if there was a problem getting the CDF cache size

selectNegtoPosfp0

```
public void selectNegtoPosfp0(long negtoPosfp0)
        throws CDFException
```

Defines whether to translate -0.0 to 0.0 for reading or writing. Negative floating-point zero (-0.0) is legal on computers that use IEEE 754 floating-point representation (e.g. most UNIX-based computers and the PC) but is illegal on VAXes and DEC alphas running OpenVMS operating system. If this mode disabled, a warning (NEGATIVE_FP_ZERO) is returned when -0.0 is read from a CDF (and the decoding is that of a VAX or DEC Alpha running OpenVMS) or written to a CDF (and the encoding is that of a VAX or DEC Alpha running i OpenVMS).

Parameters:

negtoPosfp0 - flag to translate -0.0 to 0.0 (NEGtoPOSfp0on = on, NEGtoPOSfp0off = off)

Throws:

[CDFException](#) - if there was a problem setting the -0.0 to 0.0 translation flag

confirmNegtoPosfp0

```
public long confirmNegtoPosfp0()  
           throws CDFException
```

Gets the -0.0 to 0.0 translation flag set for this CDF.

Returns:

flag to translate -0.0 to 0.0 (NEGtoPOSfp0on = on, NEGtoPOSfp0off = off)

Throws:

[CDFException](#) - if there was a problem getting the value of the -0.0 to 0.0 translation flag

getFormat

```
public long getFormat()
```

Gets the CDF format defined for this CDF.

Returns:

the format of this CDF (SINGLE_FILE = single-file CDF, MULTI_FILE = multi-file CDF)

setFormat

```
public void setFormat(long format)
    throws CDFException
```

Specifies the format of this CDF. A CDF's format can't be changed once any variables are created. See section 1.4 of the CDF User's Guide for more detailed information about the file format options.

Parameters:

`format` - the CDF file format to be used that should be one of the following:

- `SINGLE_FILE` - This is the default. The CDF consists of only one file.
- `MULTI_FILE` - The CDF consists of one header file for control and attribute data and one additional file for each variable in the CDF.

Throws:

[CDFException](#) - if there was a problem setting a file format

getVersion

```
public java.lang.String getVersion()
```

Gets the CDF library version that was used to create this CDF (e.g. 2.6.7, etc.).

Returns:

the CDF library version number that was used to create this CDF

getMajority

```
public long getMajority()
```

Gets the variable majority defined for this CDF.

Returns:

the variable majority defined for this CDF (ROW_MAJOR = row major,
COLUMN_MAJOR = column major)

setMajority

```
public void setMajority(long majority)  
    throws CDFException
```

Sets the variable majority for this CDF. The variable majority of a CDF describes how variable values within each variable array (record) are stored. Each variable in a CDF has the same majority.

Parameters:

`majority` - The majority to be used in storing data (ROW_MAJOR = row major,
COLUMN_MAJOR = column major)

Throws:

[CDFException](#) - if a problem occurred in setting a majority

getNumAttrs

```
public long getNumAttrs()
```

Gets the total number of global and variable attributes in this CDF.

Returns:

the total number of global and variable attributes in this CDF

getNumGattrs

```
public long getNumGattrs()
```

Gets the number of global attributes in this CDF.

Returns:

the number of global attributes in this CDF file

getNumVattrs

```
public long getNumVattrs()
```

Gets the number of variable attributes in this CDF. Since r variables are not supported by the CDF Java APIs, the number of z variables is always returned.

Returns:

the number of variable attributes in this CDF file

getNumRvars

```
public long getNumRvars()
```

Gets the number of r variables. Zero is returned since r variables are not supported. Z variables can do everything r variables can do plus more.

Returns:

the number of r variables in this CDF file

getNumZvars

```
public long getNumZvars()
```

Gets the number of z variables in this CDF file.

Returns:

the number of z variables in this CDF file

getCopyright

```
public java.lang.String getCopyright()
```

Gets the CDF copyright statement for this CDF.

Returns:

the CDF copyright statement

selectReadOnlyMode

```
public void selectReadOnlyMode(long readOnly)  
    throws CDFException
```

Sets the desired read-only mode. See the description of the read-only flag defined in the open method in this class for details.

Parameters:

readOnly - read-only flag (READONLYon = on, READONLYoff = off)

Throws:

[CDFException](#) - if a problem occurred in setting a flag

confirmReadOnlyMode

```
public long confirmReadOnlyMode()  
    throws CDFException
```

Gets the value of the read-only mode flag set for this CDF file.

Returns:

read-only flag (READONLYon = on, READONLYoff = off)

Throws:

[CDFException](#) - if a problem occurred in getting the value of the read-only flag set for this CDF file

getCompressionType

```
public long getCompressionType()
```

Gets the compression type set for this CDF.

Returns:

the compression type set for this CDF - one of the following is returned:

- NO_COMPRESSION - no compression
 - RLE_COMPRESSION - Run-length compression
 - HUFF_COMPRESSION - Huffman compression
 - AHUFF_COMPRESSION - Adaptive Huffman compression
 - GZIP_COMPRESSION - Gnu's "zip" compression
-

getCompressionPct

```
public long getCompressionPct()
```

Gets the compression percentage set for this CDF.

Returns:

the compression percentage set for this CDF.

getCompressionParms

```
public long[] getCompressionParms()
```

Gets the compression parameters set for this CDF. See the description of the setCompression method in this class for more information.

Returns:

the compression parameter set for this CDF

setCompression

```
public void setCompression(long cType,  
                             long[] cParms)  
    throws CDFException
```

Sets the compression type and parameters for this CDF.

Parameters:

`cType` - the compression type to be applied to this CDF that should be one of the following:

- `NO_COMPRESSION` - no compression
- `RLE_COMPRESSION` - Run-length compression. Currently, only the run-length encoding of zeros is supported. The compression parameter must be set to `RLE_OF_ZEROS`.
- `HUFF_COMPRESSION` - Huffman compression. Currently, only optimal encoding trees are supported. The compression parameter must be set to `OPTIMAL_ENCODING_TREES`.
- `AHUFF_COMPRESSION` - Adaptive Huffman compression. Currently, only optimal encoding trees are supported. The compression parameter must be set to `OPTIMAL_ENCODING_TREES`.
- `GZIP_COMPRESSION` - Gnu's "zip" compression. The compression parameter may range from 1 to 9. 1 provides the least compression and requires less execution time. 9 provides the most compression but requires the most execution time.

`cParms` - Compression parameter. There is only one parameter for all the compression methods described above.

Throws:

[CDFException](#) - if a problem occurred in setting the compression type and parameters

getCompression

```
public java.lang.String getCompression()  
    throws CDFException
```

Gets the string representation of the compression type and parameters defined for this CDF.

Returns:

the string representation of the compression type and parameters (e.g. GZIP.9, RLE.0, etc.) defined for this CDF

Throws:

[CDFException](#) - if a problem occurred in getting the compression type and parameters set for this CDF

confirmzMode

```
public long confirmzMode()  
           throws CDFException
```

Gets the zMode set for this CDF.

Returns:

'zMODEon2' is always returned since it is the only mode supported by the CDF Java APIs.

Throws:

[CDFException](#) - if a problem occurred in getting the zmode set for this CDF file

selectCompressCacheSize

```
public void selectCompressCacheSize(long compressCacheSize)  
           throws CDFException
```

Sets the number of 512-byte cache buffers to be used for the compression scratch file (for the current CDF). The Concepts chapter in the CDF User's Guide describes the caching scheme used by the CDF library.

Parameters:

`compressCacheSize` - the number of 512-byte cache buffers to be used

Throws:

[CDFException](#) - if a problem occurs in setting the cache size

confirmCompressCacheSize

```
public long confirmCompressCacheSize()  
           throws CDFException
```

Gets the number of 512-byte cache buffers being used for the compression scratch file (for the current CDF).

Returns:

the number of 512-byte cache buffers being used

Throws:

[CDFException](#) - if a problem occurs in getting the cache size defined

selectStageCacheSize

```
public void selectStageCacheSize(long stageCacheSize)  
           throws CDFException
```

Sets the number of 512-byte cache buffers to be used for the staging scratch file (for the current CDF). The Concepts chapter in the CDF User's Guide describes the caching scheme used by the CDF library.

Parameters:

stageCacheSize - the Number of cache buffers to be used

Throws:

[CDFException](#) - if a problem occurs in setting the cache size

confirmStageCacheSize

```
public long confirmStageCacheSize()  
           throws CDFException
```

Gets the number of 512-byte cache buffers defined for the staging scratch file.

Returns:

the number of 512-byte cache buffers defined for the staging scratch file

Throws:

[CDFException](#) - if a problem occurs in getting the number of cache buffers defined for the staging scratch file

getName

```
public java.lang.String getName()
```

Gets the name of this CDF.

Specified by:

[getName](#) in interface [CDFObject](#)

Returns:

the name of this CDF

rename

```
public void rename(java.lang.String path)
```

Renames the current CDF. It's here because CDF.java implements the CDFObject interface that defines three methods: rename, delete, getname. This method doesn't do anything now, but it will be refined to rename a single-CDF and multi-CDF files in the future.

Specified by:

[rename](#) in interface [CDFObject](#)

Parameters:

path - the new CDF name to be renamed to

delete

```
public void delete()
```

throws [CDFException](#)

Deletes this CDF file.

Specified by:

[delete](#) in interface [CDFObject](#)

Throws:

[CDFException](#) - if a problem occurs in deleting this CDF file

save

```
public void save()  
    throws CDFException
```

Saves this CDF file without closing. There are times the users will have to save the contents of a CDF file before some operations can be performed. For example, a CDF file must be saved first before records can be deleted properly for variables that are defined to have sparse and/or compressed records.

Throws:

[CDFException](#) - if there was a problem saving the contents of this CDF file

getStatus

```
public long getStatus()
```

Gets the status of the most recent CDF JNI/library function call. This value can be examined and appropriate action can be taken.

The following example sends a signal to the JNI code to write a single data to the current CDF. JNI in turn performs the requested operation. It then checks to see whether the requested operation was successfully performed or not.

```
variable.putSingleData(recNum, dimIndicies, data);  
long status = cdf.getStatus();  
if (status != CDF_OK) {  
    String statusText = CDF.getStatusText(status);
```

```
        System.out.println ("status = "+statusText);  
    }
```

Returns:

the status of the most recent CDF JNI/library function call

getStatusText

```
public static java.lang.String getStatusText(long statusCode)
```

Gets the status text of the most recent CDF JNI/library function call.

The following example shows how to obtain the text representation of the status code returned from the `getStatus` method:

```
long status = cdf.getStatus();  
if (status != CDF_OK) {  
    String statusText = CDF.getStatusText(status);  
    System.out.println ("status = "+statusText);  
}
```

Parameters:

`statusCode` - status code to be translated

Returns:

the string representation of the passed status code

setInfoWarningOff

```
public void setInfoWarningOff()
```

Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function off. This is the default when a file is opened or created.

setInfoWarningOn

```
public void setInfoWarningOn()
```

Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function on.

toString

```
public java.lang.String toString()
```

Gets the name of this CDF.

Returns:

the name of this CDF

finalize

```
public void finalize()  
    throws java.lang.Throwable
```

Do the necessary cleanup when garbage collector reaps it.

Throws:

java.lang.Throwable - if there was a problem doing cleanup

getDelegate

```
public CDFDelegate getDelegate()
```

This is a placeholder for future expansions/extensions.

Returns:

setDelegate

```
public void setDelegate(CDFDelegate delegate)
```

This is a placeholder for future expansions/extensions.

executeCommand

```
protected void executeCommand(CDFObject obj,  
                                java.util.Vector command)  
    throws CDFException
```

executeCommand is where messages get passed to the CDFDelegate. CDFDelegate in turn sends the commands it received to JNI for processing.

Parameters:

obj - The CDFObject executing the command
command - The command vector

Throws:

[CDFException](#) - If there was a problem executing the given

getAttributeID

```
public long getAttributeID(java.lang.String attrName)
```

Gets the id of the given attribute.

Parameters:

attrName - the name of the attribute to check

Returns:

the id of the named attribute if it exists, -1 otherwise

addAttribute

```
protected final void addAttribute(Attribute newAttribute)
```

Adds an attribute to this CDF. The Attribute class uses this method to setup the connection between the CDF object and Attribute object.

Parameters:

newAttribute - the name of the attribute to be added

removeAttribute

```
protected final void removeAttribute(Attribute oldAttribute)
```

Removes an attribute. The Attribute class uses this to break the connection between the CDF object and Attribute object.

Parameters:

oldAttribute - the name of the attribute to be removed

getAttribute

```
public Attribute getAttribute(long attrNum)  
    throws CDFException
```

Gets the attribute for the given attribute number.

Note: The attrNum may not necessarily correspond to the attribute number stored in the CDF file.

Parameters:

attrNum - the attribute number to get

Returns:

the Attribute object that corresponds to the requested attribute number

Throws:

[CDFException](#) - if the supplied attribute number does not exist

getAttribute

```
public Attribute getAttribute(java.lang.String attrName)  
    throws CDFException
```

Gets the attribute for the given attribute name.

The following example retrieves the attribute named "ValidMin":

```
Attribute validMin = cdf.getAttribute("ValidMin");
```

Parameters:

attrName - the name of the attribute to get

Returns:

the Attribute object that corresponds to the requested attribute name

Throws:

[CDFException](#) - if the supplied attribute name does not exist

getAttributes

```
public java.util.Vector getAttributes()
```

Gets all the global and variable attributes defined for this CDF. The following example retrieves all the global and variable attributes:

```
Vector attr = cdf.getAttributes();
```

Returns:

a vector that contains the global and variable attributes defined in this CDF

getGlobalAttributes

```
public java.util.Vector getGlobalAttributes()
```

Gets the global attributes defined for this CDF.

Returns:

A vector that contains the global attributes defined in this CDF

getVariableAttributes

```
public java.util.Vector getVariableAttributes()
```

Gets the variable attributes defined for this CDF.

Returns:

A vector that contains the variable attributes defined in this CDF

getOrphanAttributes

```
public java.util.Vector getOrphanAttributes()
```

Gets the variable attributes defined for this CDF that are not associated with any variables.

Returns:

A vector that contains the empty variable attributes defined in this CDF.

getVariableID

```
public long getVariableID(java.lang.String varName)
```

Gets the ID of the given variable.

Parameters:

varName - the name of the variable to check

Returns:

-1 if the variable does not exist. The variable id if the variable does exist.

addVariable

```
protected final void addVariable(Variable newVariable)
```

Adds a variable to this CDF. The Variable class uses this to setup the connection between the CDF object and Variable object.

Parameters:

newVariable - The variable to be added to this CDF

removeVariable

```
protected final void removeVariable(Variable oldVariable)
```

Remove a variable from this CDF. The Variable class uses this to break the connection between the CDF object and Variable object.

Parameters:

oldVariable - The variable to be removed from this CDF.

getVariable

```
public Variable getVariable(long varNum)  
    throws CDFException
```

Gets the variable object for the given variable number.

Parameters:

varNum - variable number from which the variable is retrieved

Returns:

the variable object that corresponds to the variable id

Throws:

[CDFException](#) - if the supplied variable number does not exist

getVariable

```
public Variable getVariable(java.lang.String varName)  
    throws CDFException
```

Gets the variable object for the given variable name.

The following example retrieves a variable called "Longitude":

```
Variable longitude = cdf.getVariable("Longitude");
```

Parameters:

varName - the variable name to get

Returns:

the variable object that corresponds to the variable name

Throws:

[CDFException](#) - if the supplied variable name does not exist

getVariables

```
public java.util.Vector getVariables()
```

Gets the z variables defined for this CDF.

Note: Since all CDFs opened or created with the CDFJava APIs are placed into zMODE 2, there

are no rVariables. All variables are treated as zVariables.

Returns:

a Vector containing all the z variables defined in this CDF

getNumVars

```
public long getNumVars()
```

Gets the number of Z variables defined for this CDF.

Note: Since all CDFs opened or create with the CDFJava APIs are placed into zMODE 2, there are no rVariables. All variables are treated as zVariables.

getRecord

```
public java.util.Vector getRecord(long recNum,  
                                     java.lang.String[] strVars)  
    throws CDFException
```

Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for reading one or more variables' data in a single call, instead of reading individual variable's data one at a time.

Parameters:

recNum - the record number to retrieve data from

strVars - the variable (array of variable names) to retrieve data from

Returns:

the requested record in a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem getting a record

Note: A virtual variable record is returned if the given record does not exist. Any error during data retrieval will cause the process to stop (an exception thrown) and thus nothing (a null object) will be returned.

getRecord

```
public java.util.Vector getRecord(long recNum,  
                                   java.lang.String[] strVars,  
                                   long[] status)  
    throws CDFException
```

Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for reading one or more variables' data in a single call, instead of reading individual variable's data one at a time.

Parameters:

`recNum` - the record number to retrieve data from

`strVars` - the variable (array of variable names) to retrieve data from

`status` - the individual status (array of statuses) for reading each variable record

Returns:

the requested record in a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem getting a record

Note: A virtual variable record is returned if the given record does not exist. Any error during data retrieval will cause the process to stop (an exception thrown) and thus nothing (a null object) will be returned.

The following example reads the 2nd record from Longitude and Temperature and prints their contents.

```
String[] strVars = {"Longitude", "Temperature"};  
Vector record;
```



```

        long[] status = new long[2];
        record = cdf.getRecord(1L, strVars, status);

        // Check the contents of the 'status' array -
optional

        // var: Longitude - data type: CDF_UINT2,
dimensionality: 1:[3]
        System.out.print ("    2nd record of Longitude -- ");
        for (int i=0; i < 3; i++)
            System.out.print (((int[])record.elementAt(0))
[i]+" ");
        System.out.println ("");

        // var: Temperature -- data type: CDF_REAL4,
dimensionality: 1:[3]
        System.out.print ("    2nd record of Temperature --
");
        for (int i=0; i < 3; i++)
            System.out.print (((float[])record.elementAt(1))
[i]+" ");
        System.out.println ("");

```

getRecord

```

public java.util.Vector getRecord(long recNum,
                                   long[] varIDs)
    throws CDFException

```

Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for reading one or more variables' data in a single call, instead of reading individual variable's data one at a time.

Parameters:

`recNum` - the record number to retrieve data from

`varIDs` - the variable IDs (array of variable IDs) to retrieve data from

Returns:

the requested record in a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem getting a record

Note: A virtual variable record is returned if the given record does not exist. Any error during data retrieval will cause the process to stop (an exception thrown) and thus nothing (a null object) will be returned.

getRecord

```
public java.util.Vector getRecord(long recNum,  
                                   long[] varIDs,  
                                   long[] status)  
    throws CDFException
```

Retrieves a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for reading one or more variables' data in a single call, instead of reading individual variable's data one at a time.

Parameters:

`recNum` - the record number to retrieve data from

`varIDs` - the variable IDs (array of variable IDs) to retrieve data from

`status` - the individual status (array of statuses) for reading each variable record

Returns:

the requested record in a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem getting a record

Note: A virtual variable record is returned if the given record does not exist. Any error during data retrieval will cause the process to stop (an exception thrown) and thus nothing

(a null object) will be returned.

The following example reads the 2nd record from Longitude (varIDs[0]) and Temperature (varIDs[1]) and prints their contents.

```

        long[] varIDs = {2, 10};    // Obtained from
Variable.getID()
        Vector record;
        long[] status = new long[2];
        record = cdf.getRecord(1L, varIDs, status);

        // Check the contents of the 'status' array -
optional

        // var: Longitude - data type: CDF_UINT2,
dimensionality: 1:[3]
        System.out.print ("    2nd record of Longitude -- ");
        for (int i=0; i < 3; i++)
            System.out.print (((int[])record.elementAt(0))
[i]+" ");
        System.out.println ("");

        // var: Temperature - data type: CDF_REAL4,
dimensionality: 1:[3]
        System.out.print ("    2nd record of Temperature --
");
        for (int i=0; i < 3; i++)
            System.out.print (((float[])record.elementAt(1))
[i]+" ");
        System.out.println ("");

```

putRecord

```

public void putRecord(long recNum,
        java.lang.String[] strVars,
        java.util.Vector myData)
    throws CDFException

```

Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF

variables. This is a convenient method for writing one or more variables' data in a single call, instead of writing individual variable's data one at a time.

Parameters:

`recNum` - the record number to write data to

`strVars` - the variable (array of variable names) to write data to

`myData` - a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem writing the record for any of the variables

Note: Any error during the data writing will cause the process to stop (an exception thrown) and thus the operation will not be completed. Nothing will be done if the element counts of parameters don't match.

putRecord

```
public void putRecord(long recNum,  
                       java.lang.String[] strVars,  
                       java.util.Vector myData,  
                       long[] status)  
    throws CDFException
```

Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for writing one or more variables' data in a single call, instead of writing individual variable's data one at a time.

Parameters:

`recNum` - the record number to write data to

`strVars` - the variable (array of variable names) to write data to

`myData` - a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

status - the individual status (array of statuses) for writing each variable record

Throws:

[CDFException](#) - if there was a problem writing the record for any of the variables

Note: Any error during the data writing will cause the process to stop (an exception thrown) and thus the operation will not be completed. Nothing will be done if the element counts of parameters don't match.

The following example writes the contents of a record (which consists of two CDF variables - Longitude and Temperature) to record number 2.

```

        String[] strVars = {"Longitude",      // variable names
in CDF
                                "Temperature"};

        // Longitude -- data type: CDF_UINT2 dimensionality: 1:
[3]
        int[] longitude_data = {333, 444, 555};

        // Temperature -- data type: CDF_FLOAT dimensionality: 0:
[]
        Float temperature_data = new Float((float)999.99);

        Vector record = new Vector();
        record.add(longitude_data);
        record.add(temperature_data);

        cdf.putRecord(1L, strVars, record); // Write a record
to record #2

```

putRecord

```

public void putRecord(long recNum,
                        long[] varIDs,
                        java.util.Vector myData)
    throws CDFException

```

Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for writing one or more variables' data in a single call, instead of writing individual variable's data one at a time.

Parameters:

`recNum` - the record number to write data to

`varIDs` - the variable IDs (array of variable IDs) to write data to

`myData` - a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in the vector corresponds to the second variable's record, and so on.

Throws:

[CDFException](#) - if there was a problem writing the record for any of the variables

Note: Any error during the data writing will cause the process to stop (an exception thrown) and thus the operation will not be completed. Nothing will be done if the element counts of parameters don't match.

putRecord

```
public void putRecord(long recNum,  
                       long[] varIDs,  
                       java.util.Vector myData,  
                       long[] status)  
    throws CDFException
```

Writes a logical record that consists of single variable record(s) from an arbitrary number of CDF variables. This is a convenient method for writing one or more variables' data in a single call, instead of writing individual variable's data one at a time.

Parameters:

`recNum` - the record number to write data to

`varIDs` - the variable IDs (array of variable IDs) to write data to

`myData` - a Java vector that contains the variables' data.

The first object in the vector corresponds to the first variable's record, the second object in

the vector corresponds to the second variable's record, and so on.

`status` - the individual status (array of statuses) for writing each variable record

Throws:

[CDFException](#) - if there was a problem writing the record for any of the variables

Note: Any error during the data writing will cause the process to stop (an exception thrown) and thus the operation will not be completed. Nothing will be done if the element counts of parameters don't match.

The following example writes the contents of a record (which consists of two CDF variables - Longitude and Temperature) by using variable IDs (instead of variable names) to record number 2.

```

    long[] varIDs = {3, 9};    // Can be obtained from
variable.getID()

    // Longitude -- data type: CDF_UINT2 dimensionality: 1:
[3]
    int[] longitude_data = {333, 444, 555};

    // Temperature -- data type: CDF_FLOAT dimensionality: 0:
[]
    Float temperature_data = new Float((float)999.99);

    Vector record = new Vector();
    record.add(longitude_data);
    record.add(temperature_data);

    cdf.putRecord(1L, varIDs, record); // Write a record to
record #2

```

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gsfc.nssdc.cdf

Interface CDFConstants

All Known Implementing Classes:

[Attribute](#), [CDF](#), [CDFData](#), [CDFException](#), [CDFTools](#), [CDFUtils](#), [Entry](#), [Epoch](#), [Epoch16](#), [Variable](#)

public interface **CDFConstants**

This class defines the constants used by the CDF library and CDF Java APIs, and it mimics the cdf.h include file from the cdf distribution.

Field Summary

static long	AHUFF_COMPRESSION
static long	ALPHAOSF1_DECODING
static long	ALPHAOSF1_ENCODING
static long	ALPHAVMSd_DECODING
static long	ALPHAVMSd_ENCODING
static long	ALPHAVMSg_DECODING
static long	ALPHAVMSg_ENCODING

static long	<u>ALPHAVMSi_DECODING</u>
static long	<u>ALPHAVMSi_ENCODING</u>
static long	<u>ATTR</u>
static long	<u>ATTR_EXISTENCE</u>
static long	<u>ATTR_EXISTS</u>
static long	<u>ATTR_MAXgENTRY</u>
static long	<u>ATTR_MAXrENTRY</u>
static long	<u>ATTR_MAXzENTRY</u>
static long	<u>ATTR_NAME</u>
static long	<u>ATTR_NAME_TRUNC</u>
static long	<u>ATTR_NUMBER</u>
static long	<u>ATTR_NUMgENTRIES</u>
static long	<u>ATTR_NUMrENTRIES</u>
static long	<u>ATTR_NUMzENTRIES</u>
static long	<u>ATTR_SCOPE</u>
static long	<u>BAD_ALLOCATE_RECS</u>

static long	<u>BAD_ARGUMENT</u>
static long	<u>BAD_ATTR_NAME</u>
static long	<u>BAD_ATTR_NUM</u>
static long	<u>BAD_BLOCKING_FACTOR</u>
static long	<u>BAD_CACHE_SIZE</u>
static long	<u>BAD_CDF_EXTENSION</u>
static long	<u>BAD_CDF_ID</u>
static long	<u>BAD_CDF_NAME</u>
static long	<u>BAD_CDFSTATUS</u>
static long	<u>BAD_COMPRESSION_PARM</u>
static long	<u>BAD_DATA_TYPE</u>
static long	<u>BAD_DECODING</u>
static long	<u>BAD_DIM_COUNT</u>
static long	<u>BAD_DIM_INDEX</u>
static long	<u>BAD_DIM_INTERVAL</u>
static long	<u>BAD_DIM_SIZE</u>

static long	<u>BAD_ENCODING</u>
static long	<u>BAD_ENTRY_NUM</u>
static long	<u>BAD_FNC_OR_ITEM</u>
static long	<u>BAD_FORMAT</u>
static long	<u>BAD_INITIAL_RECS</u>
static long	<u>BAD_MAJORITY</u>
static long	<u>BAD_MALLOC</u>
static long	<u>BAD_NEGtoPOSfp0_MODE</u>
static long	<u>BAD_NUM_DIMS</u>
static long	<u>BAD_NUM_ELEMS</u>
static long	<u>BAD_NUM_VARS</u>
static long	<u>BAD_READONLY_MODE</u>
static long	<u>BAD_REC_COUNT</u>
static long	<u>BAD_REC_INTERVAL</u>
static long	<u>BAD_REC_NUM</u>
static long	<u>BAD_SCOPE</u>

static long	<u>BAD_SCRATCH_DIR</u>
static long	<u>BAD_SPARSEARRAYS_PARM</u>
static long	<u>BAD_VAR_NAME</u>
static long	<u>BAD_VAR_NUM</u>
static long	<u>BAD_zMODE</u>
static long	<u>CANNOT_ALLOCATE_RECORDS</u>
static long	<u>CANNOT_CHANGE</u>
static long	<u>CANNOT_COMPRESS</u>
static long	<u>CANNOT_COPY</u>
static long	<u>CANNOT_SPARSEARRAYS</u>
static long	<u>CANNOT_SPARSERECORDS</u>
static long	<u>CDF_</u>
static long	<u>CDF_ACCESS_</u>
static long	<u>CDF_ATTR_NAME_LEN</u>
static long	<u>CDF_BYTE</u>
static long	<u>CDF_CACHESIZE_</u>

static long	<u>CDF_CHAR</u>
static long	<u>CDF_CLOSE_ERROR</u>
static long	<u>CDF_COMPRESSION</u>
static long	<u>CDF_COPYRIGHT</u>
static long	<u>CDF_COPYRIGHT_LEN</u>
static long	<u>CDF_CREATE_ERROR</u>
static long	<u>CDF_DECODING</u>
static long	<u>CDF_DELETE_ERROR</u>
static long	<u>CDF_DOUBLE</u>
static long	<u>CDF_ENCODING</u>
static long	<u>CDF_EPOCH</u>
static long	<u>CDF_EPOCH16</u>
static long	<u>CDF_EXISTS</u>
static long	<u>CDF_FLOAT</u>
static long	<u>CDF_FORMAT</u>
static long	<u>CDF_INCREMENT</u>

static long	<u>CDF_INFO</u>
static long	<u>CDF_INT1</u>
static long	<u>CDF_INT2</u>
static long	<u>CDF_INT4</u>
static long	<u>CDF_INTERNAL_ERROR</u>
static long	<u>CDF_MAJORITY</u>
static long	<u>CDF_MAX_DIMS</u>
static long	<u>CDF_MAX_PARMS</u>
static long	<u>CDF_MIN_DIMS</u>
static long	<u>CDF_NAME</u>
static long	<u>CDF_NAME_TRUNC</u>
static long	<u>CDF_NEGtoPOSfp0_MODE</u>
static long	<u>CDF_NUMATTRS_</u>
static long	<u>CDF_NUMgATTRS_</u>
static long	<u>CDF_NUMrVARS_</u>
static long	<u>CDF_NUMvATTRS_</u>

static long	<u>CDF_NUMzVARS_</u>
static long	<u>CDF_OK</u>
static long	<u>CDF_OPEN_ERROR</u>
static long	<u>CDF_PATHNAME_LEN</u>
static long	<u>CDF_READ_ERROR</u>
static long	<u>CDF_READONLY_MODE</u>
static long	<u>CDF_REAL4</u>
static long	<u>CDF_REAL8</u>
static long	<u>CDF_RELEASE</u>
static long	<u>CDF_SCRATCHDIR</u>
static long	<u>CDF_STATUS</u>
static long	<u>CDF_STATUSTEXT_LEN</u>
static long	<u>CDF_UCHAR</u>
static long	<u>CDF_UINT1</u>
static long	<u>CDF_UINT2</u>
static long	<u>CDF_UINT4</u>

static long	<u>CDF_VAR_NAME_LEN</u>
static long	<u>CDF_VERSION</u>
static long	<u>CDF_WARN</u>
static long	<u>CDF_WRITE_ERROR</u>
static long	<u>CDF_zMODE_</u>
static long	<u>CDFwithSTATS_</u>
static long	<u>CLOSE_</u>
static long	<u>COLUMN_MAJOR</u>
static long	<u>COMPRESS_CACHESIZE_</u>
static long	<u>COMPRESSION_ERROR</u>
static long	<u>CONFIRM_</u>
static long	<u>CORRUPTED_V2_CDF</u>
static long	<u>CORRUPTED_V3_CDF</u>
static long	<u>CREATE_</u>
static long	<u>CURgENTRY_EXISTENCE_</u>
static long	<u>CURrENTRY_EXISTENCE_</u>

static long	<u>CURzENTRY_EXISTENCE</u>
static long	<u>DATATYPE MISMATCH</u>
static long	<u>DATATYPE SIZE</u>
static long	<u>DECOMPRESSION_ERROR</u>
static long	<u>DECSTATION_DECODING</u>
static long	<u>DECSTATION_ENCODING</u>
static byte	<u>DEFAULT_BYTE_PADVALUE</u>
static char	<u>DEFAULT_CHAR_PADVALUE</u>
static double	<u>DEFAULT_DOUBLE_PADVALUE</u>
static double	<u>DEFAULT_EPOCH_PADVALUE</u>
static float	<u>DEFAULT_FLOAT_PADVALUE</u>
static byte	<u>DEFAULT_INT1_PADVALUE</u>
static short	<u>DEFAULT_INT2_PADVALUE</u>
static int	<u>DEFAULT_INT4_PADVALUE</u>
static float	<u>DEFAULT_REAL4_PADVALUE</u>
static double	<u>DEFAULT_REAL8_PADVALUE</u>

static char	<u>DEFAULT_UCHAR_PADVALUE</u>
static short	<u>DEFAULT_UINT1_PADVALUE</u>
static int	<u>DEFAULT_UINT2_PADVALUE</u>
static long	<u>DEFAULT_UINT4_PADVALUE</u>
static long	<u>DELETE</u>
static long	<u>DID_NOT_COMPRESS</u>
static long	<u>EMPTY_COMPRESSED_CDF</u>
static long	<u>END_OF_VAR</u>
static long	<u>EPOCH_STRING_LEN</u>
static long	<u>EPOCH_STRING_LEN_EXTEND</u>
static long	<u>EPOCH1_STRING_LEN</u>
static long	<u>EPOCH1_STRING_LEN_EXTEND</u>
static long	<u>EPOCH2_STRING_LEN</u>
static long	<u>EPOCH2_STRING_LEN_EXTEND</u>
static long	<u>EPOCH3_STRING_LEN</u>
static long	<u>EPOCH3_STRING_LEN_EXTEND</u>

static long	<u>EPOCHx_FORMAT_MAX</u>
static long	<u>EPOCHx_STRING_MAX</u>
static long	<u>FORCED_PARAMETER</u>
static long	<u>gENTRY</u>
static long	<u>gENTRY_DATA</u>
static long	<u>gENTRY_DATASPEC</u>
static long	<u>gENTRY_DATATYPE</u>
static long	<u>gENTRY_EXISTENCE</u>
static long	<u>gENTRY_NUMELEMS</u>
static long	<u>GET</u>
static long	<u>GLOBAL_SCOPE</u>
static long	<u>GZIP_COMPRESSION</u>
static long	<u>HOST_DECODING</u>
static long	<u>HOST_ENCODING</u>
static long	<u>HP_DECODING</u>
static long	<u>HP_ENCODING</u>

static long	<u>HUFF_COMPRESSION</u>
static long	<u>IBM_PC_OVERFLOW</u>
static long	<u>IBMPC_DECODING</u>
static long	<u>IBMPC_ENCODING</u>
static long	<u>IBMRS_DECODING</u>
static long	<u>IBMRS_ENCODING</u>
static long	<u>ILLEGAL_EPOCH_FIELD</u>
static long	<u>ILLEGAL_EPOCH_VALUE</u>
static long	<u>ILLEGAL_FOR_SCOPE</u>
static long	<u>ILLEGAL_IN_zMODE</u>
static long	<u>ILLEGAL_ON_V1_CDF</u>
static long	<u>LIB_COPYRIGHT</u>
static long	<u>LIB_INCREMENT</u>
static long	<u>LIB_RELEASE</u>
static long	<u>LIB_subINCREMENT</u>
static long	<u>LIB_VERSION</u>

static long	<u>MAC_DECODING</u>
static long	<u>MAC_ENCODING</u>
static long	<u>MULTI_FILE</u>
static long	<u>MULTI_FILE_FORMAT</u>
static long	<u>NA_FOR_VARIABLE</u>
static long	<u>NEGATIVE_FP_ZERO</u>
static long	<u>NEGtoPOSfp0off</u>
static long	<u>NEGtoPOSfp0on</u>
static long	<u>NETWORK_DECODING</u>
static long	<u>NETWORK_ENCODING</u>
static long	<u>NeXT_DECODING</u>
static long	<u>NeXT_ENCODING</u>
static long	<u>NO_ATTR_SELECTED</u>
static long	<u>NO_CDF_SELECTED</u>
static long	<u>NO_COMPRESSION</u>
static long	<u>NO_DELETE_ACCESS</u>

static long	<u>NO_ENTRY_SELECTED</u>
static long	<u>NO_MORE_ACCESS</u>
static long	<u>NO_PADVALUE_SPECIFIED</u>
static long	<u>NO_SPARSEARRAYS</u>
static long	<u>NO_SPARSERECORDS</u>
static long	<u>NO_STATUS_SELECTED</u>
static long	<u>NO_SUCH_ATTR</u>
static long	<u>NO_SUCH_CDF</u>
static long	<u>NO_SUCH_ENTRY</u>
static long	<u>NO_SUCH_RECORD</u>
static long	<u>NO_SUCH_VAR</u>
static long	<u>NO_VAR_SELECTED</u>
static long	<u>NO_VARS_IN_CDF</u>
static long	<u>NO_WRITE_ACCESS</u>
static long	<u>NOT_A_CDF</u>
static long	<u>NOT_A_CDF_OR_NOT_SUPPORTED</u>

static long	<u>NOVARY</u>
static long	<u>NULL</u>
static long	<u>OPEN</u>
static long	<u>OPTIMAL_ENCODING_TREES</u>
static long	<u>PAD_SPARSERECORDS</u>
static long	<u>PRECEEDING_RECORDS_ALLOCATED</u>
static long	<u>PREV_SPARSERECORDS</u>
static long	<u>PUT</u>
static long	<u>READ_ONLY_DISTRIBUTION</u>
static long	<u>READ_ONLY_MODE</u>
static long	<u>READONLYoff</u>
static long	<u>READONLYon</u>
static long	<u>rENTRY</u>
static long	<u>rENTRY_DATA</u>
static long	<u>rENTRY_DATASPEC</u>
static long	<u>rENTRY_DATATYPE</u>

static long	<u>rENTRY_EXISTENCE</u>
static long	<u>rENTRY_NAME</u>
static long	<u>rENTRY_NUMELEMS</u>
static long	<u>RLE_COMPRESSION</u>
static long	<u>RLE_OF_ZEROs</u>
static long	<u>ROW MAJOR</u>
static long	<u>rVAR</u>
static long	<u>rVAR_ALLOCATEBLOCK</u>
static long	<u>rVAR_ALLOCATEDFROM</u>
static long	<u>rVAR_ALLOCATEDTO</u>
static long	<u>rVAR_ALLOCATERECS</u>
static long	<u>rVAR_BLOCKINGFACTOR</u>
static long	<u>rVAR_CACHESIZE</u>
static long	<u>rVAR_COMPRESSION</u>
static long	<u>rVAR_DATA</u>
static long	<u>rVAR_DATASPEC</u>

static long	<u>rVAR_DATATYPE</u>
static long	<u>rVAR_DIMVARYS</u>
static long	<u>rVAR_EXISTENCE</u>
static long	<u>rVAR_HYPERDATA</u>
static long	<u>rVAR_INITIALRECS</u>
static long	<u>rVAR_MAXallocREC</u>
static long	<u>rVAR_MAXREC</u>
static long	<u>rVAR_NAME</u>
static long	<u>rVAR_nINDEXENTRIES</u>
static long	<u>rVAR_nINDEXLEVELS</u>
static long	<u>rVAR_nINDEXRECORDS</u>
static long	<u>rVAR_NUMallocRECS</u>
static long	<u>rVAR_NUMBER</u>
static long	<u>rVAR_NUMELEMS</u>
static long	<u>rVAR_NUMRECS</u>
static long	<u>rVAR_PADVALUE</u>

static long	<u>rVAR_RECORDS_</u>
static long	<u>rVAR_RECVARY_</u>
static long	<u>rVAR_RESERVEPERCENT_</u>
static long	<u>rVAR_SEQDATA_</u>
static long	<u>rVAR_SEQPOS_</u>
static long	<u>rVAR_SPARSEARRAYS_</u>
static long	<u>rVAR_SPASERECORDS_</u>
static long	<u>rVARs_CACHESIZE_</u>
static long	<u>rVARs_DIMCOUNTS_</u>
static long	<u>rVARs_DIMINDICES_</u>
static long	<u>rVARs_DIMINTERVALS_</u>
static long	<u>rVARs_DIMSIZES_</u>
static long	<u>rVARs_MAXREC_</u>
static long	<u>rVARs_NUMDIMS_</u>
static long	<u>rVARs_RECCOUNT_</u>
static long	<u>rVARs_RECADATA_</u>

static long	<u>rVARs_RECINTERVAL</u>
static long	<u>rVARs_RECNUMBER</u>
static long	<u>SAVE</u>
static long	<u>SCRATCH_CREATE_ERROR</u>
static long	<u>SCRATCH_DELETE_ERROR</u>
static long	<u>SCRATCH_READ_ERROR</u>
static long	<u>SCRATCH_WRITE_ERROR</u>
static long	<u>SELECT</u>
static long	<u>SGi_DECODING</u>
static long	<u>SGi_ENCODING</u>
static long	<u>SINGLE_FILE</u>
static long	<u>SINGLE_FILE_FORMAT</u>
static long	<u>SOME_ALREADY_ALLOCATED</u>
static long	<u>STAGE_CACHESIZE</u>
static long	<u>STATUS_TEXT</u>
static long	<u>SUN_DECODING</u>

static long	<u>SUN_ENCODING</u>
static long	<u>TOO_MANY_PARMS</u>
static long	<u>TOO_MANY_VARS</u>
static long	<u>UNKNOWN_COMPRESSION</u>
static long	<u>UNKNOWN_SPARSENESS</u>
static long	<u>UNSUPPORTED_OPERATION</u>
static long	<u>VAR_ALREADY_CLOSED</u>
static long	<u>VAR_CLOSE_ERROR</u>
static long	<u>VAR_CREATE_ERROR</u>
static long	<u>VAR_DELETE_ERROR</u>
static long	<u>VAR_EXISTS</u>
static long	<u>VAR_NAME_TRUNC</u>
static long	<u>VAR_OPEN_ERROR</u>
static long	<u>VAR_READ_ERROR</u>
static long	<u>VAR_WRITE_ERROR</u>
static long	<u>VARIABLE_SCOPE</u>

static long	<u>VARY</u>
static long	<u>VAX_DECODING</u>
static long	<u>VAX_ENCODING</u>
static long	<u>VIRTUAL_RECORD_DATA</u>
static long	<u>zENTRY_</u>
static long	<u>zENTRY_DATA</u>
static long	<u>zENTRY_DATASPEC</u>
static long	<u>zENTRY_DATATYPE</u>
static long	<u>zENTRY_EXISTENCE</u>
static long	<u>zENTRY_NAME</u>
static long	<u>zENTRY_NUMELEMS</u>
static long	<u>zMODEoff</u>
static long	<u>zMODEon1</u>
static long	<u>zMODEon2</u>
static long	<u>zVAR_</u>
static long	<u>zVAR_ALLOCATEBLOCK</u>

static long	<u>zVAR_ALLOCATEDFROM</u>
static long	<u>zVAR_ALLOCATEDTO</u>
static long	<u>zVAR_ALLOCATERECS</u>
static long	<u>zVAR_BLOCKINGFACTOR</u>
static long	<u>zVAR_CACHESIZE</u>
static long	<u>zVAR_COMPRESSION</u>
static long	<u>zVAR_DATA</u>
static long	<u>zVAR_DATASPEC</u>
static long	<u>zVAR_DATATYPE</u>
static long	<u>zVAR_DIMCOUNTS</u>
static long	<u>zVAR_DIMINDICES</u>
static long	<u>zVAR_DIMINTERVALS</u>
static long	<u>zVAR_DIMSIZES</u>
static long	<u>zVAR_DIMVARYS</u>
static long	<u>zVAR_EXISTENCE</u>
static long	<u>zVAR_HYPERDATA</u>

static long	<u>zVAR_INITIALRECS</u>
static long	<u>zVAR_MAXallocREC</u>
static long	<u>zVAR_MAXREC</u>
static long	<u>zVAR_NAME</u>
static long	<u>zVAR_nINDEXENTRIES</u>
static long	<u>zVAR_nINDEXLEVELS</u>
static long	<u>zVAR_nINDEXRECORDS</u>
static long	<u>zVAR_NUMallocRECS</u>
static long	<u>zVAR_NUMBER</u>
static long	<u>zVAR_NUMDIMS</u>
static long	<u>zVAR_NUMELEMS</u>
static long	<u>zVAR_NUMRECS</u>
static long	<u>zVAR_PADVALUE</u>
static long	<u>zVAR_RECCOUNT</u>
static long	<u>zVAR_RECINTERVAL</u>
static long	<u>zVAR_RECNUMBER</u>

static long	<u>zVAR_RECORDS_</u>
static long	<u>zVAR_RECVARY_</u>
static long	<u>zVAR_RESERVEPERCENT_</u>
static long	<u>zVAR_SEQDATA_</u>
static long	<u>zVAR_SEQPOS_</u>
static long	<u>zVAR_SPARSEARRAYS_</u>
static long	<u>zVAR_SPASERECORDS_</u>
static long	<u>zVARs_CACHESIZE_</u>
static long	<u>zVARs_MAXREC_</u>
static long	<u>zVARs_RECDATA_</u>
static long	<u>zVARs_RECNUMBER_</u>

Field Detail

CDF_MIN_DIMS

```
public static final long CDF_MIN_DIMS
```

See Also:

[Constant Field Values](#)

CDF_MAX_DIMS

```
public static final long CDF_MAX_DIMS
```

See Also:

[Constant Field Values](#)

CDF_VAR_NAME_LEN

```
public static final long CDF_VAR_NAME_LEN
```

See Also:

[Constant Field Values](#)

CDF_ATTR_NAME_LEN

```
public static final long CDF_ATTR_NAME_LEN
```

See Also:

[Constant Field Values](#)

CDF_COPYRIGHT_LEN

```
public static final long CDF_COPYRIGHT_LEN
```

See Also:

[Constant Field Values](#)

CDF_STATUSTEXT_LEN

```
public static final long CDF_STATUSTEXT_LEN
```

See Also:

[Constant Field Values](#)

CDF_PATHNAME_LEN

```
public static final long CDF_PATHNAME_LEN
```

See Also:

[Constant Field Values](#)

EPOCH_STRING_LEN

```
public static final long EPOCH_STRING_LEN
```

See Also:

[Constant Field Values](#)

EPOCH1_STRING_LEN

```
public static final long EPOCH1_STRING_LEN
```

See Also:

[Constant Field Values](#)

EPOCH2_STRING_LEN

```
public static final long EPOCH2_STRING_LEN
```

See Also:

[Constant Field Values](#)

EPOCH3_STRING_LEN

```
public static final long EPOCH3_STRING_LEN
```

See Also:

[Constant Field Values](#)

EPOCHx_STRING_MAX

```
public static final long EPOCHx_STRING_MAX
```

See Also:

[Constant Field Values](#)

EPOCHx_FORMAT_MAX

```
public static final long EPOCHx_FORMAT_MAX
```

See Also:

[Constant Field Values](#)

EPOCH_STRING_LEN_EXTEND

```
public static final long EPOCH_STRING_LEN_EXTEND
```

See Also:

[Constant Field Values](#)

EPOCH1_STRING_LEN_EXTEND

```
public static final long EPOCH1_STRING_LEN_EXTEND
```

See Also:

[Constant Field Values](#)

EPOCH2_STRING_LEN_EXTEND

```
public static final long EPOCH2_STRING_LEN_EXTEND
```

See Also:

[Constant Field Values](#)

EPOCH3_STRING_LEN_EXTEND

```
public static final long EPOCH3_STRING_LEN_EXTEND
```

See Also:

[Constant Field Values](#)

CDF_INT1

```
public static final long CDF_INT1
```

See Also:

[Constant Field Values](#)

CDF_INT2

```
public static final long CDF_INT2
```

See Also:

[Constant Field Values](#)

CDF_INT4

```
public static final long CDF_INT4
```

See Also:

[Constant Field Values](#)

CDF_UINT1

```
public static final long CDF_UINT1
```

See Also:

[Constant Field Values](#)

CDF_UINT2

```
public static final long CDF_UINT2
```

See Also:

[Constant Field Values](#)

CDF_UINT4

```
public static final long CDF_UINT4
```

See Also:

[Constant Field Values](#)

CDF_REAL4

```
public static final long CDF_REAL4
```

See Also:

[Constant Field Values](#)

CDF_REAL8

```
public static final long CDF_REAL8
```

See Also:

[Constant Field Values](#)

CDF_EPOCH

```
public static final long CDF_EPOCH
```

See Also:

[Constant Field Values](#)

CDF_EPOCH16

```
public static final long CDF_EPOCH16
```

See Also:

[Constant Field Values](#)

CDF_BYTE

```
public static final long CDF_BYTE
```

See Also:

[Constant Field Values](#)

CDF_FLOAT

```
public static final long CDF_FLOAT
```

See Also:

[Constant Field Values](#)

CDF_DOUBLE

```
public static final long CDF_DOUBLE
```

See Also:

[Constant Field Values](#)

CDF_CHAR

```
public static final long CDF_CHAR
```

See Also:

[Constant Field Values](#)

CDF_UCHAR

```
public static final long CDF_UCHAR
```

See Also:

[Constant Field Values](#)

NETWORK_ENCODING

public static final long **NETWORK_ENCODING**

See Also:

[Constant Field Values](#)

SUN_ENCODING

public static final long **SUN_ENCODING**

See Also:

[Constant Field Values](#)

VAX_ENCODING

public static final long **VAX_ENCODING**

See Also:

[Constant Field Values](#)

DECSTATION_ENCODING

public static final long **DECSTATION_ENCODING**

See Also:

[Constant Field Values](#)

SGi_ENCODING

public static final long **SGi_ENCODING**

See Also:

[Constant Field Values](#)

IBMPC_ENCODING

```
public static final long IBMPC_ENCODING
```

See Also:

[Constant Field Values](#)

IBMRS_ENCODING

```
public static final long IBMRS_ENCODING
```

See Also:

[Constant Field Values](#)

HOST_ENCODING

```
public static final long HOST_ENCODING
```

See Also:

[Constant Field Values](#)

MAC_ENCODING

```
public static final long MAC_ENCODING
```

See Also:

[Constant Field Values](#)

HP_ENCODING

public static final long **HP_ENCODING**

See Also:

[Constant Field Values](#)

NeXT_ENCODING

public static final long **NeXT_ENCODING**

See Also:

[Constant Field Values](#)

ALPHAOSF1_ENCODING

public static final long **ALPHAOSF1_ENCODING**

See Also:

[Constant Field Values](#)

ALPHAVMSd_ENCODING

public static final long **ALPHAVMSd_ENCODING**

See Also:

[Constant Field Values](#)

ALPHAVMSg_ENCODING

public static final long **ALPHAVMSg_ENCODING**

See Also:

[Constant Field Values](#)

ALPHAVMSi_ENCODING

```
public static final long ALPHAVMSi_ENCODING
```

See Also:

[Constant Field Values](#)

NETWORK_DECODING

```
public static final long NETWORK_DECODING
```

See Also:

[Constant Field Values](#)

SUN_DECODING

```
public static final long SUN_DECODING
```

See Also:

[Constant Field Values](#)

VAX_DECODING

```
public static final long VAX_DECODING
```

See Also:

[Constant Field Values](#)

DECSTATION_DECODING

```
public static final long DECSTATION_DECODING
```

See Also:

[Constant Field Values](#)

SGi_DECODING

```
public static final long SGi_DECODING
```

See Also:

[Constant Field Values](#)

IBMPC_DECODING

```
public static final long IBMPC_DECODING
```

See Also:

[Constant Field Values](#)

IBMRS_DECODING

```
public static final long IBMRS_DECODING
```

See Also:

[Constant Field Values](#)

HOST_DECODING

```
public static final long HOST_DECODING
```

See Also:

[Constant Field Values](#)

MAC_DECODING

```
public static final long MAC_DECODING
```

See Also:

[Constant Field Values](#)

HP_DECODING

```
public static final long HP_DECODING
```

See Also:

[Constant Field Values](#)

NeXT_DECODING

```
public static final long NeXT_DECODING
```

See Also:

[Constant Field Values](#)

ALPHAOSF1_DECODING

```
public static final long ALPHAOSF1_DECODING
```

See Also:

[Constant Field Values](#)

ALPHAVMSd_DECODING

public static final long **ALPHAVMSd_DECODING**

See Also:

[Constant Field Values](#)

ALPHAVMSg_DECODING

public static final long **ALPHAVMSg_DECODING**

See Also:

[Constant Field Values](#)

ALPHAVMSi_DECODING

public static final long **ALPHAVMSi_DECODING**

See Also:

[Constant Field Values](#)

VARY

public static final long **VARY**

See Also:

[Constant Field Values](#)

NOVARY

public static final long **NOVARY**

See Also:

[Constant Field Values](#)

ROW_MAJOR

public static final long **ROW_MAJOR**

See Also:

[Constant Field Values](#)

COLUMN_MAJOR

public static final long **COLUMN_MAJOR**

See Also:

[Constant Field Values](#)

SINGLE_FILE

public static final long **SINGLE_FILE**

See Also:

[Constant Field Values](#)

MULTI_FILE

public static final long **MULTI_FILE**

See Also:

[Constant Field Values](#)

GLOBAL_SCOPE

public static final long **GLOBAL_SCOPE**

See Also:

[Constant Field Values](#)

VARIABLE_SCOPE

public static final long **VARIABLE_SCOPE**

See Also:

[Constant Field Values](#)

READONLYon

public static final long **READONLYon**

See Also:

[Constant Field Values](#)

READONLYoff

public static final long **READONLYoff**

See Also:

[Constant Field Values](#)

zMODEoff

public static final long **zMODEoff**

See Also:

[Constant Field Values](#)

zMODEon1

public static final long **zMODEon1**

See Also:

[Constant Field Values](#)

zMODEon2

public static final long **zMODEon2**

See Also:

[Constant Field Values](#)

NEGtoPOSfp0on

public static final long **NEGtoPOSfp0on**

See Also:

[Constant Field Values](#)

NEGtoPOSfp0off

public static final long **NEGtoPOSfp0off**

See Also:

[Constant Field Values](#)

CDF_MAX_PARMS

```
public static final long CDF_MAX_PARMS
```

See Also:

[Constant Field Values](#)

NO_COMPRESSION

```
public static final long NO_COMPRESSION
```

See Also:

[Constant Field Values](#)

RLE_COMPRESSION

```
public static final long RLE_COMPRESSION
```

See Also:

[Constant Field Values](#)

HUFF_COMPRESSION

```
public static final long HUFF_COMPRESSION
```

See Also:

[Constant Field Values](#)

AHUFF_COMPRESSION

```
public static final long AHUFF_COMPRESSION
```

See Also:

[Constant Field Values](#)

GZIP_COMPRESSION

```
public static final long GZIP_COMPRESSION
```

See Also:

[Constant Field Values](#)

RLE_OF_ZEROS

```
public static final long RLE_OF_ZEROS
```

See Also:

[Constant Field Values](#)

OPTIMAL_ENCODING_TREES

```
public static final long OPTIMAL_ENCODING_TREES
```

See Also:

[Constant Field Values](#)

NO_SPARSEARRAYS

```
public static final long NO_SPARSEARRAYS
```

See Also:

[Constant Field Values](#)

NO_SPARSERECORDS

```
public static final long NO_SPARSERECORDS
```

See Also:

[Constant Field Values](#)

PAD_SPARSERECORDS

```
public static final long PAD_SPARSERECORDS
```

See Also:

[Constant Field Values](#)

PREV_SPARSERECORDS

```
public static final long PREV_SPARSERECORDS
```

See Also:

[Constant Field Values](#)

DEFAULT_BYTE_PADVALUE

```
public static final byte DEFAULT_BYTE_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_INT1_PADVALUE

```
public static final byte DEFAULT_INT1_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_UINT1_PADVALUE

```
public static final short DEFAULT_UINT1_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_INT2_PADVALUE

```
public static final short DEFAULT_INT2_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_UINT2_PADVALUE

```
public static final int DEFAULT_UINT2_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_INT4_PADVALUE

```
public static final int DEFAULT_INT4_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_UINT4_PADVALUE

```
public static final long DEFAULT_UINT4_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_REAL4_PADVALUE

```
public static final float DEFAULT_REAL4_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_FLOAT_PADVALUE

```
public static final float DEFAULT_FLOAT_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_REAL8_PADVALUE

```
public static final double DEFAULT_REAL8_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_DOUBLE_PADVALUE

```
public static final double DEFAULT_DOUBLE_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_CHAR_PADVALUE

```
public static final char DEFAULT_CHAR_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_UCHAR_PADVALUE

```
public static final char DEFAULT_UCHAR_PADVALUE
```

See Also:

[Constant Field Values](#)

DEFAULT_EPOCH_PADVALUE

```
public static final double DEFAULT_EPOCH_PADVALUE
```

See Also:

[Constant Field Values](#)

ILLEGAL_EPOCH_VALUE

public static final long **ILLEGAL_EPOCH_VALUE**

See Also:

[Constant Field Values](#)

VIRTUAL_RECORD_DATA

public static final long **VIRTUAL_RECORD_DATA**

See Also:

[Constant Field Values](#)

DID_NOT_COMPRESS

public static final long **DID_NOT_COMPRESS**

See Also:

[Constant Field Values](#)

VAR_ALREADY_CLOSED

public static final long **VAR_ALREADY_CLOSED**

See Also:

[Constant Field Values](#)

SINGLE_FILE_FORMAT

public static final long **SINGLE_FILE_FORMAT**

See Also:

[Constant Field Values](#)

NO_PADVALUE_SPECIFIED

```
public static final long NO_PADVALUE_SPECIFIED
```

See Also:

[Constant Field Values](#)

NO_VARS_IN_CDF

```
public static final long NO_VARS_IN_CDF
```

See Also:

[Constant Field Values](#)

MULTI_FILE_FORMAT

```
public static final long MULTI_FILE_FORMAT
```

See Also:

[Constant Field Values](#)

SOME_ALREADY_ALLOCATED

```
public static final long SOME_ALREADY_ALLOCATED
```

See Also:

[Constant Field Values](#)

PRECEEDING_RECORDS_ALLOCATED

public static final long **PRECEEDING_RECORDS_ALLOCATED**

See Also:

[Constant Field Values](#)

CDF_OK

public static final long **CDF_OK**

See Also:

[Constant Field Values](#)

ATTR_NAME_TRUNC

public static final long **ATTR_NAME_TRUNC**

See Also:

[Constant Field Values](#)

CDF_NAME_TRUNC

public static final long **CDF_NAME_TRUNC**

See Also:

[Constant Field Values](#)

VAR_NAME_TRUNC

public static final long **VAR_NAME_TRUNC**

See Also:

[Constant Field Values](#)

NEGATIVE_FP_ZERO

```
public static final long NEGATIVE_FP_ZERO
```

See Also:

[Constant Field Values](#)

FORCED_PARAMETER

```
public static final long FORCED_PARAMETER
```

See Also:

[Constant Field Values](#)

NA_FOR_VARIABLE

```
public static final long NA_FOR_VARIABLE
```

See Also:

[Constant Field Values](#)

CDF_WARN

```
public static final long CDF_WARN
```

See Also:

[Constant Field Values](#)

ATTR_EXISTS

```
public static final long ATTR_EXISTS
```

See Also:

[Constant Field Values](#)

BAD_CDF_ID

```
public static final long BAD_CDF_ID
```

See Also:

[Constant Field Values](#)

BAD_DATA_TYPE

```
public static final long BAD_DATA_TYPE
```

See Also:

[Constant Field Values](#)

BAD_DIM_SIZE

```
public static final long BAD_DIM_SIZE
```

See Also:

[Constant Field Values](#)

BAD_DIM_INDEX

```
public static final long BAD_DIM_INDEX
```

See Also:

[Constant Field Values](#)

BAD_ENCODING

```
public static final long BAD_ENCODING
```

See Also:

[Constant Field Values](#)

BAD_MAJORITY

```
public static final long BAD_MAJORITY
```

See Also:

[Constant Field Values](#)

BAD_NUM_DIMS

```
public static final long BAD_NUM_DIMS
```

See Also:

[Constant Field Values](#)

BAD_REC_NUM

```
public static final long BAD_REC_NUM
```

See Also:

[Constant Field Values](#)

BAD_SCOPE

```
public static final long BAD_SCOPE
```

See Also:

[Constant Field Values](#)

BAD_NUM_ELEMS

```
public static final long BAD_NUM_ELEMS
```

See Also:

[Constant Field Values](#)

CDF_OPEN_ERROR

```
public static final long CDF_OPEN_ERROR
```

See Also:

[Constant Field Values](#)

CDF_EXISTS

```
public static final long CDF_EXISTS
```

See Also:

[Constant Field Values](#)

BAD_FORMAT

```
public static final long BAD_FORMAT
```

See Also:

[Constant Field Values](#)

BAD_ALLOCATE_RECS

```
public static final long BAD_ALLOCATE_RECS
```

See Also:

[Constant Field Values](#)

BAD_CDF_EXTENSION

```
public static final long BAD_CDF_EXTENSION
```

See Also:

[Constant Field Values](#)

NO_SUCH_ATTR

```
public static final long NO_SUCH_ATTR
```

See Also:

[Constant Field Values](#)

NO_SUCH_ENTRY

```
public static final long NO_SUCH_ENTRY
```

See Also:

[Constant Field Values](#)

NO_SUCH_VAR

```
public static final long NO_SUCH_VAR
```

See Also:

[Constant Field Values](#)

VAR_READ_ERROR

```
public static final long VAR_READ_ERROR
```

See Also:

[Constant Field Values](#)

VAR_WRITE_ERROR

```
public static final long VAR_WRITE_ERROR
```

See Also:

[Constant Field Values](#)

BAD_ARGUMENT

```
public static final long BAD_ARGUMENT
```

See Also:

[Constant Field Values](#)

IBM_PC_OVERFLOW


```
public static final long IBM_PC_OVERFLOW
```

See Also:

[Constant Field Values](#)

TOO_MANY_VARS

```
public static final long TOO_MANY_VARS
```

See Also:

[Constant Field Values](#)

VAR_EXISTS

```
public static final long VAR_EXISTS
```

See Also:

[Constant Field Values](#)

BAD_MALLOC

```
public static final long BAD_MALLOC
```

See Also:

[Constant Field Values](#)

NOT_A_CDF

```
public static final long NOT_A_CDF
```

See Also:

[Constant Field Values](#)

CORRUPTED_V2_CDF

```
public static final long CORRUPTED_V2_CDF
```

See Also:

[Constant Field Values](#)

VAR_OPEN_ERROR

```
public static final long VAR_OPEN_ERROR
```

See Also:

[Constant Field Values](#)

BAD_INITIAL_RECS

```
public static final long BAD_INITIAL_RECS
```

See Also:

[Constant Field Values](#)

BAD_BLOCKING_FACTOR

```
public static final long BAD_BLOCKING_FACTOR
```

See Also:

[Constant Field Values](#)

END_OF_VAR

public static final long **END_OF_VAR**

See Also:

[Constant Field Values](#)

BAD_CDFSTATUS

public static final long **BAD_CDFSTATUS**

See Also:

[Constant Field Values](#)

CDF_INTERNAL_ERROR

public static final long **CDF_INTERNAL_ERROR**

See Also:

[Constant Field Values](#)

BAD_NUM_VARS

public static final long **BAD_NUM_VARS**

See Also:

[Constant Field Values](#)

BAD_REC_COUNT

public static final long **BAD_REC_COUNT**

See Also:

[Constant Field Values](#)

BAD_REC_INTERVAL

```
public static final long BAD_REC_INTERVAL
```

See Also:

[Constant Field Values](#)

BAD_DIM_COUNT

```
public static final long BAD_DIM_COUNT
```

See Also:

[Constant Field Values](#)

BAD_DIM_INTERVAL

```
public static final long BAD_DIM_INTERVAL
```

See Also:

[Constant Field Values](#)

BAD_VAR_NUM

```
public static final long BAD_VAR_NUM
```

See Also:

[Constant Field Values](#)

BAD_ATTR_NUM

public static final long **BAD_ATTR_NUM**

See Also:

[Constant Field Values](#)

BAD_ENTRY_NUM

public static final long **BAD_ENTRY_NUM**

See Also:

[Constant Field Values](#)

BAD_ATTR_NAME

public static final long **BAD_ATTR_NAME**

See Also:

[Constant Field Values](#)

BAD_VAR_NAME

public static final long **BAD_VAR_NAME**

See Also:

[Constant Field Values](#)

NO_ATTR_SELECTED

public static final long **NO_ATTR_SELECTED**

See Also:

[Constant Field Values](#)

NO_ENTRY_SELECTED

```
public static final long NO_ENTRY_SELECTED
```

See Also:

[Constant Field Values](#)

NO_VAR_SELECTED

```
public static final long NO_VAR_SELECTED
```

See Also:

[Constant Field Values](#)

BAD_CDF_NAME

```
public static final long BAD_CDF_NAME
```

See Also:

[Constant Field Values](#)

CANNOT_CHANGE

```
public static final long CANNOT_CHANGE
```

See Also:

[Constant Field Values](#)

NO_STATUS_SELECTED

```
public static final long NO_STATUS_SELECTED
```

See Also:

[Constant Field Values](#)

NO_CDF_SELECTED

```
public static final long NO_CDF_SELECTED
```

See Also:

[Constant Field Values](#)

READ_ONLY_DISTRIBUTION

```
public static final long READ_ONLY_DISTRIBUTION
```

See Also:

[Constant Field Values](#)

CDF_CLOSE_ERROR

```
public static final long CDF_CLOSE_ERROR
```

See Also:

[Constant Field Values](#)

VAR_CLOSE_ERROR

```
public static final long VAR_CLOSE_ERROR
```

See Also:

[Constant Field Values](#)

BAD_FNC_OR_ITEM

```
public static final long BAD_FNC_OR_ITEM
```

See Also:

[Constant Field Values](#)

ILLEGAL_ON_V1_CDF

```
public static final long ILLEGAL_ON_V1_CDF
```

See Also:

[Constant Field Values](#)

BAD_CACHE_SIZE

```
public static final long BAD_CACHE_SIZE
```

See Also:

[Constant Field Values](#)

CDF_CREATE_ERROR

```
public static final long CDF_CREATE_ERROR
```

See Also:

[Constant Field Values](#)

NO_SUCH_CDF

```
public static final long NO_SUCH_CDF
```

See Also:

[Constant Field Values](#)

VAR_CREATE_ERROR

```
public static final long VAR_CREATE_ERROR
```

See Also:

[Constant Field Values](#)

READ_ONLY_MODE

```
public static final long READ_ONLY_MODE
```

See Also:

[Constant Field Values](#)

ILLEGAL_IN_zMODE

```
public static final long ILLEGAL_IN_zMODE
```

See Also:

[Constant Field Values](#)

BAD_zMODE

```
public static final long BAD_zMODE
```

See Also:

[Constant Field Values](#)

BAD_READONLY_MODE

```
public static final long BAD_READONLY_MODE
```

See Also:

[Constant Field Values](#)

CDF_READ_ERROR

```
public static final long CDF_READ_ERROR
```

See Also:

[Constant Field Values](#)

CDF_WRITE_ERROR

```
public static final long CDF_WRITE_ERROR
```

See Also:

[Constant Field Values](#)

ILLEGAL_FOR_SCOPE

```
public static final long ILLEGAL_FOR_SCOPE
```

See Also:

[Constant Field Values](#)

NO_MORE_ACCESS

```
public static final long NO_MORE_ACCESS
```

See Also:

[Constant Field Values](#)

BAD_DECODING

```
public static final long BAD_DECODING
```

See Also:

[Constant Field Values](#)

BAD_NEGtoPOSfp0_MODE

```
public static final long BAD_NEGtoPOSfp0_MODE
```

See Also:

[Constant Field Values](#)

UNSUPPORTED_OPERATION

```
public static final long UNSUPPORTED_OPERATION
```

See Also:

[Constant Field Values](#)

NO_WRITE_ACCESS

```
public static final long NO_WRITE_ACCESS
```

See Also:

[Constant Field Values](#)

NO_DELETE_ACCESS

```
public static final long NO_DELETE_ACCESS
```

See Also:

[Constant Field Values](#)

CDF_DELETE_ERROR

```
public static final long CDF_DELETE_ERROR
```

See Also:

[Constant Field Values](#)

VAR_DELETE_ERROR

```
public static final long VAR_DELETE_ERROR
```

See Also:

[Constant Field Values](#)

UNKNOWN_COMPRESSION

```
public static final long UNKNOWN_COMPRESSION
```

See Also:

[Constant Field Values](#)

CANNOT_COMPRESS

```
public static final long CANNOT_COMPRESS
```

See Also:

[Constant Field Values](#)

DECOMPRESSION_ERROR

```
public static final long DECOMPRESSION_ERROR
```

See Also:

[Constant Field Values](#)

COMPRESSION_ERROR

```
public static final long COMPRESSION_ERROR
```

See Also:

[Constant Field Values](#)

EMPTY_COMPRESSED_CDF

```
public static final long EMPTY_COMPRESSED_CDF
```

See Also:

[Constant Field Values](#)

BAD_COMPRESSION_PARM

```
public static final long BAD_COMPRESSION_PARM
```

See Also:

[Constant Field Values](#)

UNKNOWN_SPARSENESS

```
public static final long UNKNOWN_SPARSENESS
```

See Also:

[Constant Field Values](#)

CANNOT_SPARSERECORDS

```
public static final long CANNOT_SPARSERECORDS
```

See Also:

[Constant Field Values](#)

CANNOT_SPARSEARRAYS

```
public static final long CANNOT_SPARSEARRAYS
```

See Also:

[Constant Field Values](#)

TOO_MANY_PARMS

```
public static final long TOO_MANY_PARMS
```

See Also:

[Constant Field Values](#)

NO_SUCH_RECORD

```
public static final long NO_SUCH_RECORD
```

See Also:

[Constant Field Values](#)

CANNOT_ALLOCATE_RECORDS

```
public static final long CANNOT_ALLOCATE_RECORDS
```

See Also:

[Constant Field Values](#)

CANNOT_COPY

```
public static final long CANNOT_COPY
```

See Also:

[Constant Field Values](#)

SCRATCH_DELETE_ERROR

```
public static final long SCRATCH_DELETE_ERROR
```

See Also:

[Constant Field Values](#)

SCRATCH_CREATE_ERROR

```
public static final long SCRATCH_CREATE_ERROR
```

See Also:

[Constant Field Values](#)

SCRATCH_READ_ERROR

```
public static final long SCRATCH_READ_ERROR
```

See Also:

[Constant Field Values](#)

SCRATCH_WRITE_ERROR

```
public static final long SCRATCH_WRITE_ERROR
```

See Also:

[Constant Field Values](#)

BAD_SPARSEARRAYS_PARM

```
public static final long BAD_SPARSEARRAYS_PARM
```

See Also:

[Constant Field Values](#)

BAD_SCRATCH_DIR

```
public static final long BAD_SCRATCH_DIR
```


See Also:

[Constant Field Values](#)

DATATYPE_MISMATCH

```
public static final long DATATYPE_MISMATCH
```

See Also:

[Constant Field Values](#)

NOT_A_CDF_OR_NOT_SUPPORTED

```
public static final long NOT_A_CDF_OR_NOT_SUPPORTED
```

See Also:

[Constant Field Values](#)

CORRUPTED_V3_CDF

```
public static final long CORRUPTED_V3_CDF
```

See Also:

[Constant Field Values](#)

ILLEGAL_EPOCH_FIELD

```
public static final long ILLEGAL_EPOCH_FIELD
```

See Also:

[Constant Field Values](#)

CREATE_

public static final long **CREATE_**

See Also:

[Constant Field Values](#)

OPEN_

public static final long **OPEN_**

See Also:

[Constant Field Values](#)

DELETE_

public static final long **DELETE_**

See Also:

[Constant Field Values](#)

CLOSE_

public static final long **CLOSE_**

See Also:

[Constant Field Values](#)

SELECT_

public static final long **SELECT_**

See Also:

[Constant Field Values](#)

CONFIRM_

public static final long **CONFIRM_**

See Also:

[Constant Field Values](#)

GET_

public static final long **GET_**

See Also:

[Constant Field Values](#)

PUT_

public static final long **PUT_**

See Also:

[Constant Field Values](#)

SAVE_

public static final long **SAVE_**

See Also:

[Constant Field Values](#)

NULL_

public static final long **NULL_**

See Also:

[Constant Field Values](#)

CDF_

public static final long **CDF_**

See Also:

[Constant Field Values](#)

CDF_NAME_

public static final long **CDF_NAME_**

See Also:

[Constant Field Values](#)

CDF_ENCODING_

public static final long **CDF_ENCODING_**

See Also:

[Constant Field Values](#)

CDF_DECODING_

public static final long **CDF_DECODING_**

See Also:

[Constant Field Values](#)

CDF_MAJORITY_

public static final long **CDF_MAJORITY_**

See Also:

[Constant Field Values](#)

CDF_FORMAT_

public static final long **CDF_FORMAT_**

See Also:

[Constant Field Values](#)

CDF_COPYRIGHT_

public static final long **CDF_COPYRIGHT_**

See Also:

[Constant Field Values](#)

CDF_NUMrVARS_

public static final long **CDF_NUMrVARS_**

See Also:

[Constant Field Values](#)

CDF_NUMzVARS_

```
public static final long CDF_NUMzVARS_
```

See Also:[Constant Field Values](#)

CDF_NUMATTRS_

```
public static final long CDF_NUMATTRS_
```

See Also:[Constant Field Values](#)

CDF_NUMgATTRS_

```
public static final long CDF_NUMgATTRS_
```

See Also:[Constant Field Values](#)

CDF_NUMvATTRS_

```
public static final long CDF_NUMvATTRS_
```

See Also:[Constant Field Values](#)

CDF_VERSION_

public static final long **CDF_VERSION_**

See Also:

[Constant Field Values](#)

CDF_RELEASE_

public static final long **CDF_RELEASE_**

See Also:

[Constant Field Values](#)

CDF_INCREMENT_

public static final long **CDF_INCREMENT_**

See Also:

[Constant Field Values](#)

CDF_STATUS_

public static final long **CDF_STATUS_**

See Also:

[Constant Field Values](#)

CDF_READONLY_MODE_

public static final long **CDF_READONLY_MODE_**

See Also:

[Constant Field Values](#)

CDF_zMODE_

```
public static final long CDF_zMODE_
```

See Also:

[Constant Field Values](#)

CDF_NEGtoPOSfp0_MODE_

```
public static final long CDF_NEGtoPOSfp0_MODE_
```

See Also:

[Constant Field Values](#)

LIB_COPYRIGHT_

```
public static final long LIB_COPYRIGHT_
```

See Also:

[Constant Field Values](#)

LIB_VERSION_

```
public static final long LIB_VERSION_
```

See Also:

[Constant Field Values](#)

LIB_RELEASE_

```
public static final long LIB_RELEASE_
```

See Also:

[Constant Field Values](#)

LIB_INCREMENT_

```
public static final long LIB_INCREMENT_
```

See Also:

[Constant Field Values](#)

LIB_subINCREMENT_

```
public static final long LIB_subINCREMENT_
```

See Also:

[Constant Field Values](#)

rVARs_NUMDIMS_

```
public static final long rVARs_NUMDIMS_
```

See Also:

[Constant Field Values](#)

rVARs_DIMSIZES_

```
public static final long rVARs_DIMSIZES_
```

See Also:

[Constant Field Values](#)

rVARs_MAXREC_

```
public static final long rVARs_MAXREC_
```

See Also:

[Constant Field Values](#)

rVARs_RECDATA_

```
public static final long rVARs_RECDATA_
```

See Also:

[Constant Field Values](#)

rVARs_RECNUMBER_

```
public static final long rVARs_RECNUMBER_
```

See Also:

[Constant Field Values](#)

rVARs_RECCOUNT_

```
public static final long rVARs_RECCOUNT_
```

See Also:

[Constant Field Values](#)

rVARs_RECINTERVAL_

```
public static final long rVARs_RECINTERVAL_
```

See Also:

[Constant Field Values](#)

rVARs_DIMINDICES_

```
public static final long rVARs_DIMINDICES_
```

See Also:

[Constant Field Values](#)

rVARs_DIMCOUNTS_

```
public static final long rVARs_DIMCOUNTS_
```

See Also:

[Constant Field Values](#)

rVARs_DIMINTERVALS_

```
public static final long rVARs_DIMINTERVALS_
```

See Also:

[Constant Field Values](#)

rVAR_

public static final long **rVAR_**

See Also:

[Constant Field Values](#)

rVAR_NAME_

public static final long **rVAR_NAME_**

See Also:

[Constant Field Values](#)

rVAR_DATATYPE_

public static final long **rVAR_DATATYPE_**

See Also:

[Constant Field Values](#)

rVAR_NUMELEMS_

public static final long **rVAR_NUMELEMS_**

See Also:

[Constant Field Values](#)

rVAR_RECVARY_

public static final long **rVAR_RECVARY_**

See Also:

[Constant Field Values](#)

rVAR_DIMVARYS_

```
public static final long rVAR_DIMVARYS_
```

See Also:

[Constant Field Values](#)

rVAR_NUMBER_

```
public static final long rVAR_NUMBER_
```

See Also:

[Constant Field Values](#)

rVAR_DATA_

```
public static final long rVAR_DATA_
```

See Also:

[Constant Field Values](#)

rVAR_HYPERDATA_

```
public static final long rVAR_HYPERDATA_
```

See Also:

[Constant Field Values](#)

rVAR_SEQDATA_

```
public static final long rVAR_SEQDATA_
```

See Also:

[Constant Field Values](#)

rVAR_SEQPOS_

```
public static final long rVAR_SEQPOS_
```

See Also:

[Constant Field Values](#)

rVAR_MAXREC_

```
public static final long rVAR_MAXREC_
```

See Also:

[Constant Field Values](#)

rVAR_MAXallocREC_

```
public static final long rVAR_MAXallocREC_
```

See Also:

[Constant Field Values](#)

rVAR_DATASPEC_

```
public static final long rVAR_DATASPEC_
```

See Also:

[Constant Field Values](#)

rVAR_PADVALUE_

```
public static final long rVAR_PADVALUE_
```

See Also:[Constant Field Values](#)

rVAR_INITIALRECS_

```
public static final long rVAR_INITIALRECS_
```

See Also:[Constant Field Values](#)

rVAR_BLOCKINGFACTOR_

```
public static final long rVAR_BLOCKINGFACTOR_
```

See Also:[Constant Field Values](#)

rVAR_nINDEXRECORDS_

```
public static final long rVAR_nINDEXRECORDS_
```

See Also:[Constant Field Values](#)

rVAR_nINDEXENTRIES_

```
public static final long rVAR_nINDEXENTRIES_
```

See Also:

[Constant Field Values](#)

rVAR_EXISTENCE_

```
public static final long rVAR_EXISTENCE_
```

See Also:

[Constant Field Values](#)

zVARs_MAXREC_

```
public static final long zVARs_MAXREC_
```

See Also:

[Constant Field Values](#)

zVARs_RECADATA_

```
public static final long zVARs_RECADATA_
```

See Also:

[Constant Field Values](#)

zVAR_

```
public static final long zVAR_
```


See Also:

[Constant Field Values](#)

zVAR_NAME_

```
public static final long zVAR_NAME_
```

See Also:

[Constant Field Values](#)

zVAR_DATATYPE_

```
public static final long zVAR_DATATYPE_
```

See Also:

[Constant Field Values](#)

zVAR_NUMELEMS_

```
public static final long zVAR_NUMELEMS_
```

See Also:

[Constant Field Values](#)

zVAR_NUMDIMS_

```
public static final long zVAR_NUMDIMS_
```

See Also:

[Constant Field Values](#)

zVAR_DIMSIZES_

public static final long **zVAR_DIMSIZES_**

See Also:

[Constant Field Values](#)

zVAR_RECVARY_

public static final long **zVAR_RECVARY_**

See Also:

[Constant Field Values](#)

zVAR_DIMVARYS_

public static final long **zVAR_DIMVARYS_**

See Also:

[Constant Field Values](#)

zVAR_NUMBER_

public static final long **zVAR_NUMBER_**

See Also:

[Constant Field Values](#)

zVAR_DATA_

public static final long **zVAR_DATA_**

See Also:

[Constant Field Values](#)

zVAR_HYPERDATA_

public static final long **zVAR_HYPERDATA_**

See Also:

[Constant Field Values](#)

zVAR_SEQDATA_

public static final long **zVAR_SEQDATA_**

See Also:

[Constant Field Values](#)

zVAR_SEQPOS_

public static final long **zVAR_SEQPOS_**

See Also:

[Constant Field Values](#)

zVAR_MAXREC_

public static final long **zVAR_MAXREC_**

See Also:

[Constant Field Values](#)

zVAR_MAXallocREC_

```
public static final long zVAR_MAXallocREC_
```

See Also:

[Constant Field Values](#)

zVAR_DATASPEC_

```
public static final long zVAR_DATASPEC_
```

See Also:

[Constant Field Values](#)

zVAR_PADVALUE_

```
public static final long zVAR_PADVALUE_
```

See Also:

[Constant Field Values](#)

zVAR_INITIALRECS_

```
public static final long zVAR_INITIALRECS_
```

See Also:

[Constant Field Values](#)

zVAR_BLOCKINGFACTOR_

public static final long **zVAR_BLOCKINGFACTOR_**

See Also:

[Constant Field Values](#)

zVAR_nINDEXRECORDS_

public static final long **zVAR_nINDEXRECORDS_**

See Also:

[Constant Field Values](#)

zVAR_nINDEXENTRIES_

public static final long **zVAR_nINDEXENTRIES_**

See Also:

[Constant Field Values](#)

zVAR_EXISTENCE_

public static final long **zVAR_EXISTENCE_**

See Also:

[Constant Field Values](#)

zVAR_RECNUMBER_

public static final long **zVAR_RECNUMBER_**

See Also:

[Constant Field Values](#)

zVAR_RECCOUNT_

```
public static final long zVAR_RECCOUNT_
```

See Also:

[Constant Field Values](#)

zVAR_RECINTERVAL_

```
public static final long zVAR_RECINTERVAL_
```

See Also:

[Constant Field Values](#)

zVAR_DIMINDICES_

```
public static final long zVAR_DIMINDICES_
```

See Also:

[Constant Field Values](#)

zVAR_DIMCOUNTS_

```
public static final long zVAR_DIMCOUNTS_
```

See Also:

[Constant Field Values](#)

zVAR_DIMINTERVALS_

public static final long **ZVAR_DIMINTERVALS_**

See Also:

[Constant Field Values](#)

ATTR_

public static final long **ATTR_**

See Also:

[Constant Field Values](#)

ATTR_SCOPE_

public static final long **ATTR_SCOPE_**

See Also:

[Constant Field Values](#)

ATTR_NAME_

public static final long **ATTR_NAME_**

See Also:

[Constant Field Values](#)

ATTR_NUMBER_

public static final long **ATTR_NUMBER_**

See Also:

[Constant Field Values](#)

ATTR_MAXgENTRY_

public static final long **ATTR_MAXgENTRY_**

See Also:

[Constant Field Values](#)

ATTR_NUMgENTRIES_

public static final long **ATTR_NUMgENTRIES_**

See Also:

[Constant Field Values](#)

ATTR_MAXrENTRY_

public static final long **ATTR_MAXrENTRY_**

See Also:

[Constant Field Values](#)

ATTR_NUMrENTRIES_

public static final long **ATTR_NUMrENTRIES_**

See Also:

[Constant Field Values](#)

ATTR_MAXzENTRY_

public static final long **ATTR_MAXzENTRY_**

See Also:

[Constant Field Values](#)

ATTR_NUMzENTRIES_

public static final long **ATTR_NUMzENTRIES_**

See Also:

[Constant Field Values](#)

ATTR_EXISTENCE_

public static final long **ATTR_EXISTENCE_**

See Also:

[Constant Field Values](#)

gENTRY_

public static final long **gENTRY_**

See Also:

[Constant Field Values](#)

gENTRY_EXISTENCE_

public static final long **gENTRY_EXISTENCE_**

See Also:

[Constant Field Values](#)

gENTRY_DATATYPE_

public static final long **gENTRY_DATATYPE_**

See Also:

[Constant Field Values](#)

gENTRY_NUMELEMS_

public static final long **gENTRY_NUMELEMS_**

See Also:

[Constant Field Values](#)

gENTRY_DATASPEC_

public static final long **gENTRY_DATASPEC_**

See Also:

[Constant Field Values](#)

gENTRY_DATA_

public static final long **gENTRY_DATA_**

See Also:

[Constant Field Values](#)

rENTRY_

```
public static final long rENTRY_
```

See Also:

[Constant Field Values](#)

rENTRY_NAME_

```
public static final long rENTRY_NAME_
```

See Also:

[Constant Field Values](#)

rENTRY_EXISTENCE_

```
public static final long rENTRY_EXISTENCE_
```

See Also:

[Constant Field Values](#)

rENTRY_DATATYPE_

```
public static final long rENTRY_DATATYPE_
```

See Also:

[Constant Field Values](#)

rENTRY_NUMELEMS_

```
public static final long rENTRY_NUMELEMS_
```

See Also:

[Constant Field Values](#)

rENTRY_DATASPEC_

public static final long **rENTRY_DATASPEC_**

See Also:

[Constant Field Values](#)

rENTRY_DATA_

public static final long **rENTRY_DATA_**

See Also:

[Constant Field Values](#)

zENTRY_

public static final long **zENTRY_**

See Also:

[Constant Field Values](#)

zENTRY_NAME_

public static final long **zENTRY_NAME_**

See Also:

[Constant Field Values](#)

zENTRY_EXISTENCE_

```
public static final long zENTRY_EXISTENCE_
```

See Also:

[Constant Field Values](#)

zENTRY_DATATYPE_

```
public static final long zENTRY_DATATYPE_
```

See Also:

[Constant Field Values](#)

zENTRY_NUMELEMS_

```
public static final long zENTRY_NUMELEMS_
```

See Also:

[Constant Field Values](#)

zENTRY_DATASPEC_

```
public static final long zENTRY_DATASPEC_
```

See Also:

[Constant Field Values](#)

zENTRY_DATA_

public static final long **zENTRY_DATA_**

See Also:

[Constant Field Values](#)

STATUS_TEXT_

public static final long **STATUS_TEXT_**

See Also:

[Constant Field Values](#)

CDF_CACHESIZE_

public static final long **CDF_CACHESIZE_**

See Also:

[Constant Field Values](#)

rVARs_CACHESIZE_

public static final long **rVARs_CACHESIZE_**

See Also:

[Constant Field Values](#)

zVARs_CACHESIZE_

public static final long **zVARs_CACHESIZE_**

See Also:

[Constant Field Values](#)

rVAR_CACHESIZE_

```
public static final long rVAR_CACHESIZE_
```

See Also:

[Constant Field Values](#)

zVAR_CACHESIZE_

```
public static final long zVAR_CACHESIZE_
```

See Also:

[Constant Field Values](#)

zVARs_RECNUMBER_

```
public static final long zVARs_RECNUMBER_
```

See Also:

[Constant Field Values](#)

rVAR_ALLOCATERECS_

```
public static final long rVAR_ALLOCATERECS_
```

See Also:

[Constant Field Values](#)

zVAR_ALLOCATERECS_

```
public static final long zVAR_ALLOCATERECS_
```

See Also:

[Constant Field Values](#)

DATATYPE_SIZE_

```
public static final long DATATYPE_SIZE_
```

See Also:

[Constant Field Values](#)

CURgENTRY_EXISTENCE_

```
public static final long CURgENTRY_EXISTENCE_
```

See Also:

[Constant Field Values](#)

CURrENTRY_EXISTENCE_

```
public static final long CURrENTRY_EXISTENCE_
```

See Also:

[Constant Field Values](#)

CURzENTRY_EXISTENCE_

```
public static final long CURzENTRY_EXISTENCE_
```

See Also:

[Constant Field Values](#)

CDF_INFO_

public static final long **CDF_INFO_**

See Also:

[Constant Field Values](#)

CDF_COMPRESSION_

public static final long **CDF_COMPRESSION_**

See Also:

[Constant Field Values](#)

zVAR_COMPRESSION_

public static final long **zVAR_COMPRESSION_**

See Also:

[Constant Field Values](#)

zVAR_SPARSERECORDS_

public static final long **zVAR_SPARSERECORDS_**

See Also:

[Constant Field Values](#)

zVAR_SPARSEARRAYS_

```
public static final long zVAR_SPARSEARRAYS_
```

See Also:

[Constant Field Values](#)

zVAR_ALLOCATEBLOCK_

```
public static final long zVAR_ALLOCATEBLOCK_
```

See Also:

[Constant Field Values](#)

zVAR_NUMRECS_

```
public static final long zVAR_NUMRECS_
```

See Also:

[Constant Field Values](#)

zVAR_NUMAllocRECS_

```
public static final long zVAR_NUMAllocRECS_
```

See Also:

[Constant Field Values](#)

rVAR_COMPRESSION_

```
public static final long rVAR_COMPRESSION_
```

See Also:

[Constant Field Values](#)

rVAR_SPARSERECORDS_

```
public static final long rVAR_SPARSERECORDS_
```

See Also:

[Constant Field Values](#)

rVAR_SPARSEARRAYS_

```
public static final long rVAR_SPARSEARRAYS_
```

See Also:

[Constant Field Values](#)

rVAR_ALLOCATEBLOCK_

```
public static final long rVAR_ALLOCATEBLOCK_
```

See Also:

[Constant Field Values](#)

rVAR_NUMRECS_

```
public static final long rVAR_NUMRECS_
```

See Also:

[Constant Field Values](#)

rVAR_NUMAllocRECS_

```
public static final long rVAR_NUMAllocRECS_
```

See Also:

[Constant Field Values](#)

rVAR_ALLOCATEDFROM_

```
public static final long rVAR_ALLOCATEDFROM_
```

See Also:

[Constant Field Values](#)

rVAR_ALLOCATEDTO_

```
public static final long rVAR_ALLOCATEDTO_
```

See Also:

[Constant Field Values](#)

zVAR_ALLOCATEDFROM_

```
public static final long zVAR_ALLOCATEDFROM_
```

See Also:

[Constant Field Values](#)

zVAR_ALLOCATEDTO_

```
public static final long zVAR_ALLOCATEDTO_
```

See Also:

[Constant Field Values](#)

zVAR_nINDEXLEVELS_

```
public static final long zVAR_nINDEXLEVELS_
```

See Also:

[Constant Field Values](#)

rVAR_nINDEXLEVELS_

```
public static final long rVAR_nINDEXLEVELS_
```

See Also:

[Constant Field Values](#)

CDF_SCRATCHDIR_

```
public static final long CDF_SCRATCHDIR_
```

See Also:

[Constant Field Values](#)

rVAR_RESERVEPERCENT_

```
public static final long rVAR_RESERVEPERCENT_
```

See Also:

[Constant Field Values](#)

zVAR_RESERVEPERCENT_

public static final long **zVAR_RESERVEPERCENT_**

See Also:

[Constant Field Values](#)

rVAR_RECORDS_

public static final long **rVAR_RECORDS_**

See Also:

[Constant Field Values](#)

zVAR_RECORDS_

public static final long **zVAR_RECORDS_**

See Also:

[Constant Field Values](#)

STAGE_CACHESIZE_

public static final long **STAGE_CACHESIZE_**

See Also:

[Constant Field Values](#)

COMPRESS_CACHESIZE_

public static final long **COMPRESS_CACHESIZE_**

See Also:

[Constant Field Values](#)

CDFwithSTATS_

public static final long **CDFwithSTATS_**

See Also:

[Constant Field Values](#)

CDF_ACCESS_

public static final long **CDF_ACCESS_**

See Also:

[Constant Field Values](#)

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DETAIL: [FIELD](#) | [CONSTR](#) | [METHOD](#)

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gsfc.nssdc.cdf

Class CDFData

java.lang.Object

└─ gsfc.nssdc.cdf.CDFData

All Implemented Interfaces:

[CDFConstants](#), [CDFObject](#)

public class **CDFData**

extends java.lang.Object

implements [CDFObject](#), [CDFConstants](#)

This class acts as the glue between the Java code and the Java Native Interface (JNI) code. This class applies only to the Variable object. It handles its data. This class translates a multi-dimensional array data into a 1-dimensional (1D) array prior to sending data to the JNI code for processing. Similarly, data retrieved in 1D array from the JNI code is properly dimensioned for usage or further manipulation.

See Also:

[Variable](#), [CDFException](#)

Field Summary

Fields inherited from interface gsfc.nssdc.cdf.[CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),

[DEFAULT FLOAT PADVALUE](#), [DEFAULT INT1 PADVALUE](#),
[DEFAULT INT2 PADVALUE](#), [DEFAULT INT4 PADVALUE](#),
[DEFAULT REAL4 PADVALUE](#), [DEFAULT REAL8 PADVALUE](#),
[DEFAULT UCHAR PADVALUE](#), [DEFAULT UINT1 PADVALUE](#),
[DEFAULT UINT2 PADVALUE](#), [DEFAULT UINT4 PADVALUE](#), [DELETE](#),
[DID NOT COMPRESS](#), [EMPTY COMPRESSED CDF](#), [END OF VAR](#),
[EPOCH STRING LEN](#), [EPOCH STRING LEN EXTEND](#), [EPOCH1 STRING LEN](#),
[EPOCH1 STRING LEN EXTEND](#), [EPOCH2 STRING LEN](#),
[EPOCH2 STRING LEN EXTEND](#), [EPOCH3 STRING LEN](#),
[EPOCH3 STRING LEN EXTEND](#), [EPOCHx FORMAT MAX](#), [EPOCHx STRING MAX](#),
[FORCED PARAMETER](#), [gENTRY](#), [gENTRY DATA](#), [gENTRY DATASPEC](#),
[gENTRY DATATYPE](#), [gENTRY EXISTENCE](#), [gENTRY NUMELEMS](#), [GET](#),
[GLOBAL SCOPE](#), [GZIP COMPRESSION](#), [HOST DECODING](#), [HOST ENCODING](#),
[HP DECODING](#), [HP ENCODING](#), [HUFF COMPRESSION](#), [IBM PC OVERFLOW](#),
[IBMPC DECODING](#), [IBMPC ENCODING](#), [IBMRS DECODING](#), [IBMRS ENCODING](#),
[ILLEGAL EPOCH FIELD](#), [ILLEGAL EPOCH VALUE](#), [ILLEGAL FOR SCOPE](#),
[ILLEGAL IN zMODE](#), [ILLEGAL ON V1 CDF](#), [LIB COPYRIGHT](#), [LIB INCREMENT](#),
[LIB RELEASE](#), [LIB subINCREMENT](#), [LIB VERSION](#), [MAC DECODING](#),
[MAC ENCODING](#), [MULTI FILE](#), [MULTI FILE FORMAT](#), [NA FOR VARIABLE](#),
[NEGATIVE FP ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK DECODING](#),
[NETWORK ENCODING](#), [NeXT DECODING](#), [NeXT ENCODING](#), [NO ATTR SELECTED](#),
[NO CDF SELECTED](#), [NO COMPRESSION](#), [NO DELETE ACCESS](#),
[NO ENTRY SELECTED](#), [NO MORE ACCESS](#), [NO PADVALUE SPECIFIED](#),
[NO SPARSEARRAYS](#), [NO SPARSERECORDS](#), [NO STATUS SELECTED](#), [NO SUCH ATTR](#),
[NO SUCH CDF](#), [NO SUCH ENTRY](#), [NO SUCH RECORD](#), [NO SUCH VAR](#),
[NO VAR SELECTED](#), [NO VARS IN CDF](#), [NO WRITE ACCESS](#), [NOT A CDF](#),
[NOT A CDF OR NOT SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#),
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[READ ONLY DISTRIBUTION](#), [READ ONLY MODE](#), [READONLYoff](#), [READONLYon](#),
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[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
[RLE OF ZEROs](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),

[rVAR nINDEXLEVELS](#) , [rVAR nINDEXRECORDS](#) , [rVAR NUMallocRECS](#) ,
[rVAR NUMBER](#) , [rVAR NUMELEMS](#) , [rVAR NUMRECS](#) , [rVAR PADVALUE](#) ,
[rVAR RECORDS](#) , [rVAR RECVARY](#) , [rVAR RESERVEPERCENT](#) , [rVAR SEQDATA](#) ,
[rVAR SEQPOS](#) , [rVAR SPARSEARRAYS](#) , [rVAR SPARSERECORDS](#) ,
[rVARs CACHESIZE](#) , [rVARs DIMCOUNTS](#) , [rVARs DIMINDICES](#) ,
[rVARs DIMINTERVALS](#) , [rVARs DIMSIZES](#) , [rVARs MAXREC](#) , [rVARs NUMDIMS](#) ,
[rVARs RECCOUNT](#) , [rVARs RECDATA](#) , [rVARs RECINTERVAL](#) ,
[rVARs RECNUMBER](#) , [SAVE](#) , [SCRATCH CREATE ERROR](#) , [SCRATCH DELETE ERROR](#) ,
[SCRATCH READ ERROR](#) , [SCRATCH WRITE ERROR](#) , [SELECT](#) , [SGi DECODING](#) ,
[SGi ENCODING](#) , [SINGLE FILE](#) , [SINGLE FILE FORMAT](#) ,
[SOME ALREADY ALLOCATED](#) , [STAGE CACHESIZE](#) , [STATUS TEXT](#) ,
[SUN DECODING](#) , [SUN ENCODING](#) , [TOO MANY PARMS](#) , [TOO MANY VARS](#) ,
[UNKNOWN COMPRESSION](#) , [UNKNOWN SPARSENESS](#) , [UNSUPPORTED OPERATION](#) ,
[VAR ALREADY CLOSED](#) , [VAR CLOSE ERROR](#) , [VAR CREATE ERROR](#) ,
[VAR DELETE ERROR](#) , [VAR EXISTS](#) , [VAR NAME TRUNC](#) , [VAR OPEN ERROR](#) ,
[VAR READ ERROR](#) , [VAR WRITE ERROR](#) , [VARIABLE SCOPE](#) , [VARY](#) , [VAX DECODING](#) ,
[VAX ENCODING](#) , [VIRTUAL RECORD DATA](#) , [zENTRY](#) , [zENTRY DATA](#) ,
[zENTRY DATASPEC](#) , [zENTRY DATATYPE](#) , [zENTRY EXISTENCE](#) , [zENTRY NAME](#) ,
[zENTRY NUMELEMS](#) , [zMODEoff](#) , [zMODEon1](#) , [zMODEon2](#) , [zVAR](#) ,
[zVAR ALLOCATEBLOCK](#) , [zVAR ALLOCATEDFROM](#) , [zVAR ALLOCATEDTO](#) ,
[zVAR ALLOCATERECS](#) , [zVAR BLOCKINGFACTOR](#) , [zVAR CACHESIZE](#) ,
[zVAR COMPRESSION](#) , [zVAR DATA](#) , [zVAR DATASPEC](#) , [zVAR DATATYPE](#) ,
[zVAR DIMCOUNTS](#) , [zVAR DIMINDICES](#) , [zVAR DIMINTERVALS](#) ,
[zVAR DIMSIZES](#) , [zVAR DIMVARYS](#) , [zVAR EXISTENCE](#) , [zVAR HYPERDATA](#) ,
[zVAR INITIALRECS](#) , [zVAR MAXallocREC](#) , [zVAR MAXREC](#) , [zVAR NAME](#) ,
[zVAR nINDEXENTRIES](#) , [zVAR nINDEXLEVELS](#) , [zVAR nINDEXRECORDS](#) ,
[zVAR NUMallocRECS](#) , [zVAR NUMBER](#) , [zVAR NUMDIMS](#) , [zVAR NUMELEMS](#) ,
[zVAR NUMRECS](#) , [zVAR PADVALUE](#) , [zVAR RECCOUNT](#) , [zVAR RECINTERVAL](#) ,
[zVAR RECNUMBER](#) , [zVAR RECORDS](#) , [zVAR RECVARY](#) , [zVAR RESERVEPERCENT](#) ,
[zVAR SEQDATA](#) , [zVAR SEQPOS](#) , [zVAR SPARSEARRAYS](#) ,
[zVAR SPARSERECORDS](#) , [zVARs CACHESIZE](#) , [zVARs MAXREC](#) ,
[zVARs RECDATA](#) , [zVARs RECNUMBER](#)

Method Summary

void [delete](#) ()

See the description of the [getName\(\)](#) method in this class.

void	dump() Dump data information and values, one row at a time, to the stderr.
void	dumpData() Dumps variable data, one row at a time per record.
protected static CDFData	get (Variable v, long recStart, long recCount, long recInterval, long[] dimIndices, long[] dimCounts, long[] dimIntervals) Read data and metadata from the given variable.
java.lang. Object	getData() Returns an object that is properly dimensioned.
long[]	getDimCounts() Gets the value of the dimension counts that represents the number of elements read or write starting at the location for a hyper get/put function.
long[]	getDimIndices() Gets the starting dimension index within a record for a hyper get/put function.
long[]	getDimIntervals() Gets the value of the dimension intervals that represent the number of elements to skip between reads or writes for a hyper get/put function.
int[]	getDimSizes() Gets the dimension sizes of this variable.
java.lang. String	getName() CDFData implements CDFObject to enable CDFDelegate calls.
int	getNDims() Gets the dimensionality of this variable.
long	getRecCount() Gets the number of records to read or write for a hyper get/put function.
long	getRecInterval() Gets the number of records to skip for a hyper get/put function.
long	getRecStart() Gets the record number at which a hyper get/put function starts.
protected static CDFData	put (Variable v, long recStart, long recCount, long recInterval, long[] dimIndices, long[] dimCounts, long[] dimIntervals, java.lang.Object data) Store data from the given variable to the current CDF file.

void	rename (java.lang.String name)
------	---

See the description of the getName() method in this class.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Method Detail

getData

```
public java.lang.Object getData()
```

Returns an object that is properly dimensioned. The returned object can be casted in an application for usage or further manipulation.

The following example retrieves the Temperature data. The user should know how the data was stored before casting the generic object to a variable.

```
Variable var = cdf.getVariable("Temperature");
CDFData data = var.getHyperDataObject (recNum,
                                        recCount,
                                        recInterval,
                                        dimIndicies,
                                        dimSizes,
                                        dimCounts);
long[][] temperature = (long [][]) data.getData();
```

Returns:

a generic Object that is properly dimensioned

getnDims

```
public int getnDims()
```

Gets the dimensionality of this variable.

```
Variable var = cdf.getVariable("Temperature");
CDFData data = var.getHyperDataObject (recNum,
                                        recCount,
                                        recInterval,
                                        dimIndicies,
                                        dimSizes,
                                        dimCounts);

long[][] temperature = (long [][]) data.getData();
nDims = data.getnDims(); // Gives the dimensionality of
temperature
```

Returns:

the dimensionality of this variable

getDimSizes

```
public int[] getDimSizes()
```

Gets the dimension sizes of this variable. For example, 3 X 10 (3 rows and 10 columns) two-dimensional array is returned as an one-dimensional integer array, containing 3 in the first element and 10 in the second element.

Returns:

the dimension sizes of this variable

getRecStart

```
public long getRecStart()
```

Gets the record number at which a hyper get/put function starts.

Returns:

the starting record number for a hyper get/put function

getRecCount

```
public long getRecCount()
```

Gets the number of records to read or write for a hyper get/put function.

Returns:

the number of records involved for a hyper get/put function involves

getRecInterval

```
public long getRecInterval()
```

Gets the number of records to skip for a hyper get/put function. The record interval of 1 represents every record. The value of 2 represents every other record, the value of 3 represents every third record and so on.

Returns:

the value of record interval

getDimIndices

```
public long[] getDimIndices()
```

Gets the starting dimension index within a record for a hyper get/put function. Dimension index indicates where the data search started from within a record. Let's say a record is comprised of a 2x5 two-dimensional array (2 rows and 5 columns). If the index returned from this method has a value of {1,0}, then the data search was performed starting at the first element of the second row. Similarly, the value of {0,0} represents that the data search search was performed starting at the first element of the first record.

Returns:

the dimension index for this variable

getDimCounts

```
public long[] getDimCounts()
```

Gets the value of the dimension counts that represents the number of elements read or write starting at the location for a hyper get/put function.

Returns:

the dimension counts for this variable

getDimIntervals

```
public long[] getDimIntervals()
```

Gets the value of the dimension intervals that represent the number of elements to skip between reads or writes for a hyper get/put function. The value of 1 represents every element. The value of 2 represents every other element, and the value of 3 represents every third element and so on.

Returns:

the dimension intervals for this variable

get

```
protected static final CDFData get(Variable v,  
                                   long recStart,  
                                   long recCount,  
                                   long recInterval,  
                                   long[] dimIndices,  
                                   long[] dimCounts,  
                                   long[] dimIntervals)  
    throws CDFException
```

Read data and metadata from the given variable. This method allows to read one or more records at once.

Parameters:

v - Variable from which to retrieve data from

recStart - Record number at which data search begins
 recCount - The number of records to read
 recInterval - The number of records to skip between reads
 dimIndices - Dimension index within a record at which data search begins
 dimCounts - The number of elements to read from dimIndices
 dimIntervals - The number of elements to skip between reads

Returns:

An CDFData object that contains the requested variable's data

Throws:

[CDFException](#) - If there was a problem in retrieving variable's data and metadata

put

```
protected static final CDFData put(Variable v,
                                     long recStart,
                                     long recCount,
                                     long recInterval,
                                     long[] dimIndices,
                                     long[] dimCounts,
                                     long[] dimIntervals,
                                     java.lang.Object data)
    throws CDFException
```

Store data from the given variable to the current CDF file. This method allows to write one or more records at once. Albeit this method returns a CDFData object, it's not required make use of the returned object. In other words, one can simply call this method as a subroutine instead of a function.

Parameters:

v - Variable to which data should be written
 recStart - Record number at which data write begins
 recCount - The number of records to write
 recInterval - The number of records to skip between writes
 dimIndices - Dimension index within a record at which data write begins
 dimCounts - The number of elements to write starting at dimIndices
 dimIntervals - The number of elements to skip between writes
 data - Data to be written to the destination variable

Returns:

An CDFData object that contains the data and metadata written to the current CDF file

Throws:

[CDFException](#) - If there was a problem in writing variable's data

dumpData

```
public void dumpData()
```

Dumps variable data, one row at a time per record. This is a generic utility for dumping data to a screen. Data can be scalar or 1-dimensional or multi-dimensional array of any data type.

The following example retrieves the first record, comprised of 3x5 (3 rows and 5 columns) array, into a generic object and dumps its contents to screen one row at a time. In this case three rows will be displayed on a screen, each row containing 5 elements.

```
CDFData data;
long[] dimIndices    = {0,0};
long[] dimIntervals  = {3,5};
long[] dimSizes      = {1,1};

data = var.getHyperDataObject(0L,           // record start
                              1,           // record counts
                              1,           // record interval
                              dimIndices,
                              dimSizes,
                              dimIntervals);

data.dumpData();
```

dump

```
public void dump()
```

Dump data information and values, one row at a time, to the stderr. This method is provided for

debugging purposes only. The information is printed in the following manner: / nDims:[sizes]
recStart/recCount/recInterval/dimIndices/dimsSizes/dimIntervals/dataArraySignature

getName

```
public java.lang.String getName()
```

CDFData implements CDFObject to enable CDFDelegate calls. CDFObject specifies the following three methods: getName(), rename(String), and delete(). Since CDFData implements CDFObject, it must have the methods defined in CDFObject. That's why this method is here; it doesn't do anything.

Specified by:

[getName](#) in interface [CDFObject](#)

Returns:

the name of the current object

rename

```
public void rename(java.lang.String name)  
    throws CDFException
```

See the description of the getName() method in this class.

Specified by:

[rename](#) in interface [CDFObject](#)

Parameters:

name - the new object name

Throws:

[CDFException](#) - No exception is thrown since this method is a placeholder

delete

```
public void delete()
```

throws [CDFException](#)

See the description of the `getName()` method in this class.

Specified by:

[delete](#) in interface [CDFObject](#)

Throws:

[CDFException](#) - No exception is thrown since this method is a placeholder

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SUMMARY: [NESTED](#) | [FIELD](#) | [CONSTR](#) | [METHOD](#)

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SUMMARY: NESTED | FIELD | CONSTR | [METHOD](#)

DETAIL: FIELD | CONSTR | [METHOD](#)

gsfc.nssdc.cdf

Interface CDFDelegate

All Known Implementing Classes:

[CDFNativeLibrary](#)

public interface **CDFDelegate**

This class defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library. The [CDFNativeLibrary](#) class that implementing this interface will cause the JNI to be loaded. This class is available only to the CDF object that uses the CDFDelegate to make requests to JNI. All CDF's other objects, i.e., Attribute, Entry, Variable (and its CDFData), need to refer to the containing CDF object to make requests.

See Also:

[CDFNativeLibrary](#)

Method Summary

void	cdflib (CDF theCDF, CDFObject cdfObject, java.util.Vector cmds) Defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library.
------	---

Method Detail

cdflib

```
public void cdflib(CDF theCDF,
```

```
        CDFObject cdfObject,  
        java.util.Vector cmds)  
throws CDFException
```

Defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library. This method is responsible for sending Java's request to the CDF library and returning the results from the CDF library to the Java side.

Parameters:

`theCDF` - the current CDF to be processed

`cdfObject` - the calling CDF object (e.g. Attribute, variable, etc.)

`cmds` - a Vector that contains the CDF internal interface library commands to be executed

Throws:

[CDFException](#) - if an error occurs processing the requested commands in JNI

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gsfc.nssdc.cdf

Class CDFException

java.lang.Object

└ java.lang.Throwable

└ java.lang.Exception

└ gsfc.nssdc.cdf.CDFException

All Implemented Interfaces:[CDFConstants](#), java.io.Serializablepublic class **CDFException**

extends java.lang.Exception

implements [CDFConstants](#)

This class defines the informational, warning, and error messages that can arise from CDF operations.

See Also:[Serialized Form](#)

Field Summary

Fields inherited from interface gsfc.nssdc.cdf.[CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),

[DEFAULT FLOAT PADVALUE](#), [DEFAULT INT1 PADVALUE](#),
[DEFAULT INT2 PADVALUE](#), [DEFAULT INT4 PADVALUE](#),
[DEFAULT REAL4 PADVALUE](#), [DEFAULT REAL8 PADVALUE](#),
[DEFAULT UCHAR PADVALUE](#), [DEFAULT UINT1 PADVALUE](#),
[DEFAULT UINT2 PADVALUE](#), [DEFAULT UINT4 PADVALUE](#), [DELETE](#),
[DID NOT COMPRESS](#), [EMPTY COMPRESSED CDF](#), [END OF VAR](#),
[EPOCH STRING LEN](#), [EPOCH STRING LEN EXTEND](#), [EPOCH1 STRING LEN](#),
[EPOCH1 STRING LEN EXTEND](#), [EPOCH2 STRING LEN](#),
[EPOCH2 STRING LEN EXTEND](#), [EPOCH3 STRING LEN](#),
[EPOCH3 STRING LEN EXTEND](#), [EPOCHx FORMAT MAX](#), [EPOCHx STRING MAX](#),
[FORCED PARAMETER](#), [gENTRY](#), [gENTRY DATA](#), [gENTRY DATASPEC](#),
[gENTRY DATATYPE](#), [gENTRY EXISTENCE](#), [gENTRY NUMELEMS](#), [GET](#),
[GLOBAL SCOPE](#), [GZIP COMPRESSION](#), [HOST DECODING](#), [HOST ENCODING](#),
[HP DECODING](#), [HP ENCODING](#), [HUFF COMPRESSION](#), [IBM PC OVERFLOW](#),
[IBMPC DECODING](#), [IBMPC ENCODING](#), [IBMRS DECODING](#), [IBMRS ENCODING](#),
[ILLEGAL EPOCH FIELD](#), [ILLEGAL EPOCH VALUE](#), [ILLEGAL FOR SCOPE](#),
[ILLEGAL IN zMODE](#), [ILLEGAL ON V1 CDF](#), [LIB COPYRIGHT](#), [LIB INCREMENT](#),
[LIB RELEASE](#), [LIB subINCREMENT](#), [LIB VERSION](#), [MAC DECODING](#),
[MAC ENCODING](#), [MULTI FILE](#), [MULTI FILE FORMAT](#), [NA FOR VARIABLE](#),
[NEGATIVE FP ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK DECODING](#),
[NETWORK ENCODING](#), [NeXT DECODING](#), [NeXT ENCODING](#), [NO ATTR SELECTED](#),
[NO CDF SELECTED](#), [NO COMPRESSION](#), [NO DELETE ACCESS](#),
[NO ENTRY SELECTED](#), [NO MORE ACCESS](#), [NO PADVALUE SPECIFIED](#),
[NO SPARSEARRAYS](#), [NO SPARSERECORDS](#), [NO STATUS SELECTED](#), [NO SUCH ATTR](#),
[NO SUCH CDF](#), [NO SUCH ENTRY](#), [NO SUCH RECORD](#), [NO SUCH VAR](#),
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[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
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[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),

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[rVAR_NUMBER](#) , [rVAR_NUMELEMS](#) , [rVAR_NUMRECS](#) , [rVAR_PADVALUE](#) ,
[rVAR_RECORDS](#) , [rVAR_RECVARY](#) , [rVAR_RESERVEPERCENT](#) , [rVAR_SEQDATA](#) ,
[rVAR_SEQPOS](#) , [rVAR_SPARSEARRAYS](#) , [rVAR_SPARSERECORDS](#) ,
[rVARs_CACHESIZE](#) , [rVARs_DIMCOUNTS](#) , [rVARs_DIMINDICES](#) ,
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[rVARs_RECCOUNT](#) , [rVARs_RECDATA](#) , [rVARs_RECINTERVAL](#) ,
[rVARs_RECNUMBER](#) , [SAVE](#) , [SCRATCH_CREATE_ERROR](#) , [SCRATCH_DELETE_ERROR](#) ,
[SCRATCH_READ_ERROR](#) , [SCRATCH_WRITE_ERROR](#) , [SELECT](#) , [SGi_DECODING](#) ,
[SGi_ENCODING](#) , [SINGLE_FILE](#) , [SINGLE_FILE_FORMAT](#) ,
[SOME_ALREADY_ALLOCATED](#) , [STAGE_CACHESIZE](#) , [STATUS_TEXT](#) ,
[SUN_DECODING](#) , [SUN_ENCODING](#) , [TOO_MANY_PARMS](#) , [TOO_MANY_VARS](#) ,
[UNKNOWN_COMPRESSION](#) , [UNKNOWN_SPARSENESS](#) , [UNSUPPORTED_OPERATION](#) ,
[VAR_ALREADY_CLOSED](#) , [VAR_CLOSE_ERROR](#) , [VAR_CREATE_ERROR](#) ,
[VAR_DELETE_ERROR](#) , [VAR_EXISTS](#) , [VAR_NAME_TRUNC](#) , [VAR_OPEN_ERROR](#) ,
[VAR_READ_ERROR](#) , [VAR_WRITE_ERROR](#) , [VARIABLE_SCOPE](#) , [VARY](#) , [VAX_DECODING](#) ,
[VAX_ENCODING](#) , [VIRTUAL_RECORD_DATA](#) , [zENTRY](#) , [zENTRY_DATA](#) ,
[zENTRY_DATASPEC](#) , [zENTRY_DATATYPE](#) , [zENTRY_EXISTENCE](#) , [zENTRY_NAME](#) ,
[zENTRY_NUMELEMS](#) , [zMODEoff](#) , [zMODEon1](#) , [zMODEon2](#) , [zVAR](#) ,
[zVAR_ALLOCATEBLOCK](#) , [zVAR_ALLOCATEDFROM](#) , [zVAR_ALLOCATEDTO](#) ,
[zVAR_ALLOCATERECS](#) , [zVAR_BLOCKINGFACTOR](#) , [zVAR_CACHESIZE](#) ,
[zVAR_COMPRESSION](#) , [zVAR_DATA](#) , [zVAR_DATASPEC](#) , [zVAR_DATATYPE](#) ,
[zVAR_DIMCOUNTS](#) , [zVAR_DIMINDICES](#) , [zVAR_DIMINTERVALS](#) ,
[zVAR_DIMSIZES](#) , [zVAR_DIMVARYS](#) , [zVAR_EXISTENCE](#) , [zVAR_HYPERDATA](#) ,
[zVAR_INITIALRECS](#) , [zVAR_MAXallocREC](#) , [zVAR_MAXREC](#) , [zVAR_NAME](#) ,
[zVAR_nINDEXENTRIES](#) , [zVAR_nINDEXLEVELS](#) , [zVAR_nINDEXRECORDS](#) ,
[zVAR_NUMallocRECS](#) , [zVAR_NUMBER](#) , [zVAR_NUMDIMS](#) , [zVAR_NUMELEMS](#) ,
[zVAR_NUMRECS](#) , [zVAR_PADVALUE](#) , [zVAR_RECCOUNT](#) , [zVAR_RECINTERVAL](#) ,
[zVAR_RECNUMBER](#) , [zVAR_RECORDS](#) , [zVAR_RECVARY](#) , [zVAR_RESERVEPERCENT](#) ,
[zVAR_SEQDATA](#) , [zVAR_SEQPOS](#) , [zVAR_SPARSEARRAYS](#) ,
[zVAR_SPARSERECORDS](#) , [zVARs_CACHESIZE](#) , [zVARs_MAXREC](#) ,
[zVARs_RECDATA](#) , [zVARs_RECNUMBER](#)

Constructor Summary

[CDFException](#)(long statusCode)

Takes a status code and throws a CDFException with the message that corresponds to the status code that is passed in.

[CDFException](#)(long statusCode, java.lang.String where)

Takes a status code and throws a CDFException with the message that corresponds to the status code that is passed in.

[CDFException](#)(java.lang.String message)

Takes a text message from the calling program and throws a CDFException.

Method Summary

long [getCurrentStatus](#)()

Gets the status code that caused CDFException.

static java.
lang.String [getStatusMsg](#)(long statusCode)

Get the status text message for the given status code.

Methods inherited from class java.lang.Throwable

fillInStackTrace, getCause, getLocalizedMessage, getMessage, getStackTrace, initCause, printStackTrace, printStackTrace, printStackTrace, setStackTrace, toString

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Constructor Detail

CDFException

```
public CDFException( java.lang.String message)
```

Takes a text message from the calling program and throws a CDFException.

Parameters:

message - the message to be thrown with CDFException

CDFException

```
public CDFException(long statusCode)
```

Takes a status code and throws a CDFException with the message that corresponds to the status code that is passed in.

Parameters:

statusCode - the CDF statusCode to be thrown

CDFException

```
public CDFException(long statusCode,
                    java.lang.String where)
```

Takes a status code and throws a CDFException with the message that corresponds to the status code that is passed in. It also specifies where (which routine) the problem was.

Parameters:

statusCode - the CDF statusCode to be thrown

where - the place (routine/method) where the problem occurred

Method Detail

getCurrentStatus

```
public long getCurrentStatus()
```

Gets the status code that caused CDFException. This method comes in handy when there are times one may want to examine the cause of the CDFException and determine whether to continue or not.

```
try {
    ...
} catch (CDFException e) {
    if (e.getCurrentStatus() == NO_SUCH_VAR) {
```

```

        Variable latitude = Variable.create(cdf,
"Latitude",
                                CDF_INT1,
                                numElements,
                                numDims,
                                dimSizes,
                                recVary,
                                dimVary);
        ...
    }
    else {
        System.out.println ("StatusCode = "+e.
getCurrentStatus());
        e.printStackTrace();
    }
}

```

Returns:

the status code that caused CDFException

getStatusMsg

```
public static java.lang.String getStatusMsg(long statusCode)
```

Get the status text message for the given status code.

Parameters:

statusCode - the status code from which the status text is retrieved

Returns:

the status text message for the given status code

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gsfc.nssdc.cdf

Class CDFNativeLibrary

java.lang.Object

└─ **gsfc.nssdc.cdf.CDFNativeLibrary****All Implemented Interfaces:**[CDFDelegate](#)public class **CDFNativeLibrary**

extends java.lang.Object

implements [CDFDelegate](#)

This class implements the method that act as the gateway between the CDF Java APIs and the CDF library.

Constructor Summary[CDFNativeLibrary](#)()**Method Summary**

void	cdflib (CDF theCDF, CDFObject cdfObject, java.util.Vector cmds) Calls the Java Native Interface (JNI) program, cdfNativeLibrary.c.
------	--

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

CDFNativeLibrary

```
public CDFNativeLibrary()
```

Method Detail

cdflib

```
public void cdflib(CDF theCDF,  
                  CDFObject cdfObject,  
                  java.util.Vector cmds)  
    throws CDFException
```

Calls the Java Native Interface (JNI) program, cdfNativeLibrary.c. This method is internal and called by various core CDF Java programs.

End users should never call this method from their applications.

Specified by:

[cdflib](#) in interface [CDFDelegate](#)

Parameters:

theCDF - the CDF being dealt with

cdfObject - the calling program/object (e.g. Variable.java, Attribute.java, etc.)

cmds - a vector that contains the CDFlib commands to be executed

Throws:

[CDFException](#) - if a problem occurs while executing the requested CDFlib commands in cdfNativeLibrary.c.

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SUMMARY: NESTED | FIELD | CONSTR | [METHOD](#)DETAIL: FIELD | CONSTR | [METHOD](#)

gsfc.nssdc.cdf

Interface CDFObject

All Known Implementing Classes:

[Attribute](#),
[CDF](#),
[CDFData](#),
[Entry](#),
[Variable](#)
public interface **CDFObject**

CDFObject provides the base interface for all CDF objects. CDF objects mean the CDF, Attribute, Entry and Variable objects. All these objects need to implement this interface.

Method Summary

void	delete () Deletes the current object.
java. lang. String	getName () Returns the name of the current object.
void	rename (java.lang.String name) Renames the current object.

Method Detail

getName

public java.lang.String **getName**()

Returns the name of the current object.

Returns:

the name of the current object

rename

```
public void rename(java.lang.String name)
    throws CDFException
```

Renames the current object.

Parameters:

name - the new object name

Throws:

[CDFException](#) - if an error occurs renaming the current object

delete

```
public void delete()
    throws CDFException
```

Deletes the current object.

Throws:

[CDFException](#) - if an error occurs deleting the current object

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gsfc.nssdc.cdf

Class CDFTools

java.lang.Object

└─ gsfc.nssdc.cdf.CDFTools

All Implemented Interfaces:

[CDFConstants](#)

public class **CDFTools**

extends java.lang.Object

implements [CDFConstants](#)

CDFTools.java Created: Tue Nov 24 16:14:50 1998

Field Summary

static int [ALL_VALUES](#)

static int [NAMED_VALUES](#)

static int [NO_REPORTS](#)

static int [NO_VALUES](#)

static int [NRV_VALUES](#)

static int	<u>REPORT_ERRORS</u>
static int	<u>REPORT_INFORMATION</u>
static int	<u>REPORT_WARNINGS</u>
static int	<u>RV_VALUES</u>

Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),

[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),
[DEFAULT_FLOAT_PADVALUE](#), [DEFAULT_INT1_PADVALUE](#),
[DEFAULT_INT2_PADVALUE](#), [DEFAULT_INT4_PADVALUE](#),
[DEFAULT_REAL4_PADVALUE](#), [DEFAULT_REAL8_PADVALUE](#),
[DEFAULT_UCHAR_PADVALUE](#), [DEFAULT_UINT1_PADVALUE](#),
[DEFAULT_UINT2_PADVALUE](#), [DEFAULT_UINT4_PADVALUE](#), [DELETE](#),
[DID_NOT_COMPRESS](#), [EMPTY_COMPRESSED_CDF](#), [END_OF_VAR](#),
[EPOCH_STRING_LEN](#), [EPOCH_STRING_LEN_EXTEND](#), [EPOCH1_STRING_LEN](#),
[EPOCH1_STRING_LEN_EXTEND](#), [EPOCH2_STRING_LEN](#),
[EPOCH2_STRING_LEN_EXTEND](#), [EPOCH3_STRING_LEN](#),
[EPOCH3_STRING_LEN_EXTEND](#), [EPOCHx_FORMAT_MAX](#), [EPOCHx_STRING_MAX](#),
[FORCED_PARAMETER](#), [gENTRY](#), [gENTRY_DATA](#), [gENTRY_DATASPEC](#),
[gENTRY_DATATYPE](#), [gENTRY_EXISTENCE](#), [gENTRY_NUMELEMS](#), [GET](#),
[GLOBAL_SCOPE](#), [GZIP_COMPRESSION](#), [HOST_DECODING](#), [HOST_ENCODING](#),
[HP_DECODING](#), [HP_ENCODING](#), [HUFF_COMPRESSION](#), [IBM_PC_OVERFLOW](#),
[IBMPC_DECODING](#), [IBMPC_ENCODING](#), [IBMRS_DECODING](#), [IBMRS_ENCODING](#),
[ILLEGAL_EPOCH_FIELD](#), [ILLEGAL_EPOCH_VALUE](#), [ILLEGAL_FOR_SCOPE](#),
[ILLEGAL_IN_zMODE](#), [ILLEGAL_ON_V1_CDF](#), [LIB_COPYRIGHT](#), [LIB_INCREMENT](#),
[LIB_RELEASE](#), [LIB_subINCREMENT](#), [LIB_VERSION](#), [MAC_DECODING](#),
[MAC_ENCODING](#), [MULTI_FILE](#), [MULTI_FILE_FORMAT](#), [NA_FOR_VARIABLE](#),
[NEGATIVE_FP_ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK_DECODING](#),
[NETWORK_ENCODING](#), [NeXT_DECODING](#), [NeXT_ENCODING](#), [NO_ATTR_SELECTED](#),
[NO_CDF_SELECTED](#), [NO_COMPRESSION](#), [NO_DELETE_ACCESS](#),
[NO_ENTRY_SELECTED](#), [NO_MORE_ACCESS](#), [NO_PADVALUE_SPECIFIED](#),
[NO_SPARSEARRAYS](#), [NO_SPARSERECORDS](#), [NO_STATUS_SELECTED](#), [NO_SUCH_ATTR](#),
[NO_SUCH_CDF](#), [NO_SUCH_ENTRY](#), [NO_SUCH_RECORD](#), [NO_SUCH_VAR](#),
[NO_VAR_SELECTED](#), [NO_VARS_IN_CDF](#), [NO_WRITE_ACCESS](#), [NOT_A_CDF](#),
[NOT_A_CDF_OR_NOT_SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#),

[OPTIMAL ENCODING TREES](#), [PAD SPARSERECORDS](#),
[PRECEEDING RECORDS ALLOCATED](#), [PREV SPARSERECORDS](#), [PUT](#),
[READ ONLY DISTRIBUTION](#), [READ ONLY MODE](#), [READONLYoff](#), [READONLYon](#),
[rENTRY](#), [rENTRY DATA](#), [rENTRY DATASPEC](#), [rENTRY DATATYPE](#),
[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
[RLE OF ZEROS](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),
[rVAR nINDEXLEVELS](#), [rVAR nINDEXRECORDS](#), [rVAR NUMallocRECS](#),
[rVAR NUMBER](#), [rVAR NUMELEMS](#), [rVAR NUMRECS](#), [rVAR PADVALUE](#),
[rVAR RECORDS](#), [rVAR RECVARY](#), [rVAR RESERVEPERCENT](#), [rVAR SEQDATA](#),
[rVAR SEQPOS](#), [rVAR SPARSEARRAYS](#), [rVAR SPARSERECORDS](#),
[rVARs CACHESIZE](#), [rVARs DIMCOUNTS](#), [rVARs DIMINDICES](#),
[rVARs DIMINTERVALS](#), [rVARs DIMSIZES](#), [rVARs MAXREC](#), [rVARs NUMDIMS](#),
[rVARs RECCOUNT](#), [rVARs RECDATA](#), [rVARs RECINTERVAL](#),
[rVARs RECNUMBER](#), [SAVE](#), [SCRATCH CREATE ERROR](#), [SCRATCH DELETE ERROR](#),
[SCRATCH READ ERROR](#), [SCRATCH WRITE ERROR](#), [SELECT](#), [SGi DECODING](#),
[SGi ENCODING](#), [SINGLE FILE](#), [SINGLE FILE FORMAT](#),
[SOME ALREADY ALLOCATED](#), [STAGE CACHESIZE](#), [STATUS TEXT](#),
[SUN DECODING](#), [SUN ENCODING](#), [TOO MANY PARMS](#), [TOO MANY VARS](#),
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),
[VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#),
[VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#),
[VAR READ ERROR](#), [VAR WRITE ERROR](#), [VARIABLE SCOPE](#), [VARY](#), [VAX DECODING](#),
[VAX ENCODING](#), [VIRTUAL RECORD DATA](#), [zENTRY](#), [zENTRY DATA](#),
[zENTRY DATASPEC](#), [zENTRY DATATYPE](#), [zENTRY EXISTENCE](#), [zENTRY NAME](#),
[zENTRY NUMELEMS](#), [zMODEoff](#), [zMODEon1](#), [zMODEon2](#), [zVAR](#),
[zVAR ALLOCATEBLOCK](#), [zVAR ALLOCATEDFROM](#), [zVAR ALLOCATEDTO](#),
[zVAR ALLOCATERECS](#), [zVAR BLOCKINGFACTOR](#), [zVAR CACHESIZE](#),
[zVAR COMPRESSION](#), [zVAR DATA](#), [zVAR DATASPEC](#), [zVAR DATATYPE](#),
[zVAR DIMCOUNTS](#), [zVAR DIMINDICES](#), [zVAR DIMINTERVALS](#),
[zVAR DIMSIZES](#), [zVAR DIMVARYS](#), [zVAR EXISTENCE](#), [zVAR HYPERDATA](#),
[zVAR INITIALRECS](#), [zVAR MAXallocREC](#), [zVAR MAXREC](#), [zVAR NAME](#),
[zVAR nINDEXENTRIES](#), [zVAR nINDEXLEVELS](#), [zVAR nINDEXRECORDS](#),
[zVAR NUMallocRECS](#), [zVAR NUMBER](#), [zVAR NUMDIMS](#), [zVAR NUMELEMS](#),

[zVAR_NUMRECS](#) , [zVAR_PADVALUE](#) , [zVAR_RECCOUNT](#) , [zVAR_RECINTERVAL](#) ,
[zVAR_RECNUMBER](#) , [zVAR_RECORDS](#) , [zVAR_RECVARY](#) , [zVAR_RESERVEPERCENT](#) ,
[zVAR_SEQDATA](#) , [zVAR_SEQPOS](#) , [zVAR_SPARSEARRAYS](#) ,
[zVAR_SPARSERECORDS](#) , [zVARs_CACHESIZE](#) , [zVARs_MAXREC](#) ,
[zVARs_RECDATA](#) , [zVARs_RECNUMBER](#)

Constructor Summary

[CDFTools](#)()

Method Summary

static void	skeletonCDF (java.lang.String skeletonName, java.lang.String cdfName, boolean delete, boolean log, boolean neg2posfp0, boolean statistics, int zMode, int reportType, int cacheSize) skeletonTable produces a skeleton table from a CDF.
static void	skeletonTable (java.lang.String skeletonName, java.lang.String cdfName, boolean log, boolean format, boolean neg2posfp0, boolean statistics, boolean screen, boolean page, int values, java.lang.String[] valueList, int zMode, int reportType, int cacheSize) skeletonTable produces a skeleton table from a CDF.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Detail

NO_VALUES

public static final int **NO_VALUES**

See Also:

[Constant Field Values](#)

NRV_VALUES

```
public static final int NRV_VALUES
```

See Also:

[Constant Field Values](#)

RV_VALUES

```
public static final int RV_VALUES
```

See Also:

[Constant Field Values](#)

ALL_VALUES

```
public static final int ALL_VALUES
```

See Also:

[Constant Field Values](#)

NAMED_VALUES

```
public static final int NAMED_VALUES
```

See Also:

[Constant Field Values](#)

NO_REPORTS


```
public static final int NO_REPORTS
```

See Also:

[Constant Field Values](#)

REPORT_ERRORS

```
public static final int REPORT_ERRORS
```

See Also:

[Constant Field Values](#)

REPORT_WARNINGS

```
public static final int REPORT_WARNINGS
```

See Also:

[Constant Field Values](#)

REPORT_INFORMATION

```
public static final int REPORT_INFORMATION
```

See Also:

[Constant Field Values](#)

Constructor Detail

CDFTools

```
public CDFTools()
```

Method Detail

skeletonTable

```
public static void skeletonTable(java.lang.String skeletonName,
                                   java.lang.String cdfName,
                                   boolean log,
                                   boolean format,
                                   boolean neg2posfp0,
                                   boolean statistics,
                                   boolean screen,
                                   boolean page,
                                   int values,
                                   java.lang.String[] valueList,
                                   int zMode,
                                   int reportType,
                                   int cacheSize)
    throws java.io.IOException,
           java.lang.InterruptedException
```

`skeletonTable` produces a skeleton table from a CDF. A skeleton table is a text file which can be read by the `SkeletonCDF` program to build a skeleton CDF.

Parameters:

`skeletonName` - is the pathname of the skeleton table to be created. (Do not enter an extension because ".skt" is appended automatically). If **null** is specified, the skeleton table is named .skt in the current directory

`cdfName` - The pathname of the CDF from which the skeleton table will be created. Do not enter an extension.

`log` - Specifies whether or not messages are displayed as the program executes.

`format` - Specifies whether or not the `FORMAT` attribute is used when writing variable values (if the `FORMAT` attribute exists and an entry exists for the variable).

`neg2posfp0` - Specifies whether or not -0.0 is converted to 0.0 by the CDF library when read from a CDF. -0.0 is an illegal floating point value on VAXes and DEC Alphas running OpenVMS.

`statistics` - Specifies whether or not caching statistics are displayed at the end of each CDF.

`screen` - Specifies whether or not the skeleton table is displayed on the terminal screen (written to the "standard output"). If not, the skeleton table is written to a file.

`page` - If the skeleton table is being displayed on the terminal screen, specifies whether or not the output is displayed one page (screen) at a time.

`values` - Specifies which variable values are to be put in the skeleton table. It may be one of the following...

`CDFTools.NO_VALUES`

Ignore all NRV data values.

`CDFTools.NRV_VALUES`

Put NRV data values in the skeleton table.

`CDFTools.RV_VALUES`

Put RV variable values in the skeleton table.

`CDFTools.ALL_VALUES`

Put all variable values in the skeleton table.

`CDFTools.NAMED_VALUES`

Put named variables values in the skeleton table. This requires that `valueList` be non-null

`valueList` - the named variables to list values.

`zMode` - Specifies which `zMode` should be used. May be one of the following...

0

Indicates that `zMode` is disabled.

1

Indicates that `zMode/1` should be used (the dimension variances of `rVariables` will be preserved).

2

Indicates that `zMode/2` should be used (the dimensions of `rVariables` having a variance of `NOVARY` (false) are hidden).

`reportType` - Specifies the types of return status codes from the CDF library which should be reported/displayed. `report` is a bit mask made up from the following `CDFTools.NO_REPORTS`, `CDFTools.REPORT_ERRORS`, `CDFTools.REPORT_WARNINGS` and `CDFTools.REPORT_INFORMATION`

`cacheSize` - The number of 512-byte buffers to be used for the CDF's `dotCDF` file, staging file, and compression scratch file. If this qualifier is absent, default cache sizes chosen by the CDF library are used. The cache sizes are specified with a comma-separated

list of pairs where is the number of cache buffers and is the type of file. The file 's are as follows: `d' for the dotCDF file, `s' for the staging file, and `c' for the compression scratch file. For example, `200d,100s' specifies 200 cache buffers for the dotCDF file and 100 cache buffers for the staging file. The dotCDF file cache size can also be specified without the `d' for compatibility with older CDF releases (eg. `200,100s'). Note that not all of the file types must be specified. Those not specified will receive a default cache size.

Throws:

```
java.io.IOException
java.lang.InterruptedException
```

skeletonCDF

```
public static void skeletonCDF(java.lang.String skeletonName,
                                java.lang.String cdfName,
                                boolean delete,
                                boolean log,
                                boolean neg2posfp0,
                                boolean statistics,
                                int zMode,
                                int reportType,
                                int cacheSize)
                                throws java.io.IOException,
                                java.lang.InterruptedException
```

skeletonTable produces a skeleton table from a CDF. A skeleton table is a text file which can be read by the SkeletonCDF program to build a skeleton CDF.

Parameters:

`skeletonName` - is the pathname of the skeleton table to be created. (Do not enter an extension because ".skt" is appended automatically). If **null** is specified, the skeleton table is named .skt in the current directory

`cdfName` - The pathname of the CDF from which the skeleton table will be created. Do not enter an extension.

`delete` - specifies whether or not the CDF should be deleted if it already exists.

`log` - Specifies whether or not messages are displayed as the program executes.

`neg2posfp0` - Specifies whether or not -0.0 is converted to 0.0 by the CDF library when read from a CDF. -0.0 is an illegal floating point value on VAXes and DEC Alphas

running OpenVMS.

`statistics` - Specifies whether or not caching statistics are displayed at the end of each CDF.

`zMode` - Specifies which zMode should be used. May be one of the following...

0

Indicates that zMode is disabled.

1

Indicates that zMode/1 should be used (the dimension variances of rVariables will be preserved).

2

Indicates that zMode/2 should be used (the dimensions of rVariables having a variance of NOVARY (false) are hidden).

`reportType` - Specifies the types of return status codes from the CDF library which should be reported/displayed. `report` is a bit mask made up from the following CDFTools.NO_REPORTS, CDFTools.REPORT_ERRORS, CDFTools.REPORT_WARNINGS and CDFTools.REPORT_INFORMATION

`cacheSize` - The number of 512-byte buffers to be used for the CDF's dotCDF file, staging file, and compression scratch file. If this qualifier is absent, default cache sizes chosen by the CDF library are used. The cache sizes are specified with a comma-separated list of pairs where is the number of cache buffers and is the type of file. The file 's are as follows: `d' for the dotCDF file, `s' for the staging file, and `c' for the compression scratch file. For example, `200d,100s' specifies 200 cache buffers for the dotCDF file and 100 cache buffers for the staging file. The dotCDF file cache size can also be specified without the `d' for compatibility with older CDF releases (eg. `200,100s'). Note that not all of the file types must be specified. Those not specified will receive a default cache size.

Throws:

`java.io.IOException`

`java.lang.InterruptedException`

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gsfc.nssdc.cdf.util

Class CDFUtils

java.lang.Object

└─ **gsfc.nssdc.cdf.util.CDFUtils****All Implemented Interfaces:**[CDFConstants](#)public class **CDFUtils**

extends java.lang.Object

implements [CDFConstants](#)

This class contains the handy utility routines (methods) called by the core CDF Java APIs.

Field Summary**Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)**

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),

[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),
[DEFAULT_FLOAT_PADVALUE](#), [DEFAULT_INT1_PADVALUE](#),
[DEFAULT_INT2_PADVALUE](#), [DEFAULT_INT4_PADVALUE](#),
[DEFAULT_REAL4_PADVALUE](#), [DEFAULT_REAL8_PADVALUE](#),
[DEFAULT_UCHAR_PADVALUE](#), [DEFAULT_UINT1_PADVALUE](#),
[DEFAULT_UINT2_PADVALUE](#), [DEFAULT_UINT4_PADVALUE](#), [DELETE](#),
[DID_NOT_COMPRESS](#), [EMPTY_COMPRESSED_CDF](#), [END_OF_VAR](#),
[EPOCH_STRING_LEN](#), [EPOCH_STRING_LEN_EXTEND](#), [EPOCH1_STRING_LEN](#),
[EPOCH1_STRING_LEN_EXTEND](#), [EPOCH2_STRING_LEN](#),
[EPOCH2_STRING_LEN_EXTEND](#), [EPOCH3_STRING_LEN](#),
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[GLOBAL_SCOPE](#), [GZIP_COMPRESSION](#), [HOST_DECODING](#), [HOST_ENCODING](#),
[HP_DECODING](#), [HP_ENCODING](#), [HUFF_COMPRESSION](#), [IBM_PC_OVERFLOW](#),
[IBMPC_DECODING](#), [IBMPC_ENCODING](#), [IBMRS_DECODING](#), [IBMRS_ENCODING](#),
[ILLEGAL_EPOCH_FIELD](#), [ILLEGAL_EPOCH_VALUE](#), [ILLEGAL_FOR_SCOPE](#),
[ILLEGAL_IN_ZMODE](#), [ILLEGAL_ON_V1_CDF](#), [LIB_COPYRIGHT](#), [LIB_INCREMENT](#),
[LIB_RELEASE](#), [LIB_subINCREMENT](#), [LIB_VERSION](#), [MAC_DECODING](#),
[MAC_ENCODING](#), [MULTI_FILE](#), [MULTI_FILE_FORMAT](#), [NA_FOR_VARIABLE](#),
[NEGATIVE_FP_ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK_DECODING](#),
[NETWORK_ENCODING](#), [NeXT_DECODING](#), [NeXT_ENCODING](#), [NO_ATTR_SELECTED](#),
[NO_CDF_SELECTED](#), [NO_COMPRESSION](#), [NO_DELETE_ACCESS](#),
[NO_ENTRY_SELECTED](#), [NO_MORE_ACCESS](#), [NO_PADVALUE_SPECIFIED](#),
[NO_SPARSEARRAYS](#), [NO_SPARSERECORDS](#), [NO_STATUS_SELECTED](#), [NO_SUCH_ATTR](#),
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[RLE_OF_ZEROS](#), [ROW_MAJOR](#), [rVAR](#), [rVAR_ALLOCATEBLOCK](#),
[rVAR_ALLOCATEDFROM](#), [rVAR_ALLOCATEDTO](#), [rVAR_ALLOCATERECS](#),
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[rVAR_EXISTENCE](#), [rVAR_HYPERDATA](#), [rVAR_INITIALRECS](#),
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[rVAR_SEQPOS](#), [rVAR_SPARSEARRAYS](#), [rVAR_SPARSERECORDS](#),
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[rVARs_RECCOUNT](#), [rVARs_RECDATA](#), [rVARs_RECINTERVAL](#),
[rVARs_RECNUMBER](#), [SAVE](#), [SCRATCH_CREATE_ERROR](#), [SCRATCH_DELETE_ERROR](#),
[SCRATCH_READ_ERROR](#), [SCRATCH_WRITE_ERROR](#), [SELECT](#), [SGi_DECODING](#),
[SGi_ENCODING](#), [SINGLE_FILE](#), [SINGLE_FILE_FORMAT](#),

[SOME ALREADY ALLOCATED](#), [STAGE CACHESIZE](#), [STATUS TEXT](#),
[SUN DECODING](#), [SUN ENCODING](#), [TOO MANY PARMS](#), [TOO MANY VARS](#),
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),
[VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#),
[VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#),
[VAR READ ERROR](#), [VAR WRITE ERROR](#), [VARIABLE SCOPE](#), [VARY](#), [VAX DECODING](#),
[VAX ENCODING](#), [VIRTUAL RECORD DATA](#), [zENTRY](#), [zENTRY DATA](#),
[zENTRY DATASPEC](#), [zENTRY DATATYPE](#), [zENTRY EXISTENCE](#), [zENTRY NAME](#),
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[zVAR NUMRECS](#), [zVAR PADVALUE](#), [zVAR RECCOUNT](#), [zVAR RECINTERVAL](#),
[zVAR RECNUMBER](#), [zVAR RECORDS](#), [zVAR RECVARY](#), [zVAR RESERVEPERCENT](#),
[zVAR SEQDATA](#), [zVAR SEQPOS](#), [zVAR SPARSEARRAYS](#),
[zVAR SPARSERECORDS](#), [zVARs CACHESIZE](#), [zVARs MAXREC](#),
[zVARs RECDATA](#), [zVARs RECNUMBER](#)

Constructor Summary

[CDFUtils](#)()

Method Summary

static boolean	cdfFileExists (java.lang.String fileName) Checks the existence of the given CDF file name.
static long	getDataTypeValue (java.lang.String cdfDataType) Gets the long value of the given CDF data type in string.
static long	getLongCompressionType (java.lang.String compressionType) Gets the long representation of the given CDF compression type in string.

static long	<u>getLongEncoding</u> (java.lang.String encodingType) Gets the long value of the given CDF encoding type in string.
static long	<u>getLongFormat</u> (java.lang.String formatType) Gets the long value of the given CDF file format in string.
static long	<u>getLongMajority</u> (java.lang.String majorityType) Gets the long value of the given CDF majority.
static long	<u>getLongSparseRecord</u> (java.lang.String sparseRecordType) Gets the long value of the given sparse record type in string.
static long	<u>getNumElements</u> (long dataType, java.lang.Object data) Gets the number of elements contained in the given data object.
static java. lang.String	<u>getSignature</u> (java.lang.Object obj) Gets the java signature of the given object.
static java. lang.String	<u>getStringCompressionType</u> (CDF cdf) Gets the string representation of the given CDF file's compression type.
static java. lang.String	<u>getStringCompressionType</u> (long compressionType) Gets the string representation of the given CDF compression type.
static java. lang.String	<u>getStringCompressionType</u> (Variable var) Gets the string representation of the given variable's compression type.
static java. lang.String	<u>getStringData</u> (java.lang.Object data) Returns the string value of the given data.
static java. lang.String	<u>getStringData</u> (java.lang.Object data, int epochType) Returns the string value of the given data.
static java. lang.String	<u>getStringData</u> (java.lang.Object data, java.lang. String separator) returns the string of the value of the given data.
static java. lang.String	<u>getStringData</u> (java.lang.Object data, java.lang. String separator, int epochType) returns the string of the value of the given data.
static java. lang.String	<u>getStringDataType</u> (Entry entry) Gets the string value of the CDF data type for the given entry.
static java. lang.String	<u>getStringDataType</u> (long cdfDataType) Gets the string representation of the given CDF data type.

static java. lang.String	<u>getStringDataType</u> (<u>Variable</u> var) Gets the string value of the CDF data type for the given variable.
static java. lang.String	<u>getStringDecoding</u> (<u>CDF</u> cdf) Gets the string value of the given CDF file's decoding type.
static java. lang.String	<u>getStringDecoding</u> (long decodingType) Gets the string value of the given CDF decoding type .
static java. lang.String	<u>getStringEncoding</u> (<u>CDF</u> cdf) Get the string value of the given CDF's encoding type.
static java. lang.String	<u>getStringEncoding</u> (long encodingType) Gets the string value of the given CDF encoding type.
static java. lang.String	<u>getStringFormat</u> (<u>CDF</u> cdf) Gets the string value of the given CDF's file format.
static java. lang.String	<u>getStringFormat</u> (long formatType) Gets the string value of the given CDF's file format.
static java. lang.String	<u>getStringMajority</u> (<u>CDF</u> cdf) Gets the string value of the given CDF file's majority.
static java. lang.String	<u>getStringMajority</u> (long majorityType) Gets the string value of the given CDF majority.
static java. lang.String	<u>getStringSparseRecord</u> (long sparseRecordType) Gets the string value of the given sparse record type.
static java. lang.String	<u>getStringSparseRecord</u> (<u>Variable</u> var) Gets the string value of the given variable's sparse record type.
static void	<u>printData</u> (java.lang.Object data) Prints the value of the given data on the screen.
static void	<u>printData</u> (java.lang.Object data, int which) Prints the value of the given data on the screen.
static void	<u>printData</u> (java.lang.Object data, java.io. PrintWriter outWriter) Prints the value of the given data to the place designated by PrintWriter that can be a file, System.out, System.err, and etc.
static void	<u>printData</u> (java.lang.Object data, java.io. PrintWriter outWriter, int which)

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail**CDFUtils**

```
public CDFUtils()
```

Method Detail**getSignature**

```
public static java.lang.String getSignature(java.lang.Object obj)
```

Gets the java signature of the given object.

NOTE: Java primitive data types (e.g. int, long, byte, etc.) are not Objects. Thus they must be passed-in as an Object by using a wrapper (e.g. Integer(23)).

Signature	Java Programming Language Type
-----	-----
[Z	array of boolean
[B	array of byte
[C	array of char
[S	array of short
[I	array of int
[J	array of long
[F	array of float
[D	array of double

L fully-qualified-class fully-qualified class
 L fully-qualified-class; array of fully-qualified class

<code>java.lang.Boolean</code>	<code>Boolean</code>
<code>Ljava.lang.Boolean;</code>	<code>array of Boolean</code>
<code>java.lang.Byte</code>	<code>Byte</code>
<code>Ljava.lang.Byte;</code>	<code>array of Byte</code>
<code>java.lang.Short</code>	<code>Short</code>
<code>Ljava.lang.Short;</code>	<code>array of Short</code>
<code>java.lang.Integer</code>	<code>Integer</code>
<code>Ljava.lang.Integer;</code>	<code>array of Integer</code>
<code>java.lang.Long</code>	<code>Long</code>
<code>Ljava.lang.Long;</code>	<code>array of Long</code>
<code>java.lang.Float</code>	<code>Float</code>
<code>Ljava.lang.Float;</code>	<code>array of Float</code>
<code>java.lang.Double</code>	<code>Double</code>
<code>Ljava.lang.Double;</code>	<code>array of Double</code>
<code>java.lang.String</code>	<code>String</code>
<code>Ljava.lang.String;</code>	<code>array of String</code>

Parameters:

`obj` - the object from which Java signature is retrieved

Returns:

Java signature of the given object

getNumElements

```
public static long getNumElements(long dataType,
                                   java.lang.Object data)
    throws CDFException
```

Gets the number of elements contained in the given data object.

Parameters:

`dataType` - the CDF data type of the object to be examined

`data` - the data object to be examined

Returns:

If the data is a string: number of characters in the string

If the data is an array: number of elements in the array

Otherwise: 1

Throws:

[CDFException](#) - if a problem occurs getting the number of elements

printData

```
public static void printData(java.lang.Object data)
```

Prints the value of the given data on the screen. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

data - the data to be printed

printData

```
public static void printData(java.lang.Object data,  
                             int which)
```

Prints the value of the given data on the screen. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

data - the data to be printed

which - the Epoch data type data indicator

printData

```
public static void printData(java.lang.Object data,  
                             java.io.PrintWriter outWriter)
```

Prints the value of the given data to the place designated by PrintWriter that can be a file, System.out, System.err, and etc. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

The following example will send the contents of the given data to "myoutput.dat".

```
OutputStreamWriter outWriter = null;
PrintWriter out = null;
try {
    outWriter = new OutputStreamWriter("myoutput.dat",
"UTF-8");
    out = new PrintWriter(outWriter, true);
} catch (Exception e) {
    System.out.println ("Exception occurred: "+e);
}
CDFUtils.printData (data, out);
```

Parameters:

data - the data to be printed

outWriter - the print writer to which formatted representations of the object/data is printed as a text-output stream

printData

```
public static void printData(java.lang.Object data,
    java.io.PrintWriter outWriter,
    int which)
```

getStringData

```
public static java.lang.String getStringData(java.lang.Object data)
```

Returns the string value of the given data. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

data - the data to be parsed

Returns:

The string value of the given data/object.

If the data is an array, its elements are delimited by a space.

getStringData

```
public static java.lang.String getStringData( java.lang.Object data,  
                                              int epochType)
```

Returns the string value of the given data. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

data - the data to be parsed

epochType - epoch type indicator (==1 CDF_EPOCH, ==2 CDF_EPOCH16, ==0 others)

Returns:

The string value of the given data/object.

If the data is an array, its elements are delimited by a space.

getStringData

```
public static java.lang.String getStringData( java.lang.Object data,  
                                              java.lang.  
String separator)
```

returns the string of the value of the given data. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

data - the data to be parsed

separator - the delimiter for array elements

Returns:

The string value of the given data/object.

If the data is an array, its elements are delimited by the user defined separator.

getStringData

```
public static java.lang.String getStringData( java.lang.Object data,  
                                               java.lang.  
String separator,  
                                               int epochType)
```

returns the string of the value of the given data. Data can be a java primitive data type, Java Object (non-array), or 1-dimensional array of primitive Java data type.

Parameters:

`data` - the data to be parsed

`separator` - the delimiter for array elements

`epochType` - Epoch or Epoch16 data type indicator

== 1 for EPOCH, == 2 for EPOCH16, == 0 other data types

Returns:

The string value of the given data/object.

If the data is an array, its elements are delimited by the user defined separator.

getStringDataType

```
public static java.lang.String getStringDataType(Variable var)
```

Gets the string value of the CDF data type for the given variable.

Parameters:

`var` - the CDF variable to be examined

Returns:

See `getStringDataType` (long `cdfDataType`) for possible return values.

getStringDataType

```
public static java.lang.String getStringDataType(Entry entry)
```

Gets the string value of the CDF data type for the given entry.

Parameters:

entry - the entry to be examined

Returns:

String representation of the entry's CDF data type. See `getStringDataType(long cdfDataType)` for possible return values.

getStringDataType

```
public static java.lang.String getStringDataType(long cdfDataType)
```

Gets the string representation of the given CDF data type.

Parameters:

cdfDataType - the CDF data type to be examined and translated

It should be one of the following:

- CDF_BYTE
- CDF_CHAR
- CDF_UCHAR
- CDF_INT1
- CDF_UINT1
- CDF_INT2
- CDF_UINT2
- CDF_INT4
- CDF_UINT4
- CDF_REAL4
- CDF_FLOAT
- CDF_REAL8
- CDF_DOUBLE

- CDF_EPOCH

Returns:

String representation of `cdfDataType`. The returned value is one of the valid values describe above for `cdfDataType`. "UNKNOWN" is returned if invalid `cdfDataType` is given.

getDataTypeValue

```
public static long getDataTypeValue(java.lang.String cdfDataType)
```

Gets the long value of the given CDF data type in string. This is a reverse function from `getStringDataType`.

Parameters:

`cdfDataType` - the string CDF data type to be examined and translated. It should be one of the following values:

- CDF_BYTE
- CDF_CHAR
- CDF_UCHAR
- CDF_INT1
- CDF_UINT1
- CDF_INT2
- CDF_UINT2
- CDF_INT4
- CDF_UINT4
- CDF_REAL4
- CDF_FLOAT
- CDF_REAL8
- CDF_DOUBLE
- CDF_EPOCH

Returns:

long representation of `cdfDataType`. The returned value is one of the valid values described above for `cdfDataType`. -1 is returned if invalid `cdfDataType` is given.

getStringCompressionType

```
public static java.lang.String getStringCompressionType  
(long compressionType)
```

Gets the string representation of the given CDF compression type.

Parameters:

`compressionType` - the CDF compression type to be translated. it should be one of the following:

- NO_COMPRESSION
- RLE_COMPRESSION
- HUFF_COMPRESSION
- AHUFF_COMPRESSION
- GZIP_COMPRESSION

Returns:

String representation of `compressionType`. The returned value is one of the following:

- NONE
 - RLE
 - Huffman
 - Adaptive Huffman
 - GZIP
 - UNKNOWN (for unknown `compressionType`)
-

getLongCompressionType

```
public static long getLongCompressionType(java.lang.  
String compressionType)
```

Gets the long representation of the given CDF compression type in string.

Parameters:

`compressionType` - the CDF compression type to be translated. It should be one of the following:

- NONE
- RLE
- Huffman
- Adaptive Huffman
- GZIP

Returns:

long representation of compressionType. The returned value is one of the following:

- NO_COMPRESSION
- RLE_COMPRESSION
- HUFF_COMPRESSION
- AHUFF_COMPRESSION
- GZIP_COMPRESSION
- -1 (for unknown compressionType)

getStringCompressionType

```
public static java.lang.String getStringCompressionType(Variable var)
```

Gets the string representation of the given variable's compression type.

Parameters:

var - the variable to be examined

Returns:

string representation of the given variable's compression type. See `getStringCompressionType(long compressionType)` for possible return values.

getStringCompressionType

```
public static java.lang.String getStringCompressionType(CDF cdf)
```

Gets the string representation of the given CDF file's compression type.

Parameters:

cdf - the CDF to be examined

Returns:

string representation of the given CDF file's compression type. See `getStringCompressionType(long compressionType)` for possible return values.

getStringEncoding

```
public static java.lang.String getStringEncoding(long encodingType)
```

Gets the string value of the given CDF encoding type.

Parameters:

encodingType - the CDF encoding type to be examined. It should be one of the following:

- NETWORK_ENCODING
- SUN_ENCODING
- DECSTATION_ENCODING
- SGi_ENCODING
- IBMPC_ENCODING
- IBMRS_ENCODING
- HOST_ENCODING
- MAC_ENCODING
- HP_ENCODING
- NeXT_ENCODING
- ALPHAOsf1_ENCODING
- ALPHAVMSd_ENCODING
- ALPHAVMSg_ENCODING
- ALPHAVMSi_ENCODING

Returns:

string representation of encodingType. The returned value is one of the following:

- NETWORK
- SUN
- DECSTATION
- SGi
- IBMPC
- IBMRS
- HOST
- MAC
- HP
- NeXT
- ALPHAOsf1
- ALPHAVMSd
- ALPHAVMSg
- ALPHAVMSi
- UNKNOWN (for unknown encodingType)

getLongEncoding

```
public static long getLongEncoding(java.lang.String encodingType)
```

Gets the long value of the given CDF encoding type in string.

Parameters:

encodingType - the CDF encoding type to be examined. It should be one of the following:

- NETWORK
- SUN
- DECSTATION
- SGi
- IBMPC
- IBMRS
- HOST
- MAC
- HP
- NeXT
- ALPHAOSF1
- ALPHAVMSd
- ALPHAVMSg
- ALPHAVMSi

Returns:

long representation of encodingType. The returned value is one of the following:

- NETWORK_ENCODING
- SUN_ENCODING
- DECSTATION_ENCODING
- SGi_ENCODING
- IBMPC_ENCODING
- IBMRS_ENCODING
- HOST_ENCODING
- MAC_ENCODING
- HP_ENCODING
- NeXT_ENCODING
- ALPHAOSF1_ENCODING
- ALPHAVMSd_ENCODING
- ALPHAVMSg_ENCODING
- ALPHAVMSi_ENCODING
- -1 (for unknown encodingType)

getStringEncoding

```
public static java.lang.String getStringEncoding(CDF cdf)
```

Get the string value of the given CDF's encoding type.

Parameters:

cdf - the CDF to be examined

Returns:

string representation of the given CDF's encoding type. See `getStringEncoding(long encodingType)` for possible return values.

getStringDecoding

```
public static java.lang.String getStringDecoding(long decodingType)  
throws CDFException
```

Gets the string value of the given CDF decoding type

Parameters:

decodingType - the CDF decoding type to be examined. It should be one of the following:

- NETWORK_DECODING
- SUN_DECODING
- DECSTATION_DECODING
- SGI_DECODING
- IBMPC_DECODING
- IBMRS_DECODING
- HOST_DECODING
- MAC_DECODING
- HP_DECODING
- NeXT_DECODING
- ALPHAOSF1_DECODING

- ALPHAVMSd_DECODING
- ALPHAVMSg_DECODING
- ALPHAVMSi_DECODING
- -1 (for unknown encodingType)

Returns:

string representation of decodingType. See `getStringEncoding` (long encodingType) for possible return values.

Throws:

[CDFException](#) - if a problem occurs getting the string value of the given decoding type

getStringDecoding

```
public static java.lang.String getStringDecoding(CDF cdf)  
                                         throws CDFException
```

Gets the string value of the given CDF file's decoding type.

Parameters:

cdf - the CDF to be examined

Returns:

string representation of the given CDF file's decoding type. See `getStringEncoding` (long encodingType) for possible return values.

Throws:

[CDFException](#) - if a problem occurs getting the value of the decoding type defined for the given CDF

getStringMajority

```
public static java.lang.String getStringMajority(long majorityType)
```

Gets the string value of the given CDF majority.

Parameters:

majorityType - the CDF majority to be translated

Returns:

string representation of majorityType. The returned value is one of the following:

- ROW
 - COLUMN
 - UNKNOWN (for unknown majorityType)
-

getLongMajority

```
public static long getLongMajority(java.lang.String majorityType)
```

Gets the long value of the given CDF majority.

Parameters:

majorityType - the CDF majority to be translated. It should be either ROW or COLUMN

Returns:

long representation of majorityType. The returned value is one of the following:

- ROW_MAJOR
 - COLUMN_MAJOR
 - -1 (for unknown majorityType)
-

getStringMajority

```
public static java.lang.String getStringMajority(CDF cdf)
```

Gets the string value of the given CDF file's majority.

Parameters:

cdf - the CDF to be examined

Returns:

string representation of the given CDF file's majority. The returned value is one of the following:

- ROW

- COLUMN

getStringFormat

```
public static java.lang.String getStringFormat(long formatType)
```

Gets the string value of the given CDF's file format.

Parameters:

formatType - the CDF file format to be translated. It should be either SINGLE or MULTI

Returns:

string representation of formatType. The returned value is either SINGLE, MULTI, or UNKNOWN.

getLongFormat

```
public static long getLongFormat(java.lang.String formatType)
```

Gets the long value of the given CDF file format in string.

Parameters:

formatType - the CDF file format to be translated. It should be either SINGLE or MULTI.

Returns:

long representation of formatType. The returned value is one of the following:

- SINGLE_FILE
 - MULTI_FILE
 - -1 (for unknown format type)
-

getStringFormat

```
public static java.lang.String getStringFormat(CDF cdf)
```

Gets the string value of the given CDF's file format.

Parameters:

`cdf` - the CDF to be examined

Returns:

string representation of given CDF's file format. The returned value is either SINGLE, MULTI, or UNKNOWN.

getStringSparseRecord

```
public static java.lang.String getStringSparseRecord  
(long sparseRecordType)
```

Gets the string value of the given sparse record type.

Parameters:

`sparseRecordType` - the sparse record type to be translated. It should be one of the following:

- NO_SPARSERECORDS
- PAD_SPARSERECORDS
- PREV_SPARSERECORDS

Returns:

string representation of `sparseRecordType`. The returned value is one of the following:

- None
 - PAD
 - PREV
 - UNKNOWN
-

getLongSparseRecord

```
public static long getLongSparseRecord(java.lang.  
String sparseRecordType)
```

Gets the long value of the given sparse record type in string.

Parameters:

`sparseRecordType` - the sparse record type to be translated. It should be one of the following:

- None
- PAD or `sRecords.PAD`
- PREV or `sRecords.PREV`

Returns:

long representation of `sparseRecordType`. The returned value is one of the following:

- NO_SPARSERECORDS
 - PAD_SPARSERECORDS
 - PREV_SPARSERECORDS
 - -1 (for unknown sparse record type)
-

getStringSparseRecord

```
public static java.lang.String getStringSparseRecord(Variable var)
```

Gets the string value of the given variable's sparse record type.

Parameters:

`var` - the variable to be examined

Returns:

string representation of the given variable's sparse record type. The returned value is one of the following:

- None
 - PAD
 - PREV
 - UNKNOWN
-

cdfFileExists

```
public static boolean cdfFileExists(java.lang.String fileName)
```

Checks the existence of the given CDF file name. If the file name doesn't have ".cdf" file extension, it adds ".cdf" suffix at the end of the file name before checking the existence of the

file. If the file exists in the current directory, it returns TRUE. Otherwise, FALSE is returned.

Parameters:

`fileName` - the name of the CDF file to be checked for existence

Returns:

true - if `fileName` exists in the current directory

false - if `fileName` doesn't exist in the current directory

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gsfc.nssdc.cdf

Class Entry

java.lang.Object

└─ gsfc.nssdc.cdf.Entry

All Implemented Interfaces:

[CDFConstants](#), [CDFObject](#)

public class **Entry**

extends java.lang.Object

implements [CDFObject](#), [CDFConstants](#)

This class describes a CDF global or variable attribute entry.

Note: In the Java CDF API there is no concept of an rEntry since r variables are not supported. Only z variables are supported since it is far superior and efficient than r variables.

See Also:

[Attribute](#)

Field Summary

Fields inherited from interface gsfc.nssdc.cdf.[CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),

[DEFAULT FLOAT PADVALUE](#), [DEFAULT INT1 PADVALUE](#),
[DEFAULT INT2 PADVALUE](#), [DEFAULT INT4 PADVALUE](#),
[DEFAULT REAL4 PADVALUE](#), [DEFAULT REAL8 PADVALUE](#),
[DEFAULT UCHAR PADVALUE](#), [DEFAULT UINT1 PADVALUE](#),
[DEFAULT UINT2 PADVALUE](#), [DEFAULT UINT4 PADVALUE](#), [DELETE](#),
[DID NOT COMPRESS](#), [EMPTY COMPRESSED CDF](#), [END OF VAR](#),
[EPOCH STRING LEN](#), [EPOCH STRING LEN EXTEND](#), [EPOCH1 STRING LEN](#),
[EPOCH1 STRING LEN EXTEND](#), [EPOCH2 STRING LEN](#),
[EPOCH2 STRING LEN EXTEND](#), [EPOCH3 STRING LEN](#),
[EPOCH3 STRING LEN EXTEND](#), [EPOCHx FORMAT MAX](#), [EPOCHx STRING MAX](#),
[FORCED PARAMETER](#), [gENTRY](#), [gENTRY DATA](#), [gENTRY DATASPEC](#),
[gENTRY DATATYPE](#), [gENTRY EXISTENCE](#), [gENTRY NUMELEMS](#), [GET](#),
[GLOBAL SCOPE](#), [GZIP COMPRESSION](#), [HOST DECODING](#), [HOST ENCODING](#),
[HP DECODING](#), [HP ENCODING](#), [HUFF COMPRESSION](#), [IBM PC OVERFLOW](#),
[IBMPC DECODING](#), [IBMPC ENCODING](#), [IBMRS DECODING](#), [IBMRS ENCODING](#),
[ILLEGAL EPOCH FIELD](#), [ILLEGAL EPOCH VALUE](#), [ILLEGAL FOR SCOPE](#),
[ILLEGAL IN zMODE](#), [ILLEGAL ON V1 CDF](#), [LIB COPYRIGHT](#), [LIB INCREMENT](#),
[LIB RELEASE](#), [LIB subINCREMENT](#), [LIB VERSION](#), [MAC DECODING](#),
[MAC ENCODING](#), [MULTI FILE](#), [MULTI FILE FORMAT](#), [NA FOR VARIABLE](#),
[NEGATIVE FP ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK DECODING](#),
[NETWORK ENCODING](#), [NeXT DECODING](#), [NeXT ENCODING](#), [NO ATTR SELECTED](#),
[NO CDF SELECTED](#), [NO COMPRESSION](#), [NO DELETE ACCESS](#),
[NO ENTRY SELECTED](#), [NO MORE ACCESS](#), [NO PADVALUE SPECIFIED](#),
[NO SPARSEARRAYS](#), [NO SPARSERECORDS](#), [NO STATUS SELECTED](#), [NO SUCH ATTR](#),
[NO SUCH CDF](#), [NO SUCH ENTRY](#), [NO SUCH RECORD](#), [NO SUCH VAR](#),
[NO VAR SELECTED](#), [NO VARS IN CDF](#), [NO WRITE ACCESS](#), [NOT A CDF](#),
[NOT A CDF OR NOT SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#),
[OPTIMAL ENCODING TREES](#), [PAD SPARSERECORDS](#),
[PRECEEDING RECORDS ALLOCATED](#), [PREV SPARSERECORDS](#), [PUT](#),
[READ ONLY DISTRIBUTION](#), [READ ONLY MODE](#), [READONLYoff](#), [READONLYon](#),
[rENTRY](#), [rENTRY DATA](#), [rENTRY DATASPEC](#), [rENTRY DATATYPE](#),
[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
[RLE OF ZEROS](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),

[rVAR_nINDEXLEVELS](#), [rVAR_nINDEXRECORDS](#), [rVAR_NUMallocRECS](#),
[rVAR_NUMBER](#), [rVAR_NUMELEMS](#), [rVAR_NUMRECS](#), [rVAR_PADVALUE](#),
[rVAR_RECORDS](#), [rVAR_RECVARY](#), [rVAR_RESERVEPERCENT](#), [rVAR_SEQDATA](#),
[rVAR_SEQPOS](#), [rVAR_SPARSEARRAYS](#), [rVAR_SPARSERECORDS](#),
[rVARs_CACHESIZE](#), [rVARs_DIMCOUNTS](#), [rVARs_DIMINDICES](#),
[rVARs_DIMINTERVALS](#), [rVARs_DIMSIZES](#), [rVARs_MAXREC](#), [rVARs_NUMDIMS](#),
[rVARs_RECCOUNT](#), [rVARs_RECADATA](#), [rVARs_RECINTERVAL](#),
[rVARs_RECNUMBER](#), [SAVE](#), [SCRATCH_CREATE_ERROR](#), [SCRATCH_DELETE_ERROR](#),
[SCRATCH_READ_ERROR](#), [SCRATCH_WRITE_ERROR](#), [SELECT](#), [SGi_DECODING](#),
[SGi_ENCODING](#), [SINGLE_FILE](#), [SINGLE_FILE_FORMAT](#),
[SOME_ALREADY_ALLOCATED](#), [STAGE_CACHESIZE](#), [STATUS_TEXT](#),
[SUN_DECODING](#), [SUN_ENCODING](#), [TOO_MANY_PARMS](#), [TOO_MANY_VARS](#),
[UNKNOWN_COMPRESSION](#), [UNKNOWN_SPARSENESS](#), [UNSUPPORTED_OPERATION](#),
[VAR_ALREADY_CLOSED](#), [VAR_CLOSE_ERROR](#), [VAR_CREATE_ERROR](#),
[VAR_DELETE_ERROR](#), [VAR_EXISTS](#), [VAR_NAME_TRUNC](#), [VAR_OPEN_ERROR](#),
[VAR_READ_ERROR](#), [VAR_WRITE_ERROR](#), [VARIABLE_SCOPE](#), [VARY](#), [VAX_DECODING](#),
[VAX_ENCODING](#), [VIRTUAL_RECORD_DATA](#), [zENTRY](#), [zENTRY_DATA](#),
[zENTRY_DATASPEC](#), [zENTRY_DATATYPE](#), [zENTRY_EXISTENCE](#), [zENTRY_NAME](#),
[zENTRY_NUMELEMS](#), [zMODEoff](#), [zMODEon1](#), [zMODEon2](#), [zVAR](#),
[zVAR_ALLOCATEBLOCK](#), [zVAR_ALLOCATEDFROM](#), [zVAR_ALLOCATEDTO](#),
[zVAR_ALLOCATERECS](#), [zVAR_BLOCKINGFACTOR](#), [zVAR_CACHESIZE](#),
[zVAR_COMPRESSION](#), [zVAR_DATA](#), [zVAR_DATASPEC](#), [zVAR_DATATYPE](#),
[zVAR_DIMCOUNTS](#), [zVAR_DIMINDICES](#), [zVAR_DIMINTERVALS](#),
[zVAR_DIMSIZES](#), [zVAR_DIMVARYS](#), [zVAR_EXISTENCE](#), [zVAR_HYPERDATA](#),
[zVAR_INITIALRECS](#), [zVAR_MAXallocREC](#), [zVAR_MAXREC](#), [zVAR_NAME](#),
[zVAR_nINDEXENTRIES](#), [zVAR_nINDEXLEVELS](#), [zVAR_nINDEXRECORDS](#),
[zVAR_NUMallocRECS](#), [zVAR_NUMBER](#), [zVAR_NUMDIMS](#), [zVAR_NUMELEMS](#),
[zVAR_NUMRECS](#), [zVAR_PADVALUE](#), [zVAR_RECCOUNT](#), [zVAR_RECINTERVAL](#),
[zVAR_RECNUMBER](#), [zVAR_RECORDS](#), [zVAR_RECVARY](#), [zVAR_RESERVEPERCENT](#),
[zVAR_SEQDATA](#), [zVAR_SEQPOS](#), [zVAR_SPARSEARRAYS](#),
[zVAR_SPARSERECORDS](#), [zVARs_CACHESIZE](#), [zVARs_MAXREC](#),
[zVARs_RECADATA](#), [zVARs_RECNUMBER](#)

Method Summary

static [Entry](#) [create](#)([Attribute](#) myAttribute, long id, long dataType, java.lang.Object data)

Creates a new global or variable attribute entry.

void	delete () Deletes this entry.
java.lang. Object	getData () Gets the data for this entry.
long	getDataType () Gets the CDF data type of this entry.
long	getID () Gets the ID of this entry.
java.lang. String	getName () Gets the name of this entry.
long	getNumElements () Gets the number of elements in this entry.
void	putData (long dataType, java.lang.Object data) Put the entry data into the CDF.
void	rename (java.lang.String name) This method is here as a placeholder since the Entry class implements the CDFObject interface that includes "rename".
protected static Entry	retrieve (Attribute myAttribute, long id) Get the attribute entry or entries for the given attribute.
protected void	select () Selects this entry.
void	updateDataSpec (long dataType, long numElements) Update the data specification (data type and number of elements) of the entry.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Method Detail

retrieve

protected static [Entry](#) **retrieve**([Attribute](#) myAttribute,

```
        long id)  
throws CDFException
```

Get the attribute entry or entries for the given attribute.

Parameters:

`myAttribute` - The attribute from which entry is retrieved
`id` - The entry id

Returns:

The requested attribute entry

Throws:

[CDFException](#) - If there is a problem getting the entry

create

```
public static Entry create(Attribute myAttribute,  
                             long id,  
                             long dataType,  
                             java.lang.Object data)  
throws CDFException
```

Creates a new global or variable attribute entry. One can create as many global and variable entries as needed. The following example creates four entries for the global attribute "Project":

```
Attribute project = Attribute.create(cdf, "Project",  
GLOBAL_SCOPE);  
Entry.create(project, 0, CDF_CHAR, "Project name: IMAGE");  
Entry.create(project, 1, CDF_CHAR, "Description 1");  
Entry.create(project, 2, CDF_CHAR, "Description 2");
```

The following example creates a variable attribute entry for the variable "Longitude" associated with the attribute "VALIDMIN":

```
Variable longitude = cdf.getVariable("Longitude");  
Attribute validMin = Attribute.create(cdf, "VALIDMIN",  
                                     VARIABLE_SCOPE);
```

```
Entry.create(validMin, longitude.getID(), CDF_INT2,  
            new Short((short)10));
```

OR

```
longitude.putEntry(validMin, CDF_INT2, new Short((short)  
180));
```

Parameters:

`myAttribute` - the attribute to which this entry belongs

`id` - the entry id

`dataType` - the CDF data type for this entry that should be one of the following:

- CDF_BYTE - 1-byte, signed integer
- CDF_CHAR - 1-byte, signed character
- CDF_INT1 - 1-byte, signed integer
- CDF_UCHAR - 1-byte, unsigned character
- CDF_UINT1 - 1-byte, unsigned integer
- CDF_INT2 - 2-byte, signed integer
- CDF_UNIT2 - 2-byte, unsigned integer
- CDF_INT4 - 4-byte, signed integer
- CDF_UINT4 - 4-byte, unsigned integer
- CDF_REAL4 - 4-byte, floating point
- CDF_FLOAT - 4-byte, floating point
- CDF_REAL8 - 8-byte, floating point
- CDF_DOUBLE - 8-byte, floating point
- CDF_EPOCH - 8-byte, floating point
- CDF_EPOCH16 - 2*8-byte, floating point

`data` - the entry data to be added

Returns:

newly created attribute entry

Throws:

[CDFException](#) - if there is a problem creating an entry

delete

```
public void delete()
    throws CDFException
```

Deletes this entry.

Specified by:

[delete](#) in interface [CDFObject](#)

Throws:

[CDFException](#) - if there is a problem deleting this entry

getDataType

```
public long getDataType()
```

Gets the CDF data type of this entry. See the description of the create method for the CDF data types supported by the CDF library.

Returns:

the CDF data type of this entry

getNumElements

```
public long getNumElements()
```

Gets the number of elements in this entry. For CDF_CHAR, it returns the number of characters stored.

Entry data	Number of elements
-----	-----
10	1
20.8	1
10 20 30	3
20.8 20.9	2
"Upper Limits"	12

Returns:

the number of elements stored in this entry

getData

```
public java.lang.Object getData()
```

Gets the data for this entry.

Returns:

the data for this entry

getID

```
public long getID()
```

Gets the ID of this entry.

Returns:

the ID/number of this entry

getName

```
public java.lang.String getName()
```

Gets the name of this entry. Since an entry doesn't have its own name, the string representation of this entry ID is returned.

This method overrides the `getName()` method defined in the Java Object class. If this method is called explicitly or implicitly (i.e. just the entry name by itself), it returns the string representation of the entry ID.

Specified by:

[getName](#) in interface [CDFObject](#)

Returns:

string representation of this attribute entry ID

rename

```
public void rename(java.lang.String name)
    throws CDFException
```

This method is here as a placeholder since the Entry class implements the CDFObject interface that includes "rename".

Specified by:

[rename](#) in interface [CDFObject](#)

Parameters:

name - - not applicable

Throws:

[CDFException](#) - - not applicable

updateDataSpec

```
public void updateDataSpec(long dataType,
    long numElements)
    throws CDFException
```

Update the data specification (data type and number of elements) of the entry.

Throws:

[CDFException](#)

putData

```
public void putData(long dataType,
    java.lang.Object data)
```


throws [CDFException](#)

Put the entry data into the CDF.

Throws:

[CDFException](#)

select

```
protected final void select()  
    throws CDFException
```

Selects this entry. There is no need to build the entire select cmd vector since this is handled in the JNI native method in cdfNativeLibrary.c.

Throws:

[CDFException](#) - if there was a problem in selecting the current entry

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gsfc.nssdc.cdf.util

Class Epoch

java.lang.Object

└─ **gsfc.nssdc.cdf.util.Epoch**

All Implemented Interfaces:

[CDFConstants](#)

public class **Epoch**

extends java.lang.Object

implements [CDFConstants](#)

Example:

```
// Get the milliseconds to Aug 5, 1990 at 5:00
double ep = Epoch.compute(1990, 8, 5, 5, 0, 0, 0);
//Get the year, month, day, hour, minutes, seconds, milliseconds for
ep
long times[] = Epoch.breakdown(ep);
for (int i=0;i<times.length;i++)
    System.out.print(times[i]+" ");
System.out.println();
// Printout the epoch in various formats
System.out.println(Epoch.encode(ep));
System.out.println(Epoch.encode1(ep));
System.out.println(Epoch.encode2(ep));
System.out.println(Epoch.encode3(ep));
// Print out the date using format
String format = " , at :";
System.out.println(Epoch.encodedex(ep,format));
```

Field Summary

Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),

COLUMN MAJOR, COMPRESS CACHESIZE, COMPRESSION ERROR, CONFIRM,
CORRUPTED V2 CDF, CORRUPTED V3 CDF, CREATE, CURgENTRY EXISTENCE,
CURrENTRY EXISTENCE, CURzENTRY EXISTENCE, DATATYPE MISMATCH,
DATATYPE SIZE, DECOMPRESSION ERROR, DECSTATION DECODING,
DECSTATION ENCODING, DEFAULT BYTE PADVALUE, DEFAULT CHAR PADVALUE,
DEFAULT DOUBLE PADVALUE, DEFAULT EPOCH PADVALUE,
DEFAULT FLOAT PADVALUE, DEFAULT INT1 PADVALUE,
DEFAULT INT2 PADVALUE, DEFAULT INT4 PADVALUE,
DEFAULT REAL4 PADVALUE, DEFAULT REAL8 PADVALUE,
DEFAULT UCHAR PADVALUE, DEFAULT UINT1 PADVALUE,
DEFAULT UINT2 PADVALUE, DEFAULT UINT4 PADVALUE, DELETE,
DID NOT COMPRESS, EMPTY COMPRESSED CDF, END OF VAR,
EPOCH STRING LEN, EPOCH STRING LEN EXTEND, EPOCH1 STRING LEN,
EPOCH1 STRING LEN EXTEND, EPOCH2 STRING LEN,
EPOCH2 STRING LEN EXTEND, EPOCH3 STRING LEN,
EPOCH3 STRING LEN EXTEND, EPOCHx FORMAT MAX, EPOCHx STRING MAX,
FORCED PARAMETER, gENTRY, gENTRY DATA, gENTRY DATASPEC,
gENTRY DATATYPE, gENTRY EXISTENCE, gENTRY NUMELEMS, GET,
GLOBAL SCOPE, GZIP COMPRESSION, HOST DECODING, HOST ENCODING,
HP DECODING, HP ENCODING, HUFF COMPRESSION, IBM PC OVERFLOW,
IBMPC DECODING, IBMPC ENCODING, IBMRS DECODING, IBMRS ENCODING,
ILLEGAL EPOCH FIELD, ILLEGAL EPOCH VALUE, ILLEGAL FOR SCOPE,
ILLEGAL IN zMODE, ILLEGAL ON V1 CDF, LIB COPYRIGHT, LIB INCREMENT,
LIB RELEASE, LIB subINCREMENT, LIB VERSION, MAC DECODING,
MAC ENCODING, MULTI FILE, MULTI FILE FORMAT, NA FOR VARIABLE,
NEGATIVE FP ZERO, NEGtoPOSfp0off, NEGtoPOSfp0on, NETWORK DECODING,
NETWORK ENCODING, NeXT DECODING, NeXT ENCODING, NO ATTR SELECTED,
NO CDF SELECTED, NO COMPRESSION, NO DELETE ACCESS,
NO ENTRY SELECTED, NO MORE ACCESS, NO PADVALUE SPECIFIED,
NO SPARSEARRAYS, NO SPARSERECORDS, NO STATUS SELECTED, NO SUCH ATTR,
NO SUCH CDF, NO SUCH ENTRY, NO SUCH RECORD, NO SUCH VAR,
NO VAR SELECTED, NO VARS IN CDF, NO WRITE ACCESS, NOT A CDF,
NOT A CDF OR NOT SUPPORTED, NOVARY, NULL, OPEN,
OPTIMAL ENCODING TREES, PAD SPARSERECORDS,
PRECEEDING RECORDS ALLOCATED, PREV SPARSERECORDS, PUT,
READ ONLY DISTRIBUTION, READ ONLY MODE, READONLYoff, READONLYon,
rENTRY, rENTRY DATA, rENTRY DATASPEC, rENTRY DATATYPE,
rENTRY EXISTENCE, rENTRY NAME, rENTRY NUMELEMS, RLE COMPRESSION,

[RLE OF ZEROS](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),
[rVAR nINDEXLEVELS](#), [rVAR nINDEXRECORDS](#), [rVAR NUMallocRECS](#),
[rVAR NUMBER](#), [rVAR NUMELEMS](#), [rVAR NUMRECS](#), [rVAR PADVALUE](#),
[rVAR RECORDS](#), [rVAR RECVARY](#), [rVAR RESERVEPERCENT](#), [rVAR SEQDATA](#),
[rVAR SEQPOS](#), [rVAR SPARSEARRAYS](#), [rVAR SPARSERECORDS](#),
[rVARs CACHESIZE](#), [rVARs DIMCOUNTS](#), [rVARs DIMINDICES](#),
[rVARs DIMINTERVALS](#), [rVARs DIMSIZES](#), [rVARs MAXREC](#), [rVARs NUMDIMS](#),
[rVARs RECCOUNT](#), [rVARs RECDATA](#), [rVARs RECINTERVAL](#),
[rVARs RECNUMBER](#), [SAVE](#), [SCRATCH CREATE ERROR](#), [SCRATCH DELETE ERROR](#),
[SCRATCH READ ERROR](#), [SCRATCH WRITE ERROR](#), [SELECT](#), [SGi DECODING](#),
[SGi ENCODING](#), [SINGLE FILE](#), [SINGLE FILE FORMAT](#),
[SOME ALREADY ALLOCATED](#), [STAGE CACHESIZE](#), [STATUS TEXT](#),
[SUN DECODING](#), [SUN ENCODING](#), [TOO MANY PARMS](#), [TOO MANY VARS](#),
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),
[VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#),
[VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#),
[VAR READ ERROR](#), [VAR WRITE ERROR](#), [VARIABLE SCOPE](#), [VARY](#), [VAX DECODING](#),
[VAX ENCODING](#), [VIRTUAL RECORD DATA](#), [zENTRY](#), [zENTRY DATA](#),
[zENTRY DATASPEC](#), [zENTRY DATATYPE](#), [zENTRY EXISTENCE](#), [zENTRY NAME](#),
[zENTRY NUMELEMS](#), [zMODEoff](#), [zMODEon1](#), [zMODEon2](#), [zVAR](#),
[zVAR ALLOCATEBLOCK](#), [zVAR ALLOCATEDFROM](#), [zVAR ALLOCATEDTO](#),
[zVAR ALLOCATERECS](#), [zVAR BLOCKINGFACTOR](#), [zVAR CACHESIZE](#),
[zVAR COMPRESSION](#), [zVAR DATA](#), [zVAR DATASPEC](#), [zVAR DATATYPE](#),
[zVAR DIMCOUNTS](#), [zVAR DIMINDICES](#), [zVAR DIMINTERVALS](#),
[zVAR DIMSIZES](#), [zVAR DIMVARYS](#), [zVAR EXISTENCE](#), [zVAR HYPERDATA](#),
[zVAR INITIALRECS](#), [zVAR MAXallocREC](#), [zVAR MAXREC](#), [zVAR NAME](#),
[zVAR nINDEXENTRIES](#), [zVAR nINDEXLEVELS](#), [zVAR nINDEXRECORDS](#),
[zVAR NUMallocRECS](#), [zVAR NUMBER](#), [zVAR NUMDIMS](#), [zVAR NUMELEMS](#),
[zVAR NUMRECS](#), [zVAR PADVALUE](#), [zVAR RECCOUNT](#), [zVAR RECINTERVAL](#),
[zVAR RECNUMBER](#), [zVAR RECORDS](#), [zVAR RECVARY](#), [zVAR RESERVEPERCENT](#),
[zVAR SEQDATA](#), [zVAR SEQPOS](#), [zVAR SPARSEARRAYS](#),
[zVAR SPARSERECORDS](#), [zVARs CACHESIZE](#), [zVARs MAXREC](#),
[zVARs RECDATA](#), [zVARs RECNUMBER](#)

Constructor Summary

[Epoch](#)()

Method Summary

static long[]	breakdown (double epoch) Breaks an EPOCH value down into its component parts.
static double	compute (long year, long month, long day, long hour, long minute, long second, long msec) Computes an EPOCH value based on its component parts.
static java.lang.String	encode (double epoch) Converts an EPOCH value into a readable date/time string.
static java.lang.String	encode1 (double epoch) Converts an EPOCH value into a readable date/time string.
static java.lang.String	encode2 (double epoch) Converts an EPOCH value into a readable date/time string.
static java.lang.String	encode3 (double epoch) Converts an EPOCH value into a readable date/time string.
static java.lang.String	encodex (double epoch, java.lang.String formatString) Converts an EPOCH value into a readable date/time string using the specified format.
static double	parse (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	parse1 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	parse2 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	parse3 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.

Methods inherited from class java.lang.Object

```
clone, equals, finalize, getClass, hashCode, notify, notifyAll,  
toString, wait, wait, wait
```

Constructor Detail

Epoch

```
public Epoch()
```

Method Detail

parse

```
public static double parse(java.lang.String inString)  
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH value. The format must be exactly as shown below. Month abbreviations may be in any case and are always the first three letters of the month.

```
Format:    dd-mmm-yyyy hh:mm:ss.mmm  
Examples:  1-Apr-1990 03:05:02.000  
           10-Oct-1993 23:45:49.999
```

The expected format is the same as that produced by encodeEPOCH.

Parameters:

`inString` - the epoch in string representation

Returns:

the value of the epoch represented by `inString`

Throws:

[CDFException](#) - if a bad epoch value is passed in `inString`

parse1

```
public static double parse1(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH value. The format must be exactly as shown below. Note that if there are less than 7 digits after the decimal point, zeros (0's) are assumed for the missing digits.

```
Format:      yyyyymmdd.tttttttt
Examples:    19950508.0000000
             19671231.58      (== 19671213.5800000)
```

The expected format is the same as that produced by `encodeEPOCH1`.

Parameters:

`inString` - the epoch in string representation

Returns:

the value of the epoch represented by `inString`

Throws:

[CDFException](#) - if a bad epoch value is passed in `inString`

parse2

```
public static double parse2(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH value. The format must be exactly as shown below.

```
Format:      yyyyymmddhhmmss
Examples:    19950508000000
             19671231235959
```

The expected format is the same as that produced by `encodeEPOCH2`.

Parameters:

`inString` - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

parse3

```
public static double parse3(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH value. The format must be exactly as shown below.

```
Format:      yyyy-mm-ddThh:mm:ss.cccZ
Examples:    1990-04-01T03:05:02.000Z
             1993-10-10T23:45:49.999Z
```

The expected format is the same as that produced by encodeEPOCH3.

Parameters:

inString - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

encode

```
public static java.lang.String encode(double epoch)
```

Converts an EPOCH value into a readable date/time string.

```
Format:      dd-mmm-yyyy hh:mm:ss.ccc
Examples:    01-Apr-1990 03:05:02.000
             10-Oct-1993 23:45:49.999
```

This format is the same as that expected by parse.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode1

```
public static java.lang.String encode1(double epoch)
```

Converts an EPOCH value into a readable date/time string.

```
Format:      yyyyymmdd.tttttttt  
Examples:   19900401.3658893  
            19611231.0000000
```

This format is the same as that expected by parse1.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode2

```
public static java.lang.String encode2(double epoch)
```

Converts an EPOCH value into a readable date/time string.

```
Format:      yyyyymmddhhmmss  
Examples:   19900401235959  
            19611231000000
```

This format is the same as that expected by parse2.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode3

```
public static java.lang.String encode3(double epoch)
```

Converts an EPOCH value into a readable date/time string.

Format: yyyy-mm-ddThh:mm:ss.cccZ

Examples: 1990-04-01T03:05:02.000Z

 1993-10-10T23:45:49.999Z

This format is the same as that expected by `parse3`.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encodex

```
public static java.lang.String encodex(double epoch,  
                                        java.lang.String formatString)
```

Converts an EPOCH value into a readable date/time string using the specified format. See the C Reference Manual section 8.7 for details

Parameters:

epoch - the epoch value

formatString - a string representing the desired format of the epoch

Returns:

A string representation of the epoch according to formatString

compute

```
public static double compute(long year,
                               long month,
                               long day,
                               long hour,
                               long minute,
                               long second,
                               long msec)
    throws CDFException
```

Computes an EPOCH value based on its component parts.

Parameters:

year - the year
month - the month
day - the day
hour - the hour
minute - the minute
second - the second
msec - the millisecond

Returns:

the epoch value

Throws:

[CDFException](#) - an ILLEGAL_EPOCH_FIELD if an illegal component value is detected.

breakdown

```
public static long[] breakdown(double epoch)
```

Breaks an EPOCH value down into its component parts.

Parameters:

epoch - the epoch value to break down

Returns:

an array containing the epoch parts:

Index	Part
0	year
1	month
2	day
3	hour
4	minute
5	second
6	msec

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gsfc.nssdc.cdf.util

Class Epoch16

java.lang.Object

└─gsfc.nssdc.cdf.util.Epoch16

All Implemented Interfaces:[CDFConstants](#)

```
public class Epoch16
extends java.lang.Object
implements CDFConstants
```

Example:

```
// Get the time, down to picoseconds, for Aug 5, 1990 at 5:0:0.0.0.0
double[] epoch16 = new double[2];
double ep = Epoch16.compute(1990, 8, 5, 5, 0, 0, 0, 0, 0, 0,
epoch16);
//Get the year, month, day, hour, minutes, seconds, milliseconds,
//    microseconds, nanoseconds and picoseconds for epoch16
long times[] = Epoch16.breakdown(epoch16);
for (int i=0;i<times.length;i++)
    System.out.print(times[i]+" ");
System.out.println();
// Printout the epoch in various formats
System.out.println(Epoch16.encode(epoch16));
System.out.println(Epoch16.encode1(epoch16));
System.out.println(Epoch16.encode2(epoch16));
System.out.println(Epoch16.encode3(epoch16));
// Print out the date using format
String format = " , at :";
System.out.println(Epoch16.encodex(epoch16,format));
```

Field Summary

Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),

CDF_UINT1, CDF_UINT2, CDF_UINT4, CDF_VAR_NAME_LEN, CDF_VERSION,
CDF_WARN, CDF_WRITE_ERROR, CDF_zMODE, CDFwithSTATS, CLOSE,
COLUMN_MAJOR, COMPRESS_CACHESIZE, COMPRESSION_ERROR, CONFIRM,
CORRUPTED_V2_CDF, CORRUPTED_V3_CDF, CREATE, CURgENTRY_EXISTENCE,
CURrENTRY_EXISTENCE, CURzENTRY_EXISTENCE, DATATYPE_MISMATCH,
DATATYPE_SIZE, DECOMPRESSION_ERROR, DECSTATION_DECODING,
DECSTATION_ENCODING, DEFAULT_BYTE_PADVALUE, DEFAULT_CHAR_PADVALUE,
DEFAULT_DOUBLE_PADVALUE, DEFAULT_EPOCH_PADVALUE,
DEFAULT_FLOAT_PADVALUE, DEFAULT_INT1_PADVALUE,
DEFAULT_INT2_PADVALUE, DEFAULT_INT4_PADVALUE,
DEFAULT_REAL4_PADVALUE, DEFAULT_REAL8_PADVALUE,
DEFAULT_UCHAR_PADVALUE, DEFAULT_UINT1_PADVALUE,
DEFAULT_UINT2_PADVALUE, DEFAULT_UINT4_PADVALUE, DELETE,
DID_NOT_COMPRESS, EMPTY_COMPRESSED_CDF, END_OF_VAR,
EPOCH_STRING_LEN, EPOCH_STRING_LEN_EXTEND, EPOCH1_STRING_LEN,
EPOCH1_STRING_LEN_EXTEND, EPOCH2_STRING_LEN,
EPOCH2_STRING_LEN_EXTEND, EPOCH3_STRING_LEN,
EPOCH3_STRING_LEN_EXTEND, EPOCHx_FORMAT_MAX, EPOCHx_STRING_MAX,
FORCED_PARAMETER, gENTRY, gENTRY_DATA, gENTRY_DATASPEC,
gENTRY_DATATYPE, gENTRY_EXISTENCE, gENTRY_NUMELEMS, GET,
GLOBAL_SCOPE, GZIP_COMPRESSION, HOST_DECODING, HOST_ENCODING,
HP_DECODING, HP_ENCODING, HUFF_COMPRESSION, IBM_PC_OVERFLOW,
IBMPC_DECODING, IBMPC_ENCODING, IBMRS_DECODING, IBMRS_ENCODING,
ILLEGAL_EPOCH_FIELD, ILLEGAL_EPOCH_VALUE, ILLEGAL_FOR_SCOPE,
ILLEGAL_IN_zMODE, ILLEGAL_ON_V1_CDF, LIB_COPYRIGHT, LIB_INCREMENT,
LIB_RELEASE, LIB_subINCREMENT, LIB_VERSION, MAC_DECODING,
MAC_ENCODING, MULTI_FILE, MULTI_FILE_FORMAT, NA_FOR_VARIABLE,
NEGATIVE_FP_ZERO, NEGtoPOSfp0off, NEGtoPOSfp0on, NETWORK_DECODING,
NETWORK_ENCODING, NeXT_DECODING, NeXT_ENCODING, NO_ATTR_SELECTED,
NO_CDF_SELECTED, NO_COMPRESSION, NO_DELETE_ACCESS,
NO_ENTRY_SELECTED, NO_MORE_ACCESS, NO_PADVALUE_SPECIFIED,
NO_SPARSEARRAYS, NO_SPARSERECORDS, NO_STATUS_SELECTED, NO_SUCH_ATTR,
NO_SUCH_CDF, NO_SUCH_ENTRY, NO_SUCH_RECORD, NO_SUCH_VAR,
NO_VAR_SELECTED, NO_VARS_IN_CDF, NO_WRITE_ACCESS, NOT_A_CDF,
NOT_A_CDF_OR_NOT_SUPPORTED, NOVARY, NULL, OPEN,
OPTIMAL_ENCODING_TREES, PAD_SPARSERECORDS,
PRECEEDING_RECORDS_ALLOCATED, PREV_SPARSERECORDS, PUT,
READ_ONLY_DISTRIBUTION, READ_ONLY_MODE, READONLYoff, READONLYon,

[rENTRY](#), [rENTRY DATA](#), [rENTRY DATASPEC](#), [rENTRY DATATYPE](#),
[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
[RLE OF ZEROS](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),
[rVAR nINDEXLEVELS](#), [rVAR nINDEXRECORDS](#), [rVAR NUMallocRECS](#),
[rVAR NUMBER](#), [rVAR NUMELEMS](#), [rVAR NUMRECS](#), [rVAR PADVALUE](#),
[rVAR RECORDS](#), [rVAR RECVARY](#), [rVAR RESERVEPERCENT](#), [rVAR SEQDATA](#),
[rVAR SEQPOS](#), [rVAR SPARSEARRAYS](#), [rVAR SPARSERECORDS](#),
[rVARs CACHESIZE](#), [rVARs DIMCOUNTS](#), [rVARs DIMINDICES](#),
[rVARs DIMINTERVALS](#), [rVARs DIMSIZES](#), [rVARs MAXREC](#), [rVARs NUMDIMS](#),
[rVARs RECCOUNT](#), [rVARs RECDATA](#), [rVARs RECINTERVAL](#),
[rVARs RECNUMBER](#), [SAVE](#), [SCRATCH CREATE ERROR](#), [SCRATCH DELETE ERROR](#),
[SCRATCH READ ERROR](#), [SCRATCH WRITE ERROR](#), [SELECT](#), [SGi DECODING](#),
[SGi ENCODING](#), [SINGLE FILE](#), [SINGLE FILE FORMAT](#),
[SOME ALREADY ALLOCATED](#), [STAGE CACHESIZE](#), [STATUS TEXT](#),
[SUN DECODING](#), [SUN ENCODING](#), [TOO MANY PARMS](#), [TOO MANY VARS](#),
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),
[VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#),
[VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#),
[VAR READ ERROR](#), [VAR WRITE ERROR](#), [VARIABLE SCOPE](#), [VARY](#), [VAX DECODING](#),
[VAX ENCODING](#), [VIRTUAL RECORD DATA](#), [zENTRY](#), [zENTRY DATA](#),
[zENTRY DATASPEC](#), [zENTRY DATATYPE](#), [zENTRY EXISTENCE](#), [zENTRY NAME](#),
[zENTRY NUMELEMS](#), [zMODEoff](#), [zMODEon1](#), [zMODEon2](#), [zVAR](#),
[zVAR ALLOCATEBLOCK](#), [zVAR ALLOCATEDFROM](#), [zVAR ALLOCATEDTO](#),
[zVAR ALLOCATERECS](#), [zVAR BLOCKINGFACTOR](#), [zVAR CACHESIZE](#),
[zVAR COMPRESSION](#), [zVAR DATA](#), [zVAR DATASPEC](#), [zVAR DATATYPE](#),
[zVAR DIMCOUNTS](#), [zVAR DIMINDICES](#), [zVAR DIMINTERVALS](#),
[zVAR DIMSIZES](#), [zVAR DIMVARYS](#), [zVAR EXISTENCE](#), [zVAR HYPERDATA](#),
[zVAR INITIALRECS](#), [zVAR MAXallocREC](#), [zVAR MAXREC](#), [zVAR NAME](#),
[zVAR nINDEXENTRIES](#), [zVAR nINDEXLEVELS](#), [zVAR nINDEXRECORDS](#),
[zVAR NUMallocRECS](#), [zVAR NUMBER](#), [zVAR NUMDIMS](#), [zVAR NUMELEMS](#),
[zVAR NUMRECS](#), [zVAR PADVALUE](#), [zVAR RECCOUNT](#), [zVAR RECINTERVAL](#),
[zVAR RECNUMBER](#), [zVAR RECORDS](#), [zVAR RECVARY](#), [zVAR RESERVEPERCENT](#),
[zVAR SEQDATA](#), [zVAR SEQPOS](#), [zVAR SPARSEARRAYS](#),

[zVAR_SPARSERECORDS](#) , [zVARs_CACHESIZE](#) , [zVARs_MAXREC](#) ,
[zVARs_RECDATA](#) , [zVARs_RECNUMBER](#)

Constructor Summary

[Epoch16](#) ()

Method Summary

static long[]	breakdown (java.lang.Object epoch) Breaks an EPOCH16 value down into its component parts.
static double	compute (long year, long month, long day, long hour, long minute, long second, long msec, long usec, long nsec, long psec, java.lang.Object epoch) Computes an EPOCH16 value based on its component parts.
static java.lang.String	encode (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	encode1 (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	encode2 (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	encode3 (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	encodex (java.lang.Object epoch, java.lang.String formatString) Converts an EPOCH16 value into a readable date/time string using the specified format.
static java.lang.Object	parse (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	parse1 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.

static java.lang.Object	parse2 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	parse3 (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

Epoch16

```
public Epoch16()
```

Method Detail

parse

```
public static java.lang.Object parse(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH16 value. The format must be exactly as shown below. Month abbreviations may be in any case and are always the first three letters of the month.

```
Format:          dd-mmm-yyyy hh:mm:ss.ccc.mmm.nnn.ppp
Examples:       1-Apr-1990 03:05:02.000.000.000.000
                10-Oct-1993 23:45:49.999.999.999.999
```

The expected format is the same as that produced by encode.

Parameters:

inString - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

parse1

```
public static java.lang.Object parse1(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH16 value. The format must be exactly as shown below. Note that if there are less than 15 digits after the decimal point, zeros (0's) are assumed for the missing digits.

```
Format:          yyyyymmdd.tttttttttttttttt
Examples:        19950508.0000000000000000
                  19671231.58          (==
19671213.5800000000000000)
```

The expected format is the same as that produced by encode1.

Parameters:

inString - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

parse2

```
public static java.lang.Object parse2(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH16 value. The format must be exactly as shown below.

Format : yyyyymmddhhmmss
Examples : 19950508000000
 19671231235959

The expected format is the same as that produced by encode2.

Parameters:

inString - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

parse3

```
public static java.lang.Object parse3(java.lang.String inString)  
                                  throws CDFException
```

This function parses an input date/time string and returns an EPOCH16 value. The format must be exactly as shown below.

Format : yyyy-mm-ddThh:mm:ss.ccc.mmm.nnn.pppZ
Examples : 1990-04-01T03:05:02.000.000.000.000Z
 1993-10-10T23:45:49.999.999.999.999Z

The expected format is the same as that produced by encode3.

Parameters:

inString - the epoch in string representation

Returns:

the value of the epoch represented by inString

Throws:

[CDFException](#) - if a bad epoch value is passed in inString

encode

```
public static java.lang.String encode(java.lang.Object epoch)
```

Converts an EPOCH16 value into a readable date/time string.

```
Format:          dd-mmm-yyyy hh:mm:ss.ccc.mmm.nnn.ppp
Examples:       01-Apr-1990 03:05:02.000.000.000.000
                10-Oct-1993 23:45:49.999.999.999.999
```

This format is the same as that expected by parse.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode1

```
public static java.lang.String encode1(java.lang.Object epoch)
```

Converts an EPOCH16 value into a readable date/time string.

```
Format:          yyyyymmdd.tttttttttttttttttt
Examples:       19900401.365889312341234
                19611231.0000000000000000
```

This format is the same as that expected by parse1.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode2

```
public static java.lang.String encode2(java.lang.Object epoch)
```

Converts an EPOCH16 value into a readable date/time string.

```
Format :          yyyyymmddhhmmss  
Examples :        19900401235959  
                  19611231000000
```

This format is the same as that expected by parse2.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encode3

```
public static java.lang.String encode3(java.lang.Object epoch)
```

Converts an EPOCH16 value into a readable date/time string.

```
Format :          yyyy-mm-ddThh:mm:ss.ccc.mmm.nnn.pppZ  
Examples :        1990-04-01T03:05:02.000.000.000.000Z  
                  1993-10-10T23:45:49.999.999.999.999Z
```

This format is the same as that expected by parse3.

Parameters:

epoch - the epoch value

Returns:

A string representation of the epoch

encodex

```
public static java.lang.String encodex(java.lang.Object epoch,
```

```
java.lang.String formatString)
```

Converts an EPOCH16 value into a readable date/time string using the specified format. See the C Reference Manual section 8.7 for details

Parameters:

epoch - the epoch value

formatString - a string representing the desired format of the epoch

Returns:

A string representation of the epoch according to formatString

compute

```
public static double compute(long year,  
                               long month,  
                               long day,  
                               long hour,  
                               long minute,  
                               long second,  
                               long msec,  
                               long usec,  
                               long nsec,  
                               long psec,  
                               java.lang.Object epoch)  
    throws CDFException
```

Computes an EPOCH16 value based on its component parts.

Parameters:

year - the year

month - the month

day - the day

hour - the hour

minute - the minute

second - the second

msec - the milliseconds

usec - the microseconds

nsec - the nanoseconds

psec - the picoseconds

Returns:

the epoch value

Throws:

[CDFException](#) - an ILLEGAL_EPOCH_FIELD if an illegal component value is detected.

breakdown

```
public static long[] breakdown(java.lang.Object epoch)
```

Breaks an EPOCH16 value down into its component parts.

Parameters:

epoch - the epoch value to break down

Returns:

an array containing the epoch parts:

Index	Part
0	year
1	month
2	day
3	hour
4	minute
5	second
6	msec
6	usec
6	nsec
6	psec

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gsfc.nssdc.cdf.util

Class EpochNative

java.lang.Object

└─ **gsfc.nssdc.cdf.util.EpochNative**public class **EpochNative**

extends java.lang.Object

The Epoch class is a Java wrapper to the CDF epoch handling routines. See Chapter 8 of the CDF C Reference Manual Version 2.6 for details **Example:**

```
// Get the milliseconds to Aug 5, 1990 at 5:00
double ep = Epoch.compute(1990, 8, 5, 5, 0, 0, 0);
//Get the year, month, day, hour, minutes, seconds, milliseconds for
ep
long times[] = Epoch.breakdown(ep);
for (int i=0;i
```

Constructor Summary

[EpochNative](#)()

Method Summary

static long[]	breakdown (double epoch) Mirrors EPOCHbreakdown from the CDF library.
static double	compute (long year, long month, long day, long hour, long minute, long second, long msec) Mirrors computeEPOCH from the CDF library.
static java.lang.String	encode (double epoch) Mirrors encodeEPOCH from the CDF library.
static java.lang.String	encode1 (double epoch) Mirrors encodeEPOCH1 from the CDF library.
static java.lang.String	encode2 (double epoch) Mirrors encodeEPOCH2 from the CDF library.
static java.lang.String	encode3 (double epoch) Mirrors encodeEPOCH3 from the CDF library.
static java.lang.String	encodex (double epoch, java.lang.String format) Mirrors encodeEPOCHx from the CDF library.
static double	parse (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.
static double	parse1 (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.

static double	parse2 (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.
static double	parse3 (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructor Detail

EpochNative

```
public EpochNative()
```

Method Detail

compute

```
public static double compute(long year,  
                               long month,  
                               long day,  
                               long hour,  
                               long minute,  
                               long second,  
                               long msec)
```

Mirrors computeEPOCH from the CDF library. See Section 8.1 of the
CDF C Reference Manual Version 2.6 for details

breakdown

```
public static long[] breakdown(double epoch)
```

Mirrors EPOCHbreakdown from the CDF library. See Section 8.2 of the CDF C Reference Manual Version 2.6 for details

encode

```
public static java.lang.String encode(double epoch)
```

Mirrors encodeEPOCH from the CDF library. See Section 8.3 of the CDF C Reference Manual Version 2.6 for details

encode1

```
public static java.lang.String encode1(double epoch)
```

Mirrors encodeEPOCH1 from the CDF library. See Section 8.4 of the CDF C Reference Manual Version 2.6 for details

encode2

```
public static java.lang.String encode2(double epoch)
```

Mirrors encodeEPOCH2 from the CDF library. See Section 8.5 of the CDF C Reference Manual Version 2.6 for details

encode3

```
public static java.lang.String encode3(double epoch)
```

Mirrors encodeEPOCH3 from the CDF library. See Section 8.6 of the

encodex

```
public static java.lang.String encodex(double epoch,  
                                         java.lang.String format)
```

Mirrors encodeEPOCHx from the CDF library. See Section 8.7 of the CDF C Reference Manual Version 2.6 for details

parse

```
public static double parse(java.lang.String sEpoch)
```

Mirrors parseEPOCH from CDF library. See Section 8.8 of the

parse1

```
public static double parse1(java.lang.String sEpoch)
```

Mirrors parseEPOCH from CDF library. See Section 8.9 of the CDF C Reference Manual Version 2.6 for details

parse2

```
public static double parse2(java.lang.String sEpoch)
```

Mirrors parseEPOCH from CDF library. See Section 8.10 of the CDF C Reference Manual Version 2.6 for details

parse3

```
public static double parse3(java.lang.String sEpoch)
```

Mirrors parseEPOCH from CDF library. See Section 8.11 of the CDF C Reference Manual Version 2.6 for details

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gsfc.nssdc.cdf

Class Variable

java.lang.Object

└─ **gsfc.nssdc.cdf.Variable****All Implemented Interfaces:**[CDFConstants](#), [CDFObject](#)

public class **Variable**

extends java.lang.Object

implements [CDFObject](#), [CDFConstants](#)The **Variable** class defines a CDF variable.**Notes:** Since the CDF JavaAPI always uses `zMODE = 2`, all variables are by default, `zVariables`.**See Also:**[Attribute](#), [Entry](#)

Field Summary

Fields inherited from interface [gsfc.nssdc.cdf.CDFConstants](#)

[AHUFF_COMPRESSION](#), [ALPHAOSF1_DECODING](#), [ALPHAOSF1_ENCODING](#),
[ALPHAVMSd_DECODING](#), [ALPHAVMSd_ENCODING](#), [ALPHAVMSg_DECODING](#),
[ALPHAVMSg_ENCODING](#), [ALPHAVMSi_DECODING](#), [ALPHAVMSi_ENCODING](#), [ATTR](#),
[ATTR_EXISTENCE](#), [ATTR_EXISTS](#), [ATTR_MAXgENTRY](#), [ATTR_MAXrENTRY](#),
[ATTR_MAXzENTRY](#), [ATTR_NAME](#), [ATTR_NAME_TRUNC](#), [ATTR_NUMBER](#),
[ATTR_NUMgENTRIES](#), [ATTR_NUMrENTRIES](#), [ATTR_NUMzENTRIES](#),
[ATTR_SCOPE](#), [BAD_ALLOCATE_RECS](#), [BAD_ARGUMENT](#), [BAD_ATTR_NAME](#),
[BAD_ATTR_NUM](#), [BAD_BLOCKING_FACTOR](#), [BAD_CACHE_SIZE](#),
[BAD_CDF_EXTENSION](#), [BAD_CDF_ID](#), [BAD_CDF_NAME](#), [BAD_CDFSTATUS](#),
[BAD_COMPRESSION_PARM](#), [BAD_DATA_TYPE](#), [BAD_DECODING](#), [BAD_DIM_COUNT](#),
[BAD_DIM_INDEX](#), [BAD_DIM_INTERVAL](#), [BAD_DIM_SIZE](#), [BAD_ENCODING](#),
[BAD_ENTRY_NUM](#), [BAD_FNC_OR_ITEM](#), [BAD_FORMAT](#), [BAD_INITIAL_RECS](#),
[BAD_MAJORITY](#), [BAD_MALLOC](#), [BAD_NEGtoPOSfp0_MODE](#), [BAD_NUM_DIMS](#),
[BAD_NUM_ELEMS](#), [BAD_NUM_VARS](#), [BAD_READONLY_MODE](#), [BAD_REC_COUNT](#),
[BAD_REC_INTERVAL](#), [BAD_REC_NUM](#), [BAD_SCOPE](#), [BAD_SCRATCH_DIR](#),
[BAD_SPARSEARRAYS_PARM](#), [BAD_VAR_NAME](#), [BAD_VAR_NUM](#), [BAD_zMODE](#),
[CANNOT_ALLOCATE_RECORDS](#), [CANNOT_CHANGE](#), [CANNOT_COMPRESS](#),
[CANNOT_COPY](#), [CANNOT_SPARSEARRAYS](#), [CANNOT_SPARSERECORDS](#), [CDF](#),
[CDF_ACCESS](#), [CDF_ATTR_NAME_LEN](#), [CDF_BYTE](#), [CDF_CACHESIZE](#), [CDF_CHAR](#),
[CDF_CLOSE_ERROR](#), [CDF_COMPRESSION](#), [CDF_COPYRIGHT](#),
[CDF_COPYRIGHT_LEN](#), [CDF_CREATE_ERROR](#), [CDF_DECODING](#),
[CDF_DELETE_ERROR](#), [CDF_DOUBLE](#), [CDF_ENCODING](#), [CDF_EPOCH](#), [CDF_EPOCH16](#),
[CDF_EXISTS](#), [CDF_FLOAT](#), [CDF_FORMAT](#), [CDF_INCREMENT](#), [CDF_INFO](#),
[CDF_INT1](#), [CDF_INT2](#), [CDF_INT4](#), [CDF_INTERNAL_ERROR](#), [CDF_MAJORITY](#),
[CDF_MAX_DIMS](#), [CDF_MAX_PARMS](#), [CDF_MIN_DIMS](#), [CDF_NAME](#),
[CDF_NAME_TRUNC](#), [CDF_NEGtoPOSfp0_MODE](#), [CDF_NUMATTRS](#),
[CDF_NUMgATTRS](#), [CDF_NUMrVARS](#), [CDF_NUMvATTRS](#), [CDF_NUMzVARS](#),
[CDF_OK](#), [CDF_OPEN_ERROR](#), [CDF_PATHNAME_LEN](#), [CDF_READ_ERROR](#),
[CDF_READONLY_MODE](#), [CDF_REAL4](#), [CDF_REAL8](#), [CDF_RELEASE](#),
[CDF_SCRATCHDIR](#), [CDF_STATUS](#), [CDF_STATUSTEXT_LEN](#), [CDF_UCHAR](#),
[CDF_UINT1](#), [CDF_UINT2](#), [CDF_UINT4](#), [CDF_VAR_NAME_LEN](#), [CDF_VERSION](#),
[CDF_WARN](#), [CDF_WRITE_ERROR](#), [CDF_zMODE](#), [CDFwithSTATS](#), [CLOSE](#),
[COLUMN_MAJOR](#), [COMPRESS_CACHESIZE](#), [COMPRESSION_ERROR](#), [CONFIRM](#),
[CORRUPTED_V2_CDF](#), [CORRUPTED_V3_CDF](#), [CREATE](#), [CURgENTRY_EXISTENCE](#),
[CURrENTRY_EXISTENCE](#), [CURzENTRY_EXISTENCE](#), [DATATYPE_MISMATCH](#),
[DATATYPE_SIZE](#), [DECOMPRESSION_ERROR](#), [DECSTATION_DECODING](#),
[DECSTATION_ENCODING](#), [DEFAULT_BYTE_PADVALUE](#), [DEFAULT_CHAR_PADVALUE](#),
[DEFAULT_DOUBLE_PADVALUE](#), [DEFAULT_EPOCH_PADVALUE](#),

[DEFAULT FLOAT PADVALUE](#), [DEFAULT INT1 PADVALUE](#),
[DEFAULT INT2 PADVALUE](#), [DEFAULT INT4 PADVALUE](#),
[DEFAULT REAL4 PADVALUE](#), [DEFAULT REAL8 PADVALUE](#),
[DEFAULT UCHAR PADVALUE](#), [DEFAULT UINT1 PADVALUE](#),
[DEFAULT UINT2 PADVALUE](#), [DEFAULT UINT4 PADVALUE](#), [DELETE](#),
[DID NOT COMPRESS](#), [EMPTY COMPRESSED CDF](#), [END OF VAR](#),
[EPOCH STRING LEN](#), [EPOCH STRING LEN EXTEND](#), [EPOCH1 STRING LEN](#),
[EPOCH1 STRING LEN EXTEND](#), [EPOCH2 STRING LEN](#),
[EPOCH2 STRING LEN EXTEND](#), [EPOCH3 STRING LEN](#),
[EPOCH3 STRING LEN EXTEND](#), [EPOCHx FORMAT MAX](#), [EPOCHx STRING MAX](#),
[FORCED PARAMETER](#), [gENTRY](#), [gENTRY DATA](#), [gENTRY DATASPEC](#),
[gENTRY DATATYPE](#), [gENTRY EXISTENCE](#), [gENTRY NUMELEMS](#), [GET](#),
[GLOBAL SCOPE](#), [GZIP COMPRESSION](#), [HOST DECODING](#), [HOST ENCODING](#),
[HP DECODING](#), [HP ENCODING](#), [HUFF COMPRESSION](#), [IBM PC OVERFLOW](#),
[IBMPC DECODING](#), [IBMPC ENCODING](#), [IBMRS DECODING](#), [IBMRS ENCODING](#),
[ILLEGAL EPOCH FIELD](#), [ILLEGAL EPOCH VALUE](#), [ILLEGAL FOR SCOPE](#),
[ILLEGAL IN zMODE](#), [ILLEGAL ON V1 CDF](#), [LIB COPYRIGHT](#), [LIB INCREMENT](#),
[LIB RELEASE](#), [LIB subINCREMENT](#), [LIB VERSION](#), [MAC DECODING](#),
[MAC ENCODING](#), [MULTI FILE](#), [MULTI FILE FORMAT](#), [NA FOR VARIABLE](#),
[NEGATIVE FP ZERO](#), [NEGtoPOSfp0off](#), [NEGtoPOSfp0on](#), [NETWORK DECODING](#),
[NETWORK ENCODING](#), [NeXT DECODING](#), [NeXT ENCODING](#), [NO ATTR SELECTED](#),
[NO CDF SELECTED](#), [NO COMPRESSION](#), [NO DELETE ACCESS](#),
[NO ENTRY SELECTED](#), [NO MORE ACCESS](#), [NO PADVALUE SPECIFIED](#),
[NO SPARSEARRAYS](#), [NO SPARSERECORDS](#), [NO STATUS SELECTED](#), [NO SUCH ATTR](#),
[NO SUCH CDF](#), [NO SUCH ENTRY](#), [NO SUCH RECORD](#), [NO SUCH VAR](#),
[NO VAR SELECTED](#), [NO VARS IN CDF](#), [NO WRITE ACCESS](#), [NOT A CDF](#),
[NOT A CDF OR NOT SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#),
[OPTIMAL ENCODING TREES](#), [PAD SPARSERECORDS](#),
[PRECEEDING RECORDS ALLOCATED](#), [PREV SPARSERECORDS](#), [PUT](#),
[READ ONLY DISTRIBUTION](#), [READ ONLY MODE](#), [READONLYoff](#), [READONLYon](#),
[rENTRY](#), [rENTRY DATA](#), [rENTRY DATASPEC](#), [rENTRY DATATYPE](#),
[rENTRY EXISTENCE](#), [rENTRY NAME](#), [rENTRY NUMELEMS](#), [RLE COMPRESSION](#),
[RLE OF ZEROs](#), [ROW MAJOR](#), [rVAR](#), [rVAR ALLOCATEBLOCK](#),
[rVAR ALLOCATEDFROM](#), [rVAR ALLOCATEDTO](#), [rVAR ALLOCATERECS](#),
[rVAR BLOCKINGFACTOR](#), [rVAR CACHESIZE](#), [rVAR COMPRESSION](#),
[rVAR DATA](#), [rVAR DATASPEC](#), [rVAR DATATYPE](#), [rVAR DIMVARYS](#),
[rVAR EXISTENCE](#), [rVAR HYPERDATA](#), [rVAR INITIALRECS](#),
[rVAR MAXallocREC](#), [rVAR MAXREC](#), [rVAR NAME](#), [rVAR nINDEXENTRIES](#),

[rVAR nINDEXLEVELS](#) , [rVAR nINDEXRECORDS](#) , [rVAR NUMallocRECS](#) ,
[rVAR NUMBER](#) , [rVAR NUMELEMS](#) , [rVAR NUMRECS](#) , [rVAR PADVALUE](#) ,
[rVAR RECORDS](#) , [rVAR RECVARY](#) , [rVAR RESERVEPERCENT](#) , [rVAR SEQDATA](#) ,
[rVAR SEQPOS](#) , [rVAR SPARSEARRAYS](#) , [rVAR SPARSERECORDS](#) ,
[rVARs CACHESIZE](#) , [rVARs DIMCOUNTS](#) , [rVARs DIMINDICES](#) ,
[rVARs DIMINTERVALS](#) , [rVARs DIMSIZES](#) , [rVARs MAXREC](#) , [rVARs NUMDIMS](#) ,
[rVARs RECCOUNT](#) , [rVARs RECDATA](#) , [rVARs RECINTERVAL](#) ,
[rVARs RECNUMBER](#) , [SAVE](#) , [SCRATCH CREATE ERROR](#) , [SCRATCH DELETE ERROR](#) ,
[SCRATCH READ ERROR](#) , [SCRATCH WRITE ERROR](#) , [SELECT](#) , [SGi DECODING](#) ,
[SGi ENCODING](#) , [SINGLE FILE](#) , [SINGLE FILE FORMAT](#) ,
[SOME ALREADY ALLOCATED](#) , [STAGE CACHESIZE](#) , [STATUS TEXT](#) ,
[SUN DECODING](#) , [SUN ENCODING](#) , [TOO MANY PARMS](#) , [TOO MANY VARS](#) ,
[UNKNOWN COMPRESSION](#) , [UNKNOWN SPARSENESS](#) , [UNSUPPORTED OPERATION](#) ,
[VAR ALREADY CLOSED](#) , [VAR CLOSE ERROR](#) , [VAR CREATE ERROR](#) ,
[VAR DELETE ERROR](#) , [VAR EXISTS](#) , [VAR NAME TRUNC](#) , [VAR OPEN ERROR](#) ,
[VAR READ ERROR](#) , [VAR WRITE ERROR](#) , [VARIABLE SCOPE](#) , [VARY](#) , [VAX DECODING](#) ,
[VAX ENCODING](#) , [VIRTUAL RECORD DATA](#) , [zENTRY](#) , [zENTRY DATA](#) ,
[zENTRY DATASPEC](#) , [zENTRY DATATYPE](#) , [zENTRY EXISTENCE](#) , [zENTRY NAME](#) ,
[zENTRY NUMELEMS](#) , [zMODEoff](#) , [zMODEon1](#) , [zMODEon2](#) , [zVAR](#) ,
[zVAR ALLOCATEBLOCK](#) , [zVAR ALLOCATEDFROM](#) , [zVAR ALLOCATEDTO](#) ,
[zVAR ALLOCATERECS](#) , [zVAR BLOCKINGFACTOR](#) , [zVAR CACHESIZE](#) ,
[zVAR COMPRESSION](#) , [zVAR DATA](#) , [zVAR DATASPEC](#) , [zVAR DATATYPE](#) ,
[zVAR DIMCOUNTS](#) , [zVAR DIMINDICES](#) , [zVAR DIMINTERVALS](#) ,
[zVAR DIMSIZES](#) , [zVAR DIMVARYS](#) , [zVAR EXISTENCE](#) , [zVAR HYPERDATA](#) ,
[zVAR INITIALRECS](#) , [zVAR MAXallocREC](#) , [zVAR MAXREC](#) , [zVAR NAME](#) ,
[zVAR nINDEXENTRIES](#) , [zVAR nINDEXLEVELS](#) , [zVAR nINDEXRECORDS](#) ,
[zVAR NUMallocRECS](#) , [zVAR NUMBER](#) , [zVAR NUMDIMS](#) , [zVAR NUMELEMS](#) ,
[zVAR NUMRECS](#) , [zVAR PADVALUE](#) , [zVAR RECCOUNT](#) , [zVAR RECINTERVAL](#) ,
[zVAR RECNUMBER](#) , [zVAR RECORDS](#) , [zVAR RECVARY](#) , [zVAR RESERVEPERCENT](#) ,
[zVAR SEQDATA](#) , [zVAR SEQPOS](#) , [zVAR SPARSEARRAYS](#) ,
[zVAR SPARSERECORDS](#) , [zVARs CACHESIZE](#) , [zVARs MAXREC](#) ,
[zVARs RECDATA](#) , [zVARs RECNUMBER](#)

Method Summary

void	allocateBlock (long firstRec, long lastRec) Allocates a range of records for this variable.
------	--

void	allocateRecords (long num0toRecords) Allocates a number of records, starting from record number 0.
boolean	checkPadValueExistence () Checks if the pad value has been defined for this variable.
void	concatenateDataRecords (Variable destVar) Concatenates this variable's data records to the destination variable.
long	confirmCacheSize () Gets the number of 512-byte cache buffers defined for this variable.
long	confirmPadValue () Checks the existence of an explicitly specified pad value for the current z variable.
long	confirmReservePercent () Gets the reserve percentage set for this variable.
Variable	copy (CDF destCDF, java.lang.String varName) Copies this variable into a new variable and puts it into the designated CDF file.
Variable	copy (java.lang.String varName) Copies this variable to a new variable.
void	copyDataRecords (Variable destVar) Copies this variable's data to the destination variable.
static Variable	create (CDF myCDF, java.lang.String varName, long dataType, long numElements, long numDims, long [] dimSizes, long recVary, long[] dimVarys) Creates a variable.
void	delete () Deletes this variable.
void	deleteRecords (long firstRec, long lastRec) Deletes a range of records from this variable.
Variable	duplicate (CDF destCDF, java.lang.String varName) Duplicates this variable and put it into the designated CDF file.
Variable	duplicate (java.lang.String varName) Duplicates this variable to a new variable.

long	getAllocatedFrom (long recNum) Inquires the next allocated record at or after a given record for this variable.
long	getAllocatedTo (long firstRec) Inquires the last allocated record (before the next unallocated record) at or after a given record for this variable.
java.util. Vector	getAttributes () Returns the variable attributes that are associated with this variable.
long	getBlockingFactor () Gets the blocking factor for this variable.
java.lang. String	getCompression () Gets the string representation of the compression type and parameters set for this variable.
long[]	getCompressionParms () Sets the compression parameters of this variable.
long	getCompressionPct () Gets the compression percentage rate of this variable.
long	getCompressionType () Gets the compression type of this variable.
long	getDataType () Gets the CDF data type of this variable.
long[]	getDimSizes () Gets the dimensions size of this variable.
long[]	getDimVariances () Gets the dimension variances for this variable.
java.lang. Object	getEntryData (java.lang.String attrName) Gets the attribute entry data for this variable.
java.lang. Object	getHyperData (long recNum, long recCount, long recInterval, long[] dimIndices, long [] dimCounts, long[] dimIntervals) Reads one or more values from the current z variable.
CDFData	getHyperDataObject (long recNum, long recCount, long recInterval, long[] dimIndices, long [] dimCounts, long[] dimIntervals) Reads one or more values from the current z variable.

long	getID () Gets the ID of this variable.
long	getMaxAllocatedRecord () Gets the maximum allocated record number for this variable.
long	getMaxWrittenRecord () Gets the last written record number, beginning with 0.
CDF	getMyCDF () Gets the CDF object to which this variable belongs.
java.lang. String	getName () Gets the name of this variable.
long	getNumAllocatedRecords () Gets the number of records allocated for this variable.
long	getNumDims () Gets the number of dimensions for this variable.
long	getNumElements () Gets the number of elements for this variable.
long	getNumWrittenRecords () Gets the number of records physically written (not allocated) for this variable.
java.lang. Object	getPadValue () Gets the pad value set for this variable.
java.lang. Object	getRecord (long recNum) Gets a single record from this variable.
CDFData	getRecordObject (long recNum) Get a single record of data from this variable.
CDFData	getRecordsObject (long recNum, long numRecs) Get a number of records of data from this variable.
boolean	getRecVariance () Gets the value of record variance.
java.lang. Object	getScalarData () Gets the scalar data from a non-record varying 0-dimensional variable.
java.lang. Object	getScalarData (long recNum) Get the scalar data from a record varying 0-dimensional variable.

CDFData	getScalarDataObject () Get the scalar data from a non-record varying 0-dimensional variable.
CDFData	getScalarDataObject (long recNum) Get the scalar data from this record varying 0-dimensional variable.
java.lang. Object	getSingleData (long recNum, long[] indices) Gets a single data value.
CDFData	getSingleDataObject (long recNum, long[] indices) Gets a single data object from this variable.
long	getSparseRecords () Gets the sparse record type for this variable.
void	putEntry (Attribute attr, long dataType, java.lang. Object data) Creates an attribute entry for this variable.
void	putEntry (java.lang.String attrName, long dataType, java.lang.Object data) Creates an attribute entry for this variable.
CDFData	putHyperData (long recNum, long recCount, long recInterval, long[] dimIndices, long [] dimCounts, long[] dimIntervals, java.lang. Object data) Writes one or more values from the current z variable.
CDFData	putRecord (long recNum, java.lang.Object data) Adds a single record to a record-varying variable.
CDFData	putRecord (java.lang.Object data) Adds a single record to a non-record-varying variable.
CDFData	putScalarData (long recNum, java.lang.Object data) Adds a scalar data to this variable (of 0 dimensional).
CDFData	putScalarData (java.lang.Object data) Adds a scalar data to this variable (of 0 dimensional).
CDFData	putSingleData (long recNum, long[] indices, java.lang. Object data) Adds a single data value to this variable.
void	rename (java.lang.String newName) Renames the current variable.

protected static Variable	retrieve (CDF myCDF, long id) Retrieve the information associated with a variable.
protected void	select (long recNum, long[] indices) Selects this variable, a record and its indices.
protected void	select (long recNum, long recCount, long recInterval, long[] dimIndices, long[] dimCounts, long [] dimIntervals) This will select this variable, a range of records and their indices.
void	selectCacheSize (long cacheSize) Sets the number of 512-byte cache buffers to be used.
void	selectReservePercent (long reservePercent) Sets the reserve percentage to be used for this variable.
void	setBlockingFactor (long blockingFactor) Sets the blocking factor for this variable.
void	setCompression (long cType, long[] cParms) Sets the compression type and parameters for this variable.
void	setDimVariances (long[] dimVariances) Sets the dimension variances for this variable.
void	setInitialRecords (long nRecords) Sets the number of records to be written initially for this variable.
void	setPadValue (java.lang.Object padValue) Sets the pad value for this variable.
void	setRecVariance (long recVariance) Sets the record variance for this variable.
void	setSparseRecords (long sparseRecords) Sets the sparse record type for this variable.
java.lang. String	toString () Gets the name of this variable.
void	updateDataSpec (long dataType, long numElements) Update the data specification (data type and number of elements) of the variable.

Methods inherited from class java.lang.Object

```
clone, equals, finalize, getClass, hashCode, notify, notifyAll,  
wait, wait, wait
```

Method Detail

retrieve

```
protected static final Variable retrieve(CDF myCDF,  
                                           long id)  
    throws CDFException
```

Retrieve the information associated with a variable.

Parameters:

myCDF - The current CDF to which this variable belongs.
id - The variable id from which information is retrieved

Throws:

[CDFException](#) - If the variable of the given id does not exist.

create

```
public static Variable create(CDF myCDF,  
                             java.lang.String varName,  
                             long dataType,  
                             long numElements,  
                             long numDims,  
                             long[] dimSizes,  
                             long recVary,  
                             long[] dimVarys)  
    throws CDFException
```

Creates a variable.

The following example creates a variable called "Longitude" that is scalar (non-array) and record-varying:

```

longitude = Variable.create(cdf, "Longitude", CDF_INT2,
                            1L, 0L, new long [] {1},
                            VARY,
                            new long [] {NOVARY});

```

The following example creates a variable called "TestData" whose data is 2-dimensional (3 x 2), record variance is TRUE, and dimension variances are TRUE.

```

data = Variable.create(cdf, "TestData", CDF_INT2,
                      1L, 2L, new long [] {3,2},
                      VARY,
                      new long [] {VARY, VARY});

```

Parameters:

`myCDF` - the CDF to which this variable belongs

`varName` - the name of the variable to create

`dataType` - the CDF data type for this variable that should be one of the following:

- CDF_BYTE - 1-byte, signed integer
- CDF_CHAR - 1-byte, signed character
- CDF_INT1 - 1-byte, signed integer
- CDF_UCHAR - 1-byte, unsigned character
- CDF_UINT1 - 1-byte, unsigned integer
- CDF_INT2 - 2-byte, signed integer
- CDF_UNIT2 - 2-byte, unsigned integer
- CDF_INT4 - 4-byte, signed integer
- CDF_UINT4 - 4-byte, unsigned integer
- CDF_REAL4 - 4-byte, floating point
- CDF_FLOAT - 4-byte, floating point
- CDF_REAL8 - 8-byte, floating point
- CDF_DOUBLE - 8-byte, floating point
- CDF_EPOCH - 8-byte, floating point
- CDF_EPOCH16 - 2*8-byte, floating point

`numElements` - for CDF_CHAR and CDF_UCHAR this is the string length, 1 otherwise

`numDims` - the dimensionality

`dimSizes` - The dimension sizes. An array of length `numDims` indicating the size of

each dimension

recVary - the record variance that should be either VARY or NOVARY

dimVarys - The dimension variance(s). Each dimension variance should be either VARY or NOVARY.

Returns:

newly created Variable object

Throws:

[CDFException](#) - if there is a problem creating a variable

delete

```
public void delete()  
    throws CDFException
```

Deletes this variable.

Specified by:

[delete](#) in interface [CDFObject](#)

Throws:

[CDFException](#) - if there was an error deleting this variable

rename

```
public void rename(java.lang.String newName)  
    throws CDFException
```

Renames the current variable.

Specified by:

[rename](#) in interface [CDFObject](#)

Parameters:

newName - the new variable name

Throws:

[CDFException](#) - if there was a problem renaming this variable

copy

```
public Variable copy(java.lang.String varName)
    throws CDFException
```

Copies this variable to a new variable. This method only copies the metadata associated with this variable. The duplicate method in this class should be used if the user wants to copy a variable with data and metadata.

Parameters:

varName - the name of the variable to copy this variable into

Returns:

newly copied variable

Throws:

[CDFException](#) - if there was a problem copying a variable

copy

```
public Variable copy(CDF destCDF,
    java.lang.String varName)
    throws CDFException
```

Copies this variable into a new variable and puts it into the designated CDF file. This method only copies the metadata associated with this variable. The duplicate method in this class should be used if the user wants to copy a variable with data and metadata.

Parameters:

destCDF - the destination CDF into which copy this variable
varName - the new variable name

Returns:

newly copied variable

Throws:

[CDFException](#) - if there was a problem copying a variable

duplicate

```
public Variable duplicate(java.lang.String varName)
    throws CDFException
```

Duplicates this variable to a new variable.

Note: This copies everything from the existing variable to a new variable. It includes the metadata associated with this variable, all data records as well as other information such as blocking factor/compression/sparseness/pad value.

Parameters:

varName - the name of the variable to duplicate this variable into

Returns:

newly duplicated variable

Throws:

[CDFException](#) - if there was a problem duplicating a variable

duplicate

```
public Variable duplicate(CDF destCDF,
    java.lang.String varName)
    throws CDFException
```

Duplicates this variable and put it into the designated CDF file.

Note: This copies everything from the current variable to a new variable. It includes the metadata associated with this variable, all data records as well as other information such as blocking factor/compression/sparseness/pad value.

Parameters:

destCDF - the destination CDF to duplicate this variable into

varName - the name of the variable to duplicate this variable into

Returns:

newly duplicated variable

Throws:

[CDFException](#) - if there was a problem duplicating a variable

copyDataRecords

```
public void copyDataRecords(Variable destVar)  
    throws CDFException
```

Copies this variable's data to the destination variable.

Note: This copies data records from the current variable to the destination variable. The metadata associated with the destination variable will be not changed.

The current CDF file MUST be saved first (by calling the save() method) before 'copying/duplicating data records' operation is performed. Otherwise the program will either fail or produce undesired results.

Parameters:

destVar - the destination variable to copy data into

Throws:

[CDFException](#) - if there was a problem copying data records

concatenateDataRecords

```
public void concatenateDataRecords(Variable destVar)  
    throws CDFException
```

Concatenates this variable's data records to the destination variable.

Note: This copies only the data records from the current variable to the destination variable. The metadata associated with the destination variable will be not changed.

Parameters:

`destVar` - the destination variable to copy data records into

Throws:

[CDFException](#) - if there was a problem copying data records

getEntryData

```
public java.lang.Object getEntryData(java.lang.String attrName)
    throws CDFException
```

Gets the attribute entry data for this variable.

The following examples retrieves the 'Longitude' variable entry for the attribute VALIDMIN:

```
Variable var = cdf.getVariable("Longitude");
float longitude = (float) var.getEntryData("VALIDMIN");
```

Parameters:

`attrName` - the name of the attribute to get entry data from

Returns:

the attribute entry data for this variable

Throws:

[CDFException](#) - if there was a problem getting entry data

getSingleData

```
public java.lang.Object getSingleData(long recNum,
    long[] indices)
    throws CDFException
```

Gets a single data value. This method is useful for extracting a specific item among many items.

Let's assume that variable `TestData` is defined to be 1-dimensional array that has 3 elements in it. The following example extracts the last element from the second record:

```
Variable var = cdf.getVariable("TestData");
int data = (int) var.getSingleData(1L, new long [] {2});
```

Let's assume that variable `TestData` is defined to be 2-dimensional (3x2 - 3 rows and 2 columns) array. The following example extracts the first element of the second row from the first record:

```
Variable var = cdf.getVariable("TestData");
int data = (int) var.getSingleData(0L, new long [] {1,0});
```

Parameters:

`recNum` - the record number to retrieve data from

`indices` - the index, within a record, to extract data from

Returns:

extracted single data value

Throws:

[CDFException](#) - if there was a problem extracting data

getSingleDataObject

```
public CDFData getSingleDataObject(long recNum,
                                     long[] indices)
    throws CDFException
```

Gets a single data object from this variable. The value read is put into an `CDFData` object. This method is identical to the `getSingleData` method except that the extracted data is encapsulated inside the `CDFData` object along with other information such as record number, record count, record interval, dimension indices, dimension counts, and dimension intervals.

Parameters:

`recNum` - the record number to retrieve data from

indices - the index, within a record, to extract data from

Returns:

CDFData object containing the requested data

Throws:

[CDFException](#) - if there was a problem extracting data

getRecord

```
public java.lang.Object getRecord(long recNum)
    throws CDFException
```

Gets a single record from this variable.

Let's assume that variable TestData is defined to be 2-dimensional (3x2 - 3 rows and 2 columns). The following example extracts the entire record (containing 6 elements) from the first record:

```
Variable var = cdf.getVariable("TestData");
int[][] data = (int [][]) var.getRecord(0L);
```

Parameters:

recNum - the record number to retrieve data from

Returns:

the requested data record

Throws:

[CDFException](#) - if there was a problem getting a record

getRecordObject

```
public CDFData getRecordObject(long recNum)
    throws CDFException
```

Get a single record of data from this variable. The values read are put into an CDFData object. This method is identical to the getRecord method except that the extracted data is encapsulated

inside the `CDFData` object along with other information such as record number, record count, record interval, dimension indices, dimension counts, and dimension intervals.

Parameters:

`recNum` - the record number to retrieve data from

Returns:

`CDFObject` containing the requested data record

Throws:

[CDFException](#) - if there was a problem getting a record

getRecordsObject

```
public CDFData getRecordsObject(long recNum,  
                                long numRecs)  
    throws CDFException
```

Get a number of records of data from this variable. The values read are put into an `CDFData` object.

Parameters:

`recNum` - the record number to start to retrieve data from

`numRecs` - the number of records to retrieve

Returns:

`CDFObject` containing the requested data record(s)

Throws:

[CDFException](#) - if there was a problem getting the record(s)

getScalarData

```
public java.lang.Object getScalarData()  
    throws CDFException
```

Gets the scalar data from a non-record varying 0-dimensional variable.

Returns:

the variable data from this variable

Throws:

[CDFException](#) - if there was a problem getting data

getScalarData

```
public java.lang.Object getScalarData(long recNum)  
    throws CDFException
```

Get the scalar data from a record varying 0-dimensional variable.

Parameters:

recNum - The record number to retrieve data from

Returns:

the variable data from this variable

Throws:

[CDFException](#) - if there was a problem getting data

getScalarDataObject

```
public CDFData getScalarDataObject()  
    throws CDFException
```

Get the scalar data from a non-record varying 0-dimensional variable. This method is identical to the getScalarData method except that the extracted data is encapsulated inside the CDFData object along with other information such as record number, record count, record interval, dimension indices, dimension counts, and dimension intervals.

Returns:

the variable data from this variable

Throws:

[CDFException](#) - if there was a problem getting data

getScalarDataObject

```
public CDFData getScalarDataObject(long recNum)  
    throws CDFException
```

Get the scalar data from this record varying 0-dimensional variable. This method is identical to the `getScalarData` method except that the extracted data is encapsulated inside the `CDFData` object along with other information such as record number, record count, record interval, dimension indices, dimension counts, and dimension intervals.

Parameters:

`recNum` - the record number to retrieve data from

Returns:

the variable data from this variable

Throws:

[CDFException](#) - if there was a problem getting data

getHyperData

```
public java.lang.Object getHyperData(long recNum,  
    long recCount,  
    long recInterval,  
    long[] dimIndices,  
    long[] dimCounts,  
    long[] dimIntervals)  
    throws CDFException
```

Reads one or more values from the current `z` variable. The values are based on the current record number, current record count, current record interval, current dimension indices, current dimension counts, and current dimension intervals.

Let's assume that variable `TestData` is defined to be 2-dimensional (3x2 - 3 rows and 2 columns). The following example extracts the entire record (containing 6 elements) from the first, second,

and third records:

```
Variable var = cdf.getVariable("TestData");
int[][][] data = (int [][][]) var.getHyperData (0L, 3L, 1L,
new long[]
{0, 0},
new long[]
{3, 2},
new long[]
{1, 1});
```

The following example will extract the second row from the first, and third records:

```
Variable var = cdf.getVariable("TestData");
int[][] data = (int [][]) var.getHyperData (0L, 3L, 2L,
new long[] {1,
0},
new long[] {1,
2},
new long[] {1,
1});
```

The following example will extract the first column from the first and second records:

```
Variable var = cdf.getVariable("TestData");
int[][] data = (int [][]) var.getHyperData (0L, 2L, 1L,
new long[] {0,
0},
new long[] {3,
1},
new long[] {1,
1});
```

Parameters:

`recNum` - the record number at which data search begins

`recCount` - the number of records to read

`recInterval` - the number of records to skip between reads

`dimIndices` - the dimension index within a record at which data search begins

`dimCounts` - the number of elements to read from `dimIndices`

`dimIntervals` - the number of elements to skip between reads

Returns:

the variable data specified by `recNum`, `recCount`, `recInterval`, `dimIndices`, `dimCounts`, and `dimIntervals`

Throws:

[CDFException](#) - if there was a problem getting data

getHyperDataObject

```
public CDFData getHyperDataObject(long recNum,  
                                   long recCount,  
                                   long recInterval,  
                                   long[] dimIndices,  
                                   long[] dimCounts,  
                                   long[] dimIntervals)  
    throws CDFException
```

Reads one or more values from the current `z` variable. The values are read based on the current record number, current record count, current record interval, current dimension indices, current dimension counts, and current dimension intervals. The values read are put into an `CDFData` object.

Parameters:

`recNum` - the record number at which data search begins

`recCount` - the number of records to read

`recInterval` - the number of records to skip between reads

`dimIndices` - the dimension index within a record at which data search begins

`dimCounts` - the number of elements to read from `dimIndices`

`dimIntervals` - the number of elements to skip between reads

Returns:

`CDFData` object that contains the variable data specified by `recNum`, `recCount`, `recInterval`, `dimIndices`, `dimCounts`, and `dimIntervals` as well as the information passed to

this method plus the number of dimensions and the number of elements for this variable.

Throws:

[CDFException](#) - if there was a problem getting data

putEntry

```
public void putEntry(java.lang.String attrName,  
                    long dataType,  
                    java.lang.Object data)  
    throws CDFException
```

Creates an attribute entry for this variable.

The following example creates a variable entry for the variable "Longitude" associated with the attribute "VALIDMIN":

```
Variable longitude = cdf.getVariable("Longitude");  
longitude.putEntry("VALIDMIN", CDF_INT2, new Short((short)  
180));
```

Parameters:

`attrName` - the attribute to which this attribute entry is attached

`dataType` - the CDF data type of the entry data - see the description of the create method in this class for a list of the CDF data types supported

`data` - the attribute entry data to be added

Throws:

[CDFException](#) - if a problem occurs putting an entry

See Also:

[Attribute](#), [Entry](#)

putEntry

```
public void putEntry(Attribute attr,  
                    long dataType,  
                    java.lang.Object data)
```

throws [CDFException](#)

Creates an attribute entry for this variable. The following example creates a variable entry for the variable "Longitude" associated with the attribute "VALIDMIN":

```
Variable longitude = cdf.getVariable("Longitude");
Attribute validMin = Attribute.create(cdf, "VALIDMIN",
                                     VARIABLE_SCOPE);
Entry.create(validMin, longitude.getID(), CDF_INT2,
             new Short((short)10));
```

OR

```
longitude.putEntry(validMin, CDF_INT2, new Short((short)
180));
```

Parameters:

`attr` - the attribute to which this attribute entry is attached

`dataType` - the CDF data type of the entry data - see the description of the create method in this class for a list of the CDF data types supported

`data` - the attribute entry data to be added

Throws:

[CDFException](#) - if a problem occurs putting an entry

See Also:

[Attribute](#), [Entry](#)

putSingleData

```
public CDFData putSingleData(long recNum,
                               long[] indices,
                               java.lang.Object data)
    throws CDFException
```

Adds a single data value to this variable. This method is used to specify a particular element in a

record (if a record is comprised of multiple elements). If a record contains 3 elements, the following example will write the second element to record number 0, leaving the first and third elements unwritten.

```
longitude = cdf.getVariable("Longitude");
longitude.putSingleData(0L, new long[] {1}, new Short((short)
200));
    or
longitude.putSingleData(0L, new long[] {1}, longitudeData
[1]);
```

Parameters:

`recNum` - the record number to which this data belongs

`indices` - the index (location) in the specified record

`data` - the data to be added

Returns:

CDFData object containing the user specified data

Throws:

[CDFException](#) - if there was an error writing data

putScalarData

```
public CDFData putScalarData(long recNum,
                               java.lang.Object data)
    throws CDFException
```

Adds a scalar data to this variable (of 0 dimensional). This method should be used if a variable is defined as record-varying and non-array. The following example will write data to record number 0.

```
longitude = cdf.getVariable("Longitude");
longitude.putScalarData(0L, new Short((short)200));
    or
longitude.putScalarData(0L, longitudeData[0]);
```

Parameters:

`recNum` - the record number to which this data belongs

`data` - the data to be added

Returns:

CDFData object containing the user specified data

Throws:

[CDFException](#) - if there was an error writing data

putScalarData

```
public CDFData putScalarData(java.lang.Object data)
    throws CDFException
```

Adds a scalar data to this variable (of 0 dimensional). This method should be used if a variable is defined as non-record-varying and non-array. Note that there'll be only one record exist if a variable is defined as non-record-varying. The following example will write data to record number 0.

```
longitude = cdf.getVariable("Longitude");
longitude.putScalarData(new Short((short)200));
    or
longitude.putScalarData(longitudeData[0]);
```

Parameters:

`data` - the data to be added

Returns:

CDFData object containing the user specified data

Throws:

[CDFException](#) - if there was an error writing data

putRecord

```
public CDFData putRecord(long recNum,  
                           java.lang.Object data)  
    throws CDFException
```

Adds a single record to a record-varying variable. This method should be used if a record contains one or more elements.

The following example adds a scalar data to record number 0:

```
longitude = cdf.getVariable("Longitude");  
longitude.putRecord(0L, new Short((short)200));
```

The following example adds multiple elements (array) to record number 0:

```
short [] longitudeData = {10, 20, 30};  
longitude = cdf.getVariable("Longitude");  
longitude.putRecord(0L, longitudeData);
```

Parameters:

recNum - the record number to which this data belongs

data - the data to be added

Returns:

CDFData object containing the user specified data

Throws:

[CDFException](#) - if there was a problem writing data

putRecord

```
public CDFData putRecord(java.lang.Object data)
    throws CDFException
```

Adds a single record to a non-record-varying variable. This method should be used if a record contains one element or multiple elements.

The following example adds a scalar data to record number 0:

```
longitude = cdf.getVariable("Longitude");
longitude.putRecord(new Short((short)200));
```

The following example adds multiple elements (array) to record number 0:

```
short [] longitudeData = {10, 20, 30};
longitude = cdf.getVariable("Longitude");
longitude.putRecord(longitudeData);
```

Parameters:

data - the data to be added

Returns:

CDFData object containing the user specified data

Throws:

[CDFException](#) - if there was a problem writing data

putHyperData


```
public CDFData putHyperData(long recNum,
                             long recCount,
                             long recInterval,
                             long[] dimIndices,
                             long[] dimCounts,
                             long[] dimIntervals,
                             java.lang.Object data)
    throws CDFException
```

Writes one or more values from the current z variable. The values are written based on the current record number, current record count, current record interval, current dimension indices, current dimension counts, and current dimension intervals. The values read are put into an CDFData object. Although this method returns a CDFData object, it is not necessary to capture the return value to a CDFData variable.

Let's assume that variable TestData is defined to be 2-dimensional (3x2 - 3 rows and 2 columns). The following example writes the entire record (containing 6 elements) to the first, second, and third records:

```
long [][][] testData = {{{10,20},{30,40},{50, 60}},
                        {{15,25},{45,55},{75, 85}},
                        {{90,95},{96,97}},
{2147483648L,4294967295L}}
};
testData.getHyperData (0L, 3L, 1L,
                      new long[] {0, 0},
                      new long[] {3, 2},
                      new long[] {1, 1});
```

The following example will write the first two rows of testData to the first, third, and fifth records:

```
testData.getHyperData (0L, 3L, 2L,
                      new long[] {0, 0},
                      new long[] {2, 2},
                      new long[] {1, 1});
```

Parameters:

recNum - the record number at which data write begins

`recCount` - the number of records to write

`recInterval` - the number of records to skip between writes

`dimIndices` - the dimension index within a record at which data write begins

`dimCounts` - the number of elements to write from `dimIndices`

`dimIntervals` - the number of elements to skip between writes

`data` - the data to be written

Returns:

CDFData object that contains the variable data specified by `recNum`, `recCount`, `recInterval`, `dimIndices`, `dimCounts`, and `dimIntervals` as well as the information passed to this method plus the number of dimensions and the number of elements for this variable.

Throws:

[CDFException](#) - if there was a problem writing data

select

```
protected final void select(long recNum,  
                             long[] indices)  
    throws CDFException
```

Selects this variable, a record and its indices.

Parameters:

`recNum` - The record number to be selected

`indices` - The indices to be selected

Throws:

[CDFException](#) - If there was a problem selecting the specified record or indices.

select

```
protected final void select(long recNum,  
                             long recCount,  
                             long recInterval,  
                             long[] dimIndices,  
                             long[] dimCounts,  
                             long[] dimIntervals)  
    throws CDFException
```

This will select this variable, a range of records and their indices. It is for a hyper function.

Parameters:

`recNum` - The record number to be selected
`recCount` - The number of records to be selected from `recNum`
`recInterval` - The record interval
`dimIndices` - The dimension indices to be selected
`dimCounts` - The dimension counts to be selected
`dimIntervals` - The dimension intervals to be selected

Throws:

[CDFException](#) - If there was a problem selecting the specified record or indices.

getMyCDF

```
public CDF getMyCDF()
```

Gets the CDF object to which this variable belongs.

Returns:

the CDF object to which this variable belongs

getCompressionType

```
public long getCompressionType()
```

Gets the compression type of this variable.

Returns:

the compression type of this variable

getCompressionPct

```
public long getCompressionPct()
```

Gets the compression percentage rate of this variable.

Returns:

the compression percentage rate of this variable

getCompressionParms

```
public long[] getCompressionParms()
```

Sets the compression parameters of this variable. This is only applicable for the GZIP compression method.

Returns:

the compression parameters of this variable

setCompression

```
public void setCompression(long cType,  
                             long[] cParms)  
    throws CDFException
```

Sets the compression type and parameters for this variable.

Parameters:

cType - the compression type

cParms - the compression parameters that go with cType

Throws:

[CDFException](#) - if a problem occurs setting compression type and parameters

getCompression

```
public java.lang.String getCompression()  
                        throws CDFException
```

Gets the string representation of the compression type and parameters set for this variable.

Returns:

the string representation of the compression type and parameters for this variable

Throws:

[CDFException](#) - if a problem occurs getting the compression type and parameters

getNumDims

```
public long getNumDims()
```

Gets the number of dimensions for this variable.

Returns:

the number of dimensions for this variable

getDimSizes

```
public long[] getDimSizes()
```

Gets the dimensions size of this variable.

Returns:

the dimension size of this variable

getNumElements

```
public long getNumElements()
```

Gets the number of elements for this variable. For CDF_CHAR and CDF_UCHAR this is the number of characters in the string. For all other types this defaults to 1.

Returns:

the number of elements for this variable

getName

```
public java.lang.String getName()
```

Gets the name of this variable.

Specified by:

[getName](#) in interface [CDFObject](#)

Returns:

the name of this variable

getID

```
public long getID()
```

Gets the ID of this variable.

Returns:

the ID of this variable

toString

```
public java.lang.String toString()
```

Gets the name of this variable.

Returns:

the name of this variable

setRecVariance

```
public void setRecVariance(long recVariance)  
    throws CDFException
```

Sets the record variance for this variable.

Parameters:

recVariance - the record variance that should be either VARY or NOVARY.

Throws:

[CDFException](#) - if a problem occurs setting the record variance

getRecVariance

```
public boolean getRecVariance()
```

Gets the value of record variance.

Returns:

True if this variable is record varying, False otherwise

setDimVariances

```
public void setDimVariances(long[] dimVariances)  
    throws CDFException
```

Sets the dimension variances for this variable.

Parameters:

`dimVariances` - the dimension variances for this variable

Throws:

[CDFException](#) - if a problem occurs setting the dimension variances

getDimVariances

```
public long[] getDimVariances()
```

Gets the dimension variances for this variable.

Returns:

the dimension variances for this variable

getDataType

```
public long getDataType()
```

Gets the CDF data type of this variable.

Returns:

the CDF data type of this variable

deleteRecords

```
public void deleteRecords(long firstRec,  
                           long lastRec)  
    throws CDFException
```

Deletes a range of records from this variable.

Parameters:

`firstRec` - the first record to be deleted

lastRec - the last record to be deleted

Throws:

[CDFException](#) - if a problem occurs deleting records

allocateBlock

```
public void allocateBlock(long firstRec,  
                           long lastRec)  
    throws CDFException
```

Allocates a range of records for this variable.

Parameters:

firstRec - the first record to be allocated

lastRec - the last record to be allocated

Throws:

[CDFException](#) - if a problem occurs allocating records

allocateRecords

```
public void allocateRecords(long num0toRecords)  
    throws CDFException
```

Allocates a number of records, starting from record number 0.

Parameters:

num0toRecords - the number of records to be allocated

Throws:

[CDFException](#) - if a problem occurs allocating records

getNumWrittenRecords

```
public long getNumWrittenRecords()  
           throws CDFException
```

Gets the number of records physically written (not allocated) for this variable.

Returns:

the number of records written physically

Throws:

[CDFException](#) - if a problem occurs getting the number of records written physically

getMaxWrittenRecord

```
public long getMaxWrittenRecord()  
           throws CDFException
```

Gets the last written record number, beginning with 0.

Returns:

the last written record number

Throws:

[CDFException](#) - if a problem occurs getting the last written record number

getNumAllocatedRecords

```
public long getNumAllocatedRecords()  
           throws CDFException
```

Gets the number of records allocated for this variable.

Returns:

the number of records allocated

Throws:

[CDFException](#) - if a problem occurs getting the number of records allocated

getMaxAllocatedRecord

```
public long getMaxAllocatedRecord()  
           throws CDFException
```

Gets the maximum allocated record number for this variable.

Returns:

the maximum allocated record number

Throws:

[CDFException](#) - if a problem occurs getting the maximum allocated record number

setPadValue

```
public void setPadValue(java.lang.Object padValue)  
           throws CDFException
```

Sets the pad value for this variable. This pad value is used, when storing data, for undefined values.

Parameters:

padValue - the pad value to be used for undefined values

Throws:

[CDFException](#) - if a problem occurs setting the pad value

checkPadValueExistence

```
public boolean checkPadValueExistence()  
           throws CDFException
```

Checks if the pad value has been defined for this variable. While the getPadValue() method

always returns a pad value, it may simply be the default pad value (albeit the pad value was never defined by the user).

Returns:

Whether the user-defined pad value exists. It is either true or false.

- true - pad value has been specified.
- false - pad value is not specified.

Note: The system default pad value is returned if `getPadValue()` is called.

Throws:

[CDFException](#) - if a problem occurs checking the existence of the pad value

getPadValue

```
public java.lang.Object getPadValue()
```

Gets the pad value set for this variable.

Returns:

the pad value set for this variable

setSparseRecords

```
public void setSparseRecords(long sparseRecords)  
    throws CDFException
```

Sets the sparse record type for this variable.

Parameters:

`sparseRecords` - sparse record type that should be one of the following types:

- `NO_SPARSERECORDS` - The variable doesn't have sparse records.
- `PAD_SPARSERECORDS` - The variable has pad-missing records.
- `PREV_SPARSERECORDS` - The variable has previous-missing records.

Throws:

[CDFException](#) - if a problem occurs setting the sparse record type

getSparseRecords

```
public long getSparseRecords()
```

Gets the sparse record type for this variable.

Returns:

one of the following sparse record type is returned:

- NO_SPARSERECORDS - means that no sparse records are defined
 - PAD_SPARSERECORDS - means that the variable's pad value is used when reading values from a missing record
 - PREV_SPARSERECORDS - means that values from the previous existing records are used when reading values from a missing record
-

setBlockingFactor

```
public void setBlockingFactor(long blockingFactor)  
    throws CDFException
```

Sets the blocking factor for this variable. The blocking factor has no effect for Non-Record varying (NRV) variables or multi-file CDFs.

Parameters:

`blockingFactor` - the blocking factor - a value of zero (0) indicates that the default blocking factor should be used

Throws:

[CDFException](#) - if a problem occurs setting the blocking factor

getBlockingFactor

```
public long getBlockingFactor()  
    throws CDFException
```

Gets the blocking factor for this variable.

Returns:

the blocking factor set this variable

Throws:

[CDFException](#) - if a problem occurs getting the blocking factor set for this variable

setInitialRecords

```
public void setInitialRecords(long nRecords)  
    throws CDFException
```

Sets the number of records to be written initially for this variable.

Parameters:

nRecords - the number of records to be written initially

Throws:

[CDFException](#) - if a problem occurs writing initial records

selectCacheSize

```
public void selectCacheSize(long cacheSize)  
    throws CDFException
```

Sets the number of 512-byte cache buffers to be used. This operation is not applicable for a single-file CDF.

Parameters:

cacheSize - the number of 512-byte cache buffers

Throws:

[CDFException](#) - if a problem occurs allocating cache buffers

confirmCacheSize

```
public long confirmCacheSize()  
           throws CDFException
```

Gets the number of 512-byte cache buffers defined for this variable.

Returns:

the number of 512-byte cache buffers set for this variable

Throws:

[CDFException](#) - if a problem occurs getting the number of cache buffers set for this variable

selectReservePercent

```
public void selectReservePercent(long reservePercent)  
           throws CDFException
```

Sets the reserve percentage to be used for this variable. This operation is only applicable to compressed z Variables. The Concepts chapter in the CDF User's Guide describes the reserve percentage scheme used by the CDF library.

Parameters:

reservePercent - the reserve percentage to be used

Throws:

[CDFException](#) - if a problem occurs setting a reserve percentage

confirmReservePercent

```
public long confirmReservePercent()  
           throws CDFException
```

Gets the reserve percentage set for this variable. This operation is only applicable to compressed z Variables.

Returns:

the reserve percentage set for this variable

Throws:

[CDFException](#) - if a problem occurs getting the reserve percentage

confirmPadValue

```
public long confirmPadValue()  
           throws CDFException
```

Checks the existence of an explicitly specified pad value for the current z variable. If an explicit pad value has not been specified, the informational status code NO_PADVALUE_SPECIFIED is returned. Otherwise, CDF_OK is returned.

Returns:

Existence of pad value. If no pad value is specified for this variable, NO_PADVALUE_SPECIFIED is returned. If a pad value has been specified, then CDF_OK is returned.

Throws:

[CDFException](#) - if a problem occurs checking the existence of pad value.

getAllocatedFrom

```
public long getAllocatedFrom(long recNum)  
           throws CDFException
```

Inquires the next allocated record at or after a given record for this variable.

Parameters:

`recNum` - The record number at which to begin searching for the next allocated record. If this record exists, it will be considered the next allocated record.

Returns:

the number of the next allocated record

Throws:

[CDFException](#) - if a problem occurs getting the number of the next allocated record

getAllocatedTo

```
public long getAllocatedTo(long firstRec)  
    throws CDFException
```

Inquires the last allocated record (before the next unallocated record) at or after a given record for this variable.

Parameters:

`firstRec` - the record number at which to begin searching for the last allocated record

Returns:

the number of the last allocated record

Throws:

[CDFException](#) - if a problem occurs getting the number of the last allocated record

updateDataSpec

```
public void updateDataSpec(long dataType,  
    long numElements)  
    throws CDFException
```

Update the data specification (data type and number of elements) of the variable.

Throws:

[CDFException](#)

getAttributes

```
public java.util.Vector getAttributes()
```

Returns the variable attributes that are associated with this variable.

The following example describes how to retrieve all the variable attributes that are associated with a particular variable.

```
Variable v = cdf.getVariable("myVariable");
Vector  attrs = v.getAttributes();
if (attrs.size() > 0) {
    for (Enumeration e=attrs.elements(); e.
hasMoreElements();) {
        Attribute a = (Attribute) e.nextElement();
        // manipulate the attribute
    }
}
```

Returns:

Returns the variable attributes that are associated with this variable.

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