

# **CDF**

## **Java Reference Manual**

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Space Physics Data Facility  
NASA / Goddard Space Flight Center

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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.

### Version:

1.0, 2.0 03/18/05 Selection of current CDF and attribute are done as part of operations passed to JNI. JNI call is synchronized so only one process is allowed in a JVM, due to multi-thread safety. The select method will never be called., 3.3 01/31/11 Reset the vector size to match the maximum entry in stead of its expanded capacity in getEntries method.

### See Also:

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

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## Field Summary

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

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[zVAR\\_SPARSERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Method Summary

static <a href="#">Attribute</a>	<a href="#">create</a> ( <a href="#">CDF</a> myCDF, java.lang.String name, long scope) Creates a new attribute in the given CDF.
void	<a href="#">delete</a> () Deletes this attribute.
void	<a href="#">deleteEntry</a> (long entryID) Deletes an attribute entry for the given entry number.
void	<a href="#">deleteEntry</a> ( <a href="#">Variable</a> var) Deletes the attribute entry for the given variable.
java.util. Vector	<a href="#">getEntries</a> () Gets all the entries defined for this attribute.
<a href="#">Entry</a>	<a href="#">getEntry</a> (long entryID) Gets the attribute entry for the given entry number.
<a href="#">Entry</a>	<a href="#">getEntry</a> ( <a href="#">Variable</a> var) Gets the attribute entry for the given variable.
long	<a href="#">getEntryID</a> ( <a href="#">Entry</a> entry) Gets the entry id for the given entry.
long	<a href="#">getID</a> () Gets the attribute ID of this attribute.
long	<a href="#">getMaxEntryNumber</a> () Gets the largest Entry number for this attribute.
<a href="#">CDF</a>	<a href="#">getMyCDF</a> () Gets the CDF object to which this attribute belongs.

java.lang. String	<a href="#">getName</a> () Gets the name of this attribute.
long	<a href="#">getNumEntries</a> () Gets the number of entries in this attribute.
long	<a href="#">getScope</a> () Gets the scope of this attribute.
void	<a href="#">rename</a> (java.lang.String newName) Renames the current attribute.
java.lang. String	<a href="#">toString</a> () Gets the name of this attribute.

### Methods inherited from class java.lang.Object

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

## Method Detail

### 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.)

---

## 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()
    throws CDFException
```

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 all variable entries for this attribute. The number of returned entries vector for a variable attribute may be less than the number of variables, as not all variables have an entry for the attribute.

**Throws:**[CDFException](#)

---

**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

---

**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.

**Overrides:**

toString in class java.lang.Object

**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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## Hierarchy For All Packages

### Package Hierarchies:

[gsfc.nssdc.cdf](#), [gsfc.nssdc.cdf.util](#)

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## Class Hierarchy

- java.lang.Object
  - gsfc.nssdc.cdf.[Attribute](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDF](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDFData](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDFNativeLibrary](#) (implements gsfc.nssdc.cdf.[CDFDelegate](#))
  - gsfc.nssdc.cdf.[CDFTools](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[CDFTT2000](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[CDFUtils](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.[Entry](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.util.[Epoch](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[Epoch16](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[EpochNative](#)
  - java.lang.Throwable (implements java.io.Serializable)
    - java.lang.Exception
      - gsfc.nssdc.cdf.[CDFException](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.[Variable](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))

## Interface Hierarchy

- [gsfc.nssdc.cdf.CDFConstants](#)
- [gsfc.nssdc.cdf.CDFDelegate](#)
- [gsfc.nssdc.cdf.CDFObject](#)

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## Deprecated API

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### Contents

- [Deprecated Methods](#)

### Deprecated Methods

[gsfc.nssdc.cdf.CDF.create\(String, int\)](#)

*Use `setFileBackward(long)` method to set the file backward flag and `create(String)` to create file instead.*

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## A

[\*\*AHUFF\\_COMPRESSION\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALL\\_VALUES\*\*](#) - Static variable in class [gsfc.nssdc.cdf.CDFTools](#)

[\*\*allocateBlock\(long, long\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Allocates a range of records for this variable.

[\*\*allocateRecords\(long\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Allocates a number of records, starting from record number 0.

[\*\*ALPHAOSF1\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAOSF1\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSd\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSd\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSg\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSg\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSi\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ALPHAVMSi\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ATTR\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ATTR\\_EXISTENCE\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ATTR\\_EXISTS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*ATTR\\_MAXgENTRY\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_MAXrENTRY](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_MAXzENTRY](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NAME](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NAME\\_TRUNC](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NUMBER](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NUMgENTRIES](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NUMrENTRIES](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_NUMzENTRIES](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ATTR\\_SCOPE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[Attribute](#) - Class in [gsfc.nssdc.cdf](#)

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

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## **B**

[BACKWARD](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BACKWARDFILEoff](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BACKWARDFILEon](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BAD\\_ALLOCATE\\_RECS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BAD\\_ARGUMENT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BAD\\_ATTR\\_NAME](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BAD\\_ATTR\\_NUM](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[BAD\\_BLOCKING\\_FACTOR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)



[\*\*BAD\\_CACHE\\_SIZE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_CDF\\_EXTENSION\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_CDF\\_ID\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_CDF\\_NAME\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_CDFSTATUS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_CHECKSUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_COMPRESSION\\_PARM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DATA\\_TYPE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DIM\\_COUNT\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DIM\\_INDEX\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DIM\\_INTERVAL\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_DIM\\_SIZE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_ENTRY\\_NUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_FNC\\_OR\\_ITEM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_FORMAT\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_INITIAL\\_RECS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_MAJORITY\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_MALLOC\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_NEGtoPOSfp0\\_MODE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_NUM\\_DIMS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_NUM\\_ELEMS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_NUM\\_VARS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_READONLY\\_MODE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_REC\\_COUNT\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_REC\\_INTERVAL\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_REC\\_NUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_SCOPE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_SCRATCH\\_DIR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_SPARSEARRAYS\\_PARM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_VAR\\_NAME\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_VAR\\_NUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*BAD\\_zMODE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*breakdown\(long\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.

[\*\*breakdown\(long\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Breaks an array of TT2000 epoch values down into two dimensional array, the first dimension being the count of the epoch values, and the second dimension being their full, UTC-based date/time component parts for each value.

[\*\*breakdown\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

Breaks an EPOCH value down into its component parts.

[\*\*breakdown\(double\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

Breaks an array of EPOCH values down into its component parts.

[\*\*breakdown\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

Breaks an EPOCH16 value down into its component parts.

[\*\*breakdown\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

**C**

[\*\*CANNOT\\_ALLOCATE\\_RECORDS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_CHANGE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_COMPRESS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_COPY\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_INSERT\\_RECORDS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_SPARSEARRAYS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CANNOT\\_SPARSERECORDS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\*\*](#) - Class in [gsfc.nssdc.cdf](#)

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

[\*\*CDF\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_ACCESS\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_ATTR\\_NAME\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_ATTR\\_NAME\\_LEN256\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_BYTE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_CACHESIZE\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_CHAR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_CHECKSUM\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_CLOSE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_COMPRESSION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_COPYRIGHT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_COPYRIGHT\\_LEN](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_CREATE\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_DECODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_DELETE\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_DOUBLE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_ENCODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_EPOCH](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_EPOCH16](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_EXISTS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_FLOAT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_FORMAT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INCREMENT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INFO](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INT1](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INT2](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INT4](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INT8](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_INTERNAL\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_LEAPSECONDLASTUPDATED](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[CDF\\_MAJORITY](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_MAX\\_DIMS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_MAX\\_PARMS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_MIN\\_DIMS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NAME](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NAME\\_TRUNC](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NEGtoPOSfp0\\_MODE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NUMATTRS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NUMgATTRS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NUMrVARS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NUMvATTRS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_NUMzVARS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_OK](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_OPEN\\_ERROR](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_PATHNAME\\_LEN](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_READ\\_ERROR](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_READONLY\\_MODE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_REAL4](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_REAL8](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[CDF\\_RELEASE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*CDF\\_SAVE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_SCRATCHDIR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_STATUS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_STATUSTEXT\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_TIME\\_TT2000\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_UCHAR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_UINT1\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_UINT2\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_UINT4\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_VAR\\_NAME\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_VAR\\_NAME\\_LEN256\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_VERSION\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_WARN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_WRITE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDF\\_zMODE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CDFConstants\*\*](#) - Interface in [gsfc.nssdc.cdf](#)

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.

[\*\*CDFData\*\*](#) - Class in [gsfc.nssdc.cdf](#)

This class acts as the glue between the Java code and the Java Native Interface (JNI) code.

[\*\*CDFDelegate\*\*](#) - Interface in [gsfc.nssdc.cdf](#)

This class defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library.

[\*\*CDFException\*\*](#) - Exception in [gsfc.nssdc.cdf](#)

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

**[CDFException\(String\)](#)** - Constructor for exception `gsfc.nssdc.cdf.CDFException`

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

**[CDFException\(long\)](#)** - Constructor for exception `gsfc.nssdc.cdf.CDFException`

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

**[CDFException\(long, String\)](#)** - Constructor for exception `gsfc.nssdc.cdf.CDFException`

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

**[cdfFileExists\(String\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Checks the existence of the given CDF file name.

**[CDFgetLastDateinLeapSecondsTable\(\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

/\*\* This method returns the last UTC date that a leap second was added in the leap second table used in the class.

**[CDFgetLeapSecondsTable\(\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

This method returns the leap seconds table.

**[CDFgetLeapSecondsTableStatus\(\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

This method returns the status code reflecting whether the leap seconds are from an external file, defined by an environment variable, or the leap seconds are based on the hard-coded table in the class.

**[CDFgetRowsinLeapSecondsTable\(\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

This method returns the number of entries in the leap seconds table.

**[cdflib\(CDF, CDFObject, Vector\)](#)** - Method in interface `gsfc.nssdc.cdf.CDFDelegate`

Defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library.

**[cdflib\(CDF, CDFObject, Vector\)](#)** - Method in class `gsfc.nssdc.cdf.CDFNativeLibrary`

Calls the Java Native Interface (JNI) program, `cdfNativeLibrary.c`.

**[CDFNativeLibrary](#)** - Class in `gsfc.nssdc.cdf`

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

**[CDFNativeLibrary\(\)](#)** - Constructor for class `gsfc.nssdc.cdf.CDFNativeLibrary`

**[CDFObject](#)** - Interface in `gsfc.nssdc.cdf`

`CDFObject` provides the base interface for all CDF objects.

**[CDFTools](#)** - Class in `gsfc.nssdc.cdf`

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

**[CDFTools\(\)](#)** - Constructor for class `gsfc.nssdc.cdf.CDFTools`

**[CDFTT2000](#)** - Class in `gsfc.nssdc.cdf.util`

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's `CDF_TIME_TT2000` data type.

**[CDFTT2000\(\)](#)** - Constructor for class `gsfc.nssdc.cdf.util.CDFTT2000`

**[CDFUtils](#)** - Class in [gsfc.nssdc.cdf.util](#)

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

**[CDFUtils\(\)](#)** - Constructor for class [gsfc.nssdc.cdf.util.CDFUtils](#)

**[CDFwithSTATS\\_](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[checkPadValueExistence\(\)](#)** - Method in class [gsfc.nssdc.cdf.Variable](#)

Checks if the pad value has been defined for this variable.

**[CHECKSUM\\_](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[CHECKSUM\\_ERROR](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[CHECKSUM\\_NOT\\_ALLOWED](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[close\(\)](#)** - Method in class [gsfc.nssdc.cdf.CDF](#)

Closes this CDF file.

**[CLOSE\\_](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[COLUMN\\_MAJOR](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[COMPRESS\\_CACHESIZE\\_](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[COMPRESSION\\_ERROR](#)** - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

**[compute\(long, long, long, long, long, long, long, long, long\)](#)** - Static method in class [gsfc.nssdc.cdf.util](#).

**[CDFTT2000](#)**

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

**[compute\(long\[\], long\[\], long\[\]\)](#)** - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.

**[compute\(long\[\], long\[\], long\[\], long\[\]\)](#)** - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.

**[compute\(long\[\], long\[\], long\[\], long\[\], long\[\]\)](#)** - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**[compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)](#)** - Static method in class [gsfc.nssdc.cdf.util](#).

**[CDFTT2000](#)**

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/



time component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

[\*\*compute\(long, long, long, long, long, long, long\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an EPOCH value based on its component parts.

[\*\*compute\(long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an array of EPOCH values based on their component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an array of EPOCH values based on their component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an array of EPOCH values based on their component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an array of EPOCH values based on their component parts.

[\*\*compute\(long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\], long\[\]\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch`

Computes an array of EPOCH values based on their component parts.

[\*\*compute\(long, long, long, long, long, long, long, long, long, long, Object\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.Epoch16`

Computes an EPOCH16 value based on its component parts.

[\*\*compute\(long, long, long, long, long, long, long\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.EpochNative`

Mirrors computeEPOCH from the CDF library.

[\*\*concatenateDataRecords\(Variable\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Concatenates this variable's data records to the destination variable.

[\*\*CONFIRM\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*confirmCacheSize\(\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the number of 512-byte cache buffers defined for this variable.

[\*\*confirmCDFCacheSize\(\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[\*\*confirmCompressCacheSize\(\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[\*\*confirmDecoding\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the CDF decoding method defined for this CDF.

[\*\*confirmNegtoPosfp0\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*confirmPadValue\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Checks the existence of an explicitly specified pad value for the current z variable.

[\*\*confirmReadOnlyMode\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*confirmReservePercent\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the reserve percentage set for this variable.

[\*\*confirmStageCacheSize\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*confirmzMode\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the zMode set for this CDF.

[\*\*copy\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Copies this variable to a new variable.

[\*\*copy\(CDF, String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Copies this variable into a new variable and puts it into the designated CDF file.

[\*\*copyDataRecords\(Variable\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Copies this variable's data to the destination variable.

[\*\*CORRUPTED\\_V2\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CORRUPTED\\_V3\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*create\(CDF, String, long\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.Attribute](#)

Creates a new attribute in the given CDF.

[\*\*create\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Creates a CDF file in the current directory.

[\*\*create\(String, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

**Deprecated.** Use *setFileBackward(long)* method to set the file backward flag and *create(String)* to create file instead.

[\*\*create\(Attribute, long, long, Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.Entry](#)

Creates a new global or variable attribute entry.

[\*\*create\(CDF, String, long, long, long, long\[\], long, long\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.Variable](#)

Creates a variable.

[\*\*CREATE\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CURgENTRY\\_EXISTENCE\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*CURrENTRY\\_EXISTENCE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*CURzENTRY\\_EXISTENCE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

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## D

[\*\*DATATYPE\\_MISMATCH\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DATATYPE\\_SIZE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DECOMPRESSION\\_ERROR\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DECSTATION\\_DECODING\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DECSTATION\\_ENCODING\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_BYTE\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_CHAR\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_DOUBLE\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_EPOCH16\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_EPOCH\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_FLOAT\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_INT1\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_INT2\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_INT4\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[\*\*DEFAULT\\_INT8\\_PADVALUE\*\*](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[DEFAULT\\_REAL4\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_REAL8\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_TT2000\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_UCHAR\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_UINT1\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_UINT2\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[DEFAULT\\_UINT4\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[delete\(\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Deletes this attribute.

[delete\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Deletes this CDF file.

[delete\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

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

[delete\(\)](#) - Method in interface [gsfc.nssdc.cdf.CDFObject](#)

Deletes the current object.

[delete\(\)](#) - Method in class [gsfc.nssdc.cdf.Entry](#)

Deletes this entry.

[delete\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Deletes this variable.

[DELETE\\_](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[deleteEntry\(long\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Deletes an attribute entry for the given entry number.

[deleteEntry\(Variable\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Deletes the attribute entry for the given variable.

[deleteRecords\(long, long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Deletes a range of records from this variable.

[deleteRecordsRenumber\(long, long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Deletes a range of records from this variable.

[DID\\_NOT\\_COMPRESS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[dump\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

Dump data information and values, one row at a time, to the stderr.

[dumpData\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

Dumps variable data, one row at a time per record.

[\*\*duplicate\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Duplicates this variable to a new variable.

[\*\*duplicate\(CDF, String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Duplicates this variable and put it into the designated CDF file.

## E

[\*\*EMPTY\\_COMPRESSED\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*encode\(long\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string in ISO 8601 format.

[\*\*encode\(long\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Converts an array of epoch values in TT2000 type into an array of readable, UTC-based date/time strings in ISO 8601 format.

[\*\*encode\(long, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

[\*\*encode\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

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

[\*\*encode\(double\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

Converts an array of EPOCH values into an array of readable date/time strings.

[\*\*encode\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

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

[\*\*encode\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCH from the CDF library.

[\*\*encode1\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

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

[\*\*encode1\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

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

[\*\*encode1\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCH1 from the CDF library.

[\*\*encode2\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

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

[\*\*encode2\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

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

[\*\*encode2\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCH2 from the CDF library.

[\*\*encode3\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

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

[\*\*encode3\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

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

[\*\*encode3\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCH3 from the CDF library.

[\*\*encode4\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

Converts an EPOCH value into a readable date/time, ISO8601 string.

[\*\*encode4\(Object\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

Converts an EPOCH16 value into a readable date/time, ISO8601 string.

[\*\*encode4\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCH4 from the CDF library.

[\*\*encodex\(double, String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

Converts an EPOCH value into a readable date/time string using the specified format.

[\*\*encodex\(Object, String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

Converts an EPOCH16 value into a readable date/time string using the specified format.

[\*\*encodex\(double, String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors encodeEPOCHx from the CDF library.

[\*\*END\\_OF\\_VAR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*Entry\*\*](#) - Class in [gsfc.nssdc.cdf](#)

This class describes a CDF global or variable attribute entry.

[\*\*Epoch\*\*](#) - Class in [gsfc.nssdc.cdf.util](#)

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF\_EPOCH data type.

[\*\*Epoch\(\)\*\*](#) - Constructor for class [gsfc.nssdc.cdf.util.Epoch](#)

[\*\*Epoch16\*\*](#) - Class in [gsfc.nssdc.cdf.util](#)

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF\_EPOCH16 data type.

[\*\*Epoch16\(\)\*\*](#) - Constructor for class [gsfc.nssdc.cdf.util.Epoch16](#)

[\*\*EPOCH1\\_STRING\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH1\\_STRING\\_LEN\\_EXTEND\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH2\\_STRING\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH2\\_STRING\\_LEN\\_EXTEND\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH3\\_STRING\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH3\\_STRING\\_LEN\\_EXTEND\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH4\\_STRING\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH4\\_STRING\\_LEN\\_EXTEND\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH\\_STRING\\_LEN\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCH\\_STRING\\_LEN\\_EXTEND\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EpochNative\*\*](#) - Class in [gsfc.nssdc.cdf.util](#)

The Epoch class is a Java wrapper to the CDF epoch handling routines.

[\*\*EpochNative\(\)\*\*](#) - Constructor for class [gsfc.nssdc.cdf.util.EpochNative](#)

[\*\*EPOCHx\\_FORMAT\\_MAX\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*EPOCHx\\_STRING\\_MAX\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

## F

[\*\*FILLED\\_TT2000\\_VALUE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*finalize\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Do the necessary cleanup when garbage collector reaps it.

[\*\*FORCED\\_PARAMETER\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*fromGregorianTime\(GregorianCalendar\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

This method converts the UTC-based date/time in a [GregorianCalendar](#) class object to TT2000 time.

[\*\*fromUTCEPOCH\(double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Convert an epoch value in CDF\_EPOCH type to TT2000 type.

[\*\*fromUTCEPOCH16\(double\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Convert an epoch data in CDF\_EPOCH16 type to TT2000 type.

[\*\*fromUTCparts\(double, double, double\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time

component parts.

[\*\*fromUTCparts\(double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCparts\(double, double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCparts\(double, double, double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCparts\(double, double, double, double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCparts\(double, double, double, double, double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCparts\(double, double, double, double, double, double, double, double, double\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

[CDFTT2000](#)

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

[\*\*fromUTCstring\(String\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util`.

This method parses an input, UTC-based, date/time string and returns a TT2000 epoch value, nanoseconds since J2000.

## G

[\*\*gENTRY\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*gENTRY\\_DATA\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*gENTRY\\_DATASPEC\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*gENTRY\\_DATATYPE\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`



[\*\*gENTRY\\_EXISTENCE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*gENTRY\\_NUMELEMS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*GET\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*getAllocatedFrom\(long\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Inquires the next allocated record at or after a given record for this variable.

[\*\*getAllocatedTo\(long\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Inquires the last allocated record (before the next unallocated record) at or after a given record for this variable.

[\*\*getAttribute\(long\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the attribute for the given attribute number.

[\*\*getAttribute\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the attribute for the given attribute name.

[\*\*getAttributeID\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the id of the given attribute.

[\*\*getAttributes\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets all the global and variable attributes defined for this CDF.

[\*\*getAttributes\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Returns the variable attributes that are associated with this variable.

[\*\*getBlockingFactor\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the blocking factor for this variable.

[\*\*GETCDFCHECKSUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*GETCDFFILEBACKWARD\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*GETCDFVALIDATE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*getChecksum\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the checksum method, if any, applied to the CDF.

[\*\*getChecksumEnvVar\(\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Gets the value of the CDF\_CHECKSUM environment variable.

[\*\*getCompression\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*getCompression\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the string representation of the compression type and parameters set for this variable.

[\*\*getCompressionParms\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the compression parameters set for this CDF.

[\*\*getCompressionParms\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Sets the compression parameters of this variable.

[getCompressionPct\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the compression percentage set for this CDF.

[getCompressionPct\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the compression percentage rate of this variable.

[getCompressionType\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the compression type set for this CDF.

[getCompressionType\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the compression type of this variable.

[getCopyright\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the CDF copyright statement for this CDF.

[getCurrentStatus\(\)](#) - Method in exception [gsfc.nssdc.cdf.CDFException](#)

Gets the status code that caused CDFException.

[getData\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

Returns an object that is properly dimensioned.

[getData\(\)](#) - Method in class [gsfc.nssdc.cdf.Entry](#)

Gets the data for this entry.

[getDataType\(\)](#) - Method in class [gsfc.nssdc.cdf.Entry](#)

Gets the CDF data type of this entry.

[getDataType\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the CDF data type of this variable.

[getDataTypeValue\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getDelegate\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

This is a placeholder for future expansions/extensions.

[getDimCounts\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

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.

[getDimIndices\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

Gets the starting dimension index within a record for a hyper get/put function.

[getDimIntervals\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

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.

[getDimSizes\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

Gets the dimension sizes of this variable.

[getDimSizes\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the dimensions size of this variable.

[getDimVariances\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the dimension variances for this variable.

[getEncoding\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the encoding method defined for this CDF.

[getEntries\(\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets all the entries defined for this attribute.

[getEntry\(long\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the attribute entry for the given entry number.

[getEntry\(Variable\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the attribute entry for the given variable.

[getEntryData\(String\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the attribute entry data for this variable.

[getEntryID\(Entry\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the entry id for the given entry.

[getFileBackward\(\)](#) - Static method in class `gsfc.nssdc.cdf.CDF`

Gets the file backward flag.

[getFileBackwardEnvVar\(\)](#) - Static method in class `gsfc.nssdc.cdf.CDF`

Gets the value of the `CDF_FILEBACKWARD` environment variable.

[getFormat\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the CDF format defined for this CDF.

[getGlobalAttributes\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the global attributes defined for this CDF.

[getHyperData\(long, long, long, long\[\], long\[\], long\[\]\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Reads one or more values from the current z variable.

[getHyperDataObject\(long, long, long, long\[\], long\[\], long\[\]\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Reads one or more values from the current z variable.

[getID\(\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the attribute ID of this attribute.

[getID\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the id of this CDF file.

[getID\(\)](#) - Method in class `gsfc.nssdc.cdf.Entry`

Gets the ID of this entry.

[getID\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the ID of this variable.

[getLeapSecondLastUpdated\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the date that the CDF has the last leap second updated.

[getLeapSecondLastUpdated\(CDF\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the date of the given CDF's last updated for the leap second.

[GETLEAPSECONDSENVVAR](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[getLeapSecondsTableEnvVar\(\)](#) - Static method in class `gsfc.nssdc.cdf.CDF`

Gets the the `CDF_LEAPSECONDSTABLE` (or `CDF$LEAPSECONDSTABLE` on VMS) environment variable.

[getLeapSecondsTableEnvVar\(\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Find the environment variable "`CDF_LEAPSECONDSTABLE`" that is defined for the leap

seconds table for CDF.

[getLibraryCopyright\(\)](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Retrieve library copyright information associated with the CDF library.

[getLibraryVersion\(\)](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Retrieve library version/release/increment/sub\_increment information associated with the CDF library.

[getLongChecksum\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Gets the long value of the given CDF's checksum in string.

[getLongCompressionType\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getLongEncoding\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getLongFormat\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getLongMajority\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Gets the long value of the given CDF majority.

[getLongSparseRecord\(String\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getMajority\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the variable majority defined for this CDF.

[getMaxAllocatedRecord\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the maximum allocated record number for this variable.

[getMaxEntryNumber\(\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Gets the largest Entry number for this attribute.

[getMaxWrittenRecord\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the last written record number, beginning with 0.

[getMyCDF\(\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Gets the CDF object to which this attribute belongs.

[getMyCDF\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the CDF object to which this variable belongs.

[getName\(\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Gets the name of this attribute.

[getName\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the name of this CDF.

[getName\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

CDFData implements CDFObject to enable CDFDelegate calls.

[getName\(\)](#) - Method in interface [gsfc.nssdc.cdf.CDFObject](#)

Returns the name of the current object.

[getName\(\)](#) - Method in class [gsfc.nssdc.cdf.Entry](#)

Gets the name of this entry.

[getName\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the name of this variable.

[getnDims\(\)](#) - Method in class `gsfc.nssdc.cdf.CDFData`

Gets the dimensionality of this variable.

[getNumAllocatedRecords\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the number of records allocated for this variable.

[getNumAttrs\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[getNumDims\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the number of dimensions for this variable.

[getNumElements\(\)](#) - Method in class `gsfc.nssdc.cdf.Entry`

Gets the number of elements in this entry.

[getNumElements\(long, Object\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

[getNumElements\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the number of elements for this variable.

[getNumEntries\(\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the number of entries in this attribute.

[getNumGattrs\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the number of global attributes in this CDF.

[getNumRvars\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the number of r variables.

[getNumVars\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the number of Z variables defined for this CDF.

[getNumVattrs\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the number of variable attributes in this CDF.

[getNumWrittenRecords\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the number of records physically written (not allocated) for this variable.

[getNumZvars\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the number of z variables in this CDF file.

[getOrphanAttributes\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[getPadValue\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the pad value for this variable.

[getRawData\(\)](#) - Method in class `gsfc.nssdc.cdf.CDFData`

Returns an object of a 1-dimensional array, which presents a sequence of raw data values retrieved and presented by JNI from a CDF file.

[getRecCount\(\)](#) - Method in class `gsfc.nssdc.cdf.CDFData`

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

[getRecInterval\(\)](#) - Method in class `gsfc.nssdc.cdf.CDFData`

Gets the number of records to skip for a hyper get/put function.

[getRecord\(long, String\[\]\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[getRecord\(long, String\[\], long\[\]\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[getRecord\(long, long\[\]\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[getRecord\(long, long\[\], long\[\]\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[getRecord\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets a single record from this variable.

[getRecordObject\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Get a single record of data from this variable.

[getRecordsObject\(long, long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Get a number of records of data from this variable.

[getRecStart\(\)](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

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

[getRecVariance\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the value of record variance.

[getScalarData\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the scalar data from a non-record varying 0-dimensional variable.

[getScalarData\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Get the scalar data from a record varying 0-dimensional variable.

[getScalarDataObject\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Get the scalar data from a non-record varying 0-dimensional variable.

[getScalarDataObject\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Get the scalar data from this record varying 0-dimensional variable.

[getScope\(\)](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Gets the scope of this attribute.

[getSignature\(Object\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Gets the java signature of the given object.

[getSingleData\(long, long\[\]\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets a single data value.

[getSingleDataObject\(long, long\[\]\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets a single data object from this variable.

[getSparseRecords\(\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Gets the sparse record type for this variable.

[getStatus\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

**[getStatusMsg\(long\)](#)** - Static method in exception `gsfc.nssdc.cdf.CDFException`

Get the status text message for the given status code.

**[getStatusText\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.CDF`

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

**[getStringChecksum\(CDF\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string value of the given CDF's checksum.

**[getStringChecksum\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string value of the given CDF's checksum.

**[getStringCompressionType\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string representation of the given CDF compression type.

**[getStringCompressionType\(Variable\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringCompressionType\(CDF\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringData\(Object\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Returns the string value of the given data.

**[getStringData\(Object, int\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Returns the string value of the given data.

**[getStringData\(Object, String\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

returns the string of the value of the given data.

**[getStringData\(Object, String, int\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

returns the string of the value of the given data.

**[getStringDataType\(Variable\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringDataType\(Entry\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringDataType\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string representation of the given CDF data type.

**[getStringDecoding\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string value of the given CDF decoding type .

**[getStringDecoding\(CDF\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringEncoding\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string value of the given CDF encoding type.

**[getStringEncoding\(CDF\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringFormat\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringFormat\(CDF\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

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

**[getStringMajority\(long\)](#)** - Static method in class `gsfc.nssdc.cdf.util.CDFUtils`

Gets the string value of the given CDF majority.

[getStringMajority\(CDF\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getStringSparseRecord\(long\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Gets the string value of the given sparse record type.

[getStringSparseRecord\(Variable\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

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

[getValidate\(\)](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Gets the file validation mode.

[getVariable\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the variable object for the given variable number.

[getVariable\(String\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the variable object for the given variable name.

[getVariableAttributes\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the variable attributes defined for this CDF.

[getVariableID\(String\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the ID of the given variable.

[getVariables\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Gets the z variables defined for this CDF.

[getVersion\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[GLOBAL\\_SCOPE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[gsfc.nssdc.cdf](#) - package [gsfc.nssdc.cdf](#)

[gsfc.nssdc.cdf.util](#) - package [gsfc.nssdc.cdf.util](#)

[GZIP\\_COMPRESSION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## H

[HOST\\_DECODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[HOST\\_ENCODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[HP\\_DECODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)



[HP\\_ENCODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[HUFF\\_COMPRESSION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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**I**

[IBM\\_PC\\_OVERFLOW](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[IBMPC\\_DECODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[IBMPC\\_ENCODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[IBMRS\\_DECODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[IBMRS\\_ENCODING](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_EPOCH\\_FIELD](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_EPOCH\\_VALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_FOR\\_SCOPE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_IN\\_zMODE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_ON\\_V1\\_CDF](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ILLEGAL\\_TT2000\\_VALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[IS\\_A\\_NETCDF](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[isEpochDataType\(long\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Returns whether a CDF data type is an epoch related type.

[isStringDataType\(long\)](#) - Static method in class [gsfc.nssdc.cdf.util.CDFUtils](#)

Returns whether a CDF data type is a string type.

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**L**

[\*\*LeapSecondsfromYMD\(long, long, long\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Find the leap seconds from a given, UTC-based year/month/day.

[\*\*LIB\\_COPYRIGHT\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*LIB\\_INCREMENT\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*LIB\\_RELEASE\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*LIB\\_subINCREMENT\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*LIB\\_VERSION\\_\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

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**M**

[\*\*MAC\\_DECODING\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*MAC\\_ENCODING\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*MD5\\_CHECKSUM\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*MULTI\\_FILE\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*MULTI\\_FILE\\_FORMAT\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

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**N**

[\*\*NA\\_FOR\\_VARIABLE\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*NAMED\\_VALUES\*\*](#) - Static variable in class `gsfc.nssdc.cdf.CDFTools`

[\*\*NEGATIVE\\_FP\\_ZERO\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

- [\*\*NEGtoPOSfp0off\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NEGtoPOSfp0on\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NETWORK\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NETWORK\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NeXT\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NeXT\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_ATTR\\_SELECTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_CDF\\_SELECTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_CHECKSUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_COMPRESSION\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_DELETE\\_ACCESS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_ENTRY\\_SELECTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_MORE\\_ACCESS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_PADVALUE\\_SPECIFIED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_REPORTS\*\*](#) - Static variable in class [gsfc.nssdc.cdf.CDFTools](#)
- [\*\*NO\\_SPARSEARRAYS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_SPARSERECORDS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_STATUS\\_SELECTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_SUCH\\_ATTR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)
- [\*\*NO\\_SUCH\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_SUCH\\_ENTRY\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_SUCH\\_RECORD\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_SUCH\\_VAR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_VALUES\*\*](#) - Static variable in class [gsfc.nssdc.cdf.CDFTools](#)

[\*\*NO\\_VAR\\_SELECTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_VARS\\_IN\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NO\\_WRITE\\_ACCESS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NONE\\_CHECKSUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NOT\\_A\\_CDF\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NOT\\_A\\_CDF\\_OR\\_NOT\\_SUPPORTED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NOVARY\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*NRV\\_VALUES\*\*](#) - Static variable in class [gsfc.nssdc.cdf.CDFTools](#)

[\*\*NULL\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## O

[\*\*open\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Open a CDF file for read/write, the default mode for opening a CDF.

[\*\*open\(String, long\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDF](#)

Open a CDF file.

[\*\*OPEN\\_\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*OPTIMAL\\_ENCODING\\_TREES\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*OTHER\\_CHECKSUM\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## P

[\*\*PAD\\_SPARSERECORDS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*parse\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

This method parses an input date/time string and returns a TT2000 epoch value, nanoseconds since J2000.

[\*\*parse\(String\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.CDFTT2000](#)

This method parses an array of input date/time strings and returns an array of TT2000 epoch values, nanoseconds since J2000.

[\*\*parse\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

This function parses an input date/time string and returns an EPOCH value.

[\*\*parse\(String\[\]\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

This function parses an array of date/time strings and returns an array of EPOCH values.

[\*\*parse\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

This function parses an input date/time string and returns an EPOCH16 value.

[\*\*parse\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors parseEPOCH from CDF library.

[\*\*parse1\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

This function parses an input date/time string and returns an EPOCH value.

[\*\*parse1\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

This function parses an input date/time string and returns an EPOCH16 value.

[\*\*parse1\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors parseEPOCH from CDF library.

[\*\*parse2\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

This function parses an input date/time string and returns an EPOCH value.

[\*\*parse2\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

This function parses an input date/time string and returns an EPOCH16 value.

[\*\*parse2\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors parseEPOCH from CDF library.

[\*\*parse3\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch](#)

This function parses an input date/time string and returns an EPOCH value.

[\*\*parse3\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.Epoch16](#)

This function parses an input date/time string and returns an EPOCH16 value.

[\*\*parse3\(String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.util.EpochNative](#)

Mirrors parseEPOCH from CDF library.

**[parse4\(String\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[Epoch](#)

This function parses an input date/time string and returns an EPOCH value.

**[parse4\(String\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[Epoch16](#)

This function parses an input date/time, ISO8601 string and returns an EPOCH16 value.

**[parse4\(String\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[EpochNative](#)

Mirrors `parseEPOCH` from CDF library.

**[PPC\\_DECODING](#)** - Static variable in interface `gsfc.nssdc.cdf`.[CDFConstants](#)

**[PPC\\_ENCODING](#)** - Static variable in interface `gsfc.nssdc.cdf`.[CDFConstants](#)

**[PRECEEDING\\_RECORDS\\_ALLOCATED](#)** - Static variable in interface `gsfc.nssdc.cdf`.[CDFConstants](#)

**[PREV\\_SPARSERECORDS](#)** - Static variable in interface `gsfc.nssdc.cdf`.[CDFConstants](#)

**[printData\(Object\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data on the screen.

**[printData\(Object, int, boolean\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data on the screen.

**[printData\(Object, int\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data on the screen.

**[printData\(Object, PrintWriter\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data to the place designated by `PrintWriter` that can be a file, `System.out`, `System.err`, and etc.

**[printData\(Object, PrintWriter, int\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data to the place designated by `PrintWriter` that can be a file, `System.out`, `System.err`, and etc.

**[printData\(Object, PrintWriter, int, boolean\)](#)** - Static method in class `gsfc.nssdc.cdf.util`.[CDFUtils](#)

Prints the value of the given data to the place designated by `PrintWriter` that can be a file, `System.out`, `System.err`, and etc.

**[PUT\\_](#)** - Static variable in interface `gsfc.nssdc.cdf`.[CDFConstants](#)

**[putData\(long, Object\)](#)** - Method in class `gsfc.nssdc.cdf`.[Entry](#)

Put the entry data into the CDF.

**[putEntry\(String, long, Object\)](#)** - Method in class `gsfc.nssdc.cdf`.[Variable](#)

Creates an attribute entry for this variable.

**[putEntry\(Attribute, long, Object\)](#)** - Method in class `gsfc.nssdc.cdf`.[Variable](#)

Creates an attribute entry for this variable.

**[putHyperData\(long, long, long, long\[\], long\[\], long\[\], Object\)](#)** - Method in class `gsfc.nssdc.cdf`.[Variable](#)

Writes one or more values from the current `z` variable.

[\*\*putRecord\(long, String\[\], Vector\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*putRecord\(long, String\[\], Vector, long\[\]\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*putRecord\(long, long\[\], Vector\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*putRecord\(long, long\[\], Vector, long\[\]\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

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

[\*\*putRecord\(long, Object\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Adds a single record to a record-varying variable.

[\*\*putRecord\(Object\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Adds a single record to a non-record-varying variable.

[\*\*putScalarData\(long, Object\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Adds a scalar data to this variable (of 0 dimensional).

[\*\*putScalarData\(Object\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Adds a scalar data to this variable (of 0 dimensional).

[\*\*putSingleData\(long, long\[\], Object\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Adds a single data value to this variable.

## R

[\*\*READ\\_ONLY\\_DISTRIBUTION\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*READ\\_ONLY\\_MODE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*READONLYoff\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*READONLYon\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*rename\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.Attribute](#)

Renames the current attribute.

[\*\*rename\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Renames the current CDF.

[\*\*rename\(String\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDFData](#)

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

[rename\(String\)](#) - Method in interface `gsfc.nssdc.cdf.CDFObject`

Renames the current object.

[rename\(String\)](#) - Method in class `gsfc.nssdc.cdf.Entry`

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

[rename\(String\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Renames the current variable.

[rENTRY](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_DATA](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_DATASPEC](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_DATATYPE](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_EXISTENCE](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_NAME](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rENTRY\\_NUMELEMS](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[REPORT\\_ERRORS](#) - Static variable in class `gsfc.nssdc.cdf.CDFTools`

[REPORT\\_INFORMATION](#) - Static variable in class `gsfc.nssdc.cdf.CDFTools`

[REPORT\\_WARNINGS](#) - Static variable in class `gsfc.nssdc.cdf.CDFTools`

[RLE\\_COMPRESSION](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[RLE\\_OF\\_ZEROs](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[ROW\\_MAJOR](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[RV\\_VALUES](#) - Static variable in class `gsfc.nssdc.cdf.CDFTools`

[rVAR](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rVAR\\_ALLOCATEBLOCK](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[rVAR\\_ALLOCATEDFROM](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`



- [rVAR\\_ALLOCATEDTO](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_ALLOCATERECS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_BLOCKINGFACTOR](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_CACHESIZE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_COMPRESSION](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_DATA](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_DATASPEC](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_DATATYPE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_DIMVARYS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_EXISTENCE](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_HYPERDATA](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_INITIALRECS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_MAXallocREC](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_MAXREC](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_NAME](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_nINDEXENTRIES](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_nINDEXLEVELS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_nINDEXRECORDS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_NUMMallocRECS](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [rVAR\\_NUMBER](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[rVAR\\_NUMELEMS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_NUMRECS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_RECORDS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_RECORDS\\_RENUMBER](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_RECVARY](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_RESERVEPERCENT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_SEQDATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_SEQPOS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_SPARSEARRAYS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVAR\\_SPARSERECORDS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_CACHESIZE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_DIMCOUNTS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_DIMINDICES](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_DIMINTERVALS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_DIMSIZES](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_MAXREC](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_NUMDIMS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_RECCOUNT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_RECDATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_RECINTERVAL](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[rVARs\\_RECNUMBER\\_](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## S

[save\(\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Saves this CDF file without closing.

[SAVE\\_](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[SCRATCH\\_CREATE\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[SCRATCH\\_DELETE\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[SCRATCH\\_READ\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[SCRATCH\\_WRITE\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[SELECT\\_](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[selectCacheSize\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Sets the number of 512-byte cache buffers to be used.

[selectCDFCacheSize\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Defines the number of 512-byte cache buffers to be used for the dotCDF file (for the current CDF).

[selectCompressCacheSize\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Sets the number of 512-byte cache buffers to be used for the compression scratch file (for the current CDF).

[selectDecoding\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Defines the CDF decoding method to be used for this CDF.

[selectNegtoPosfp0\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Defines whether to translate -0.0 to 0.0 for reading or writing.

[selectReadOnlyMode\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Sets the desired read-only mode.

[selectReservePercent\(long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

Sets the reserve percentage to be used for this variable.

[selectStageCacheSize\(long\)](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Sets the number of 512-byte cache buffers to be used for the staging scratch file (for the current

CDF).

[\*\*setBlockingFactor\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the blocking factor for this variable.

[\*\*setChecksum\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Specifies the checksum option applied to the CDF.

[\*\*setCompression\(long, long\[\]\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Sets the compression type and parameters for this CDF.

[\*\*setCompression\(long, long\[\]\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the compression type and parameters for this variable.

[\*\*setDelegate\(CDFDelegate\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

This is a placeholder for future expansions/extensions.

[\*\*setDimVariances\(long\[\]\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the dimension variances for this variable.

[\*\*setEncoding\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Defines the encoding method to be used for this CDF.

[\*\*setFileBackward\(long\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.CDF`

Sets the file backward flag so that when a new CDF file is created, it will be created in either in the older V2.7 version or the current library version, i.e., V3.\*.

[\*\*setFormat\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Specifies the format of this CDF.

[\*\*setInfoWarningOff\(\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[\*\*setInfoWarningOn\(\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

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

[\*\*setInitialRecords\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the number of records to be written initially for this variable.

[\*\*setLeapSecondLastUpdated\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Set the leap second last updated for this CDF.

[\*\*setMajority\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.CDF`

Sets the variable majority for this CDF.

[\*\*setPadValue\(Object\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the pad value for this variable.

[\*\*setRecVariance\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the record variance for this variable.

[\*\*setSparseRecords\(long\)\*\*](#) - Method in class `gsfc.nssdc.cdf.Variable`

Sets the sparse record type for this variable.

[\*\*setValidate\(long\)\*\*](#) - Static method in class `gsfc.nssdc.cdf.CDF`

Sets the file validation mode so that when a CDF file is open, it will be validated accordingly.

[\*\*SGI\\_DECODING\*\*](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[\*\*SGi\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*SINGLE\\_FILE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*SINGLE\\_FILE\\_FORMAT\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*skeletonCDF\(String, String, boolean, boolean, boolean, boolean, int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonCDF produces a CDF file from a skeleton table.

[\*\*skeletonCDF\(String, String, boolean, boolean, boolean, boolean, int, int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonCDF produces a CDF file from a skeleton table.

[\*\*skeletonCDF\(String, String, boolean, boolean, boolean, boolean, int, int, int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonCDF produces a CDF file from a skeleton table.

[\*\*skeletonCDF\(String, String, boolean, boolean, boolean, boolean, int, int, String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonCDF produces a CDF file from a skeleton table.

[\*\*skeletonTable\(String, String, boolean, boolean, boolean, boolean, boolean, boolean, int, String\[\], int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonTable produces a skeleton table from a CDF.

[\*\*skeletonTable\(String, String, boolean, boolean, boolean, boolean, boolean, boolean, int, String\[\], int, int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonTable produces a skeleton table from a CDF.

[\*\*skeletonTable\(String, String, boolean, boolean, boolean, boolean, boolean, boolean, int, String\[\], int, int, int, int, int\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonTable produces a skeleton table from a CDF.

[\*\*skeletonTable\(String, String, boolean, boolean, boolean, boolean, boolean, boolean, int, String\[\], int, int, String\)\*\*](#) - Static method in class [gsfc.nssdc.cdf.CDFTools](#)

skeletonTable produces a skeleton table from a CDF.

[\*\*SOME\\_ALREADY\\_ALLOCATED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*STAGE\\_CACHESIZE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*STATUS\\_TEXT\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*SUN\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*SUN\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## T

[toGregorianTime\(long\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

This method converts the UTC-based date/time in TT2000 type to a `GregorianCalendar` class object in default, local time zone.

[toGregorianTime\(long, TimeZone\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

This method converts the UTC-based date/time in TT2000 type to a `GregorianCalendar` class object in specified time zone.

[TOO\\_MANY\\_PARMS](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[TOO\\_MANY\\_VARS](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[toString\(\)](#) - Method in class `gsfc.nssdc.cdf.Attribute`

Gets the name of this attribute.

[toString\(\)](#) - Method in class `gsfc.nssdc.cdf.CDF`

Gets the name of this CDF.

[toString\(\)](#) - Method in class `gsfc.nssdc.cdf.Variable`

Gets the name of this variable.

[toUTCEPOCH\(long\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Convert an epoch value in TT2000 type to `CDF_EPOCH` type.

[toUTCEPOCH16\(long, double\[\]\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Convert an epoch value in TT2000 type to `CDF_EPOCH16` type.

[toUTCparts\(long\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.

[toUTCstring\(Long\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.

[toUTCstring\(long\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.

[toUTCstring\(Long, int\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

[toUTCstring\(long, int\)](#) - Static method in class `gsfc.nssdc.cdf.util.CDFTT2000`

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

[TT2000\\_0\\_STRING\\_LEN](#) - Static variable in interface `gsfc.nssdc.cdf.CDFConstants`

[TT2000\\_1\\_STRING\\_LEN](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[TT2000\\_2\\_STRING\\_LEN](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[TT2000\\_3\\_STRING\\_LEN](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[TT2000\\_CDF\\_MAYNEEDUPDATE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[TT2000\\_TIME\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[TT2000\\_USED\\_OUTDATED\\_TABLE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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## U

[UNABLE\\_TO\\_PROCESS\\_CDF](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[UNKNOWN\\_COMPRESSION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[UNKNOWN\\_SPARSENESS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[UNSUPPORTED\\_OPERATION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[updateDataSpec\(long, long\)](#) - Method in class [gsfc.nssdc.cdf.Entry](#)

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

[updateDataSpec\(long, long\)](#) - Method in class [gsfc.nssdc.cdf.Variable](#)

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

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## V

[VALIDATE\\_](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[VALIDATEFILEoff](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[VALIDATEFILEon](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_ALREADY\\_CLOSED\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_CLOSE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_CREATE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_DELETE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_EXISTS\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_NAME\\_TRUNC\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_OPEN\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_READ\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_SAVE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAR\\_WRITE\\_ERROR\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*Variable\*\*](#) - Class in [gsfc.nssdc.cdf](#)

The **Variable** class defines a CDF variable.

[\*\*VARIABLE\\_SCOPE\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VARY\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAX\\_DECODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*VAX\\_ENCODING\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[\*\*verifyChecksum\(\)\*\*](#) - Method in class [gsfc.nssdc.cdf.CDF](#)

Verifies the data integrity of the CDF file from its checksum.

[\*\*VIRTUAL\\_RECORD\\_DATA\*\*](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

---

## Z



[zENTRY](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_DATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_DATASPEC](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_DATATYPE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_EXISTENCE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_NAME](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zENTRY\\_NUMELEMS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ZLIB\\_COMPRESS\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[ZLIB\\_UNCOMPRESS\\_ERROR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zMODEoff](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zMODEon1](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zMODEon2](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_ALLOCATEBLOCK](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_ALLOCATEDFROM](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_ALLOCATEDTO](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_ALLOCATERECS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_BLOCKINGFACTOR](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_CACHESIZE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_COMPRESSION](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_DATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

- [zVAR\\_DATASPEC\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DATATYPE\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DIMCOUNTS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DIMINDICES\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DIMINTERVALS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DIMSIZES\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_DIMVARYS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_EXISTENCE\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_HYPERDATA\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_INITIALRECS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_MAXallocREC\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_MAXREC\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_NAME\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_nINDEXENTRIES\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_nINDEXLEVELS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_nINDEXRECORDS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_NUMallocRECS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_NUMBER\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_NUMDIMS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)
- [zVAR\\_NUMELEMS\\_](#) - Static variable in interface gsfc.nssdc.cdf.[CDFConstants](#)

[zVAR\\_NUMRECS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_PADVALUE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECCOUNT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECINTERVAL](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECNUMBER](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECORDS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECORDS\\_RENUMBER](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RECVARY](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_RESERVEPERCENT](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_SEQDATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_SEQPOS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_SPARSEARRAYS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVAR\\_SPASERECORDS](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVARs\\_CACHESIZE](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVARs\\_MAXREC](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVARs\\_RECDATA](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

[zVARs\\_RECNUMBER](#) - Static variable in interface [gsfc.nssdc.cdf.CDFConstants](#)

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[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [L](#) [M](#) [N](#) [O](#) [P](#) [R](#) [S](#) [T](#) [U](#) [V](#) [Z](#)

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## How This API Document Is Organized

This API (Application Programming Interface) document has pages corresponding to the items in the navigation bar, described as follows.

### Overview

The [Overview](#) page is the front page of this API document and provides a list of all packages with a summary for each. This page can also contain an overall description of the set of packages.

### Package

Each package has a page that contains a list of its classes and interfaces, with a summary for each. This page can contain four categories:

- Interfaces (*italic*)
- Classes
- Enums
- Exceptions
- Errors
- Annotation Types

### Class/Interface

Each class, interface, nested class and nested interface has its own separate page. Each of these pages has three sections consisting of a class/interface description, summary tables, and detailed member descriptions:

- Class inheritance diagram
- Direct Subclasses
- All Known Subinterfaces
- All Known Implementing Classes
- Class/interface declaration
- Class/interface description

- Nested Class Summary
  - Field Summary
  - Constructor Summary
  - Method Summary
- 
- Field Detail
  - Constructor Detail
  - Method Detail

Each summary entry contains the first sentence from the detailed description for that item. The summary entries are alphabetical, while the detailed descriptions are in the order they appear in the source code. This preserves the logical groupings established by the programmer.

## Annotation Type

Each annotation type has its own separate page with the following sections:

- Annotation Type declaration
- Annotation Type description
- Required Element Summary
- Optional Element Summary
- Element Detail

## Enum

Each enum has its own separate page with the following sections:

- Enum declaration
- Enum description
- Enum Constant Summary
- Enum Constant Detail

## Tree (Class Hierarchy)

There is a [Class Hierarchy](#) page for all packages, plus a hierarchy for each package. Each hierarchy page contains a list of classes and a list of interfaces. The classes are organized by inheritance structure starting with `java.lang.Object`. The interfaces do not inherit from `java.lang.Object`.

- When viewing the Overview page, clicking on "Tree" displays the hierarchy for all

packages.

- When viewing a particular package, class or interface page, clicking "Tree" displays the hierarchy for only that package.

## Deprecated API

The [Deprecated API](#) page lists all of the API that have been deprecated. A deprecated API is not recommended for use, generally due to improvements, and a replacement API is usually given. Deprecated APIs may be removed in future implementations.

## Index

The [Index](#) contains an alphabetic list of all classes, interfaces, constructors, methods, and fields.

## Prev/Next

These links take you to the next or previous class, interface, package, or related page.

## Frames/No Frames

These links show and hide the HTML frames. All pages are available with or without frames.

## Serialized Form

Each serializable or externalizable class has a description of its serialization fields and methods. This information is of interest to re-implementors, not to developers using the API. While there is no link in the navigation bar, you can get to this information by going to any serialized class and clicking "Serialized Form" in the "See also" section of the class description.

## Constant Field Values

The [Constant Field Values](#) page lists the static final fields and their values.

*This help file applies to API documentation generated using the standard doclet.*

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## Package gsfc.nssdc.cdf

### Interface Summary

<a href="#">CDFConstants</a>	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.
<a href="#">CDFDelegate</a>	This class defines the method that is responsible for acting as the gateway between the CDF Java code and the CDF library.
<a href="#">CDFObject</a>	CDFObject provides the base interface for all CDF objects.

### Class Summary

<a href="#">Attribute</a>	This class contains the methods that are associated with either global or variable attributes.
<a href="#">CDF</a>	The CDF class is the main class used to interact with a CDF file.
<a href="#">CDFData</a>	This class acts as the glue between the Java code and the Java Native Interface (JNI) code.
<a href="#">CDFNativeLibrary</a>	This class implements the method that act as the gateway between the CDF Java APIs and the CDF library.
<a href="#">CDFTools</a>	CDFTools.java Created: Tue Nov 24 16:14:50 1998
<a href="#">Entry</a>	This class describes a CDF global or variable attribute entry.
<a href="#">Variable</a>	The <b>Variable</b> class defines a CDF variable.

### Exception Summary

<a href="#">CDFException</a>	This class defines the informational, warning, and error messages that can arise from CDF operations.
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## Hierarchy For Package gsfc.nssdc.cdf

### Package Hierarchies:

[All Packages](#)

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## Class Hierarchy

- java.lang.Object
  - gsfc.nssdc.cdf.[Attribute](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDF](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDFData](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - gsfc.nssdc.cdf.[CDFNativeLibrary](#) (implements gsfc.nssdc.cdf.[CDFDelegate](#))
  - gsfc.nssdc.cdf.[CDFTools](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.[Entry](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))
  - java.lang.Throwable (implements java.io.Serializable)
    - java.lang.Exception
      - gsfc.nssdc.cdf.[CDFException](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.[Variable](#) (implements gsfc.nssdc.cdf.[CDFConstants](#), gsfc.nssdc.cdf.[CDFObject](#))

## Interface Hierarchy

- gsfc.nssdc.cdf.[CDFConstants](#)
  - gsfc.nssdc.cdf.[CDFDelegate](#)
  - gsfc.nssdc.cdf.[CDFObject](#)
-

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[gsfc.nssdc.cdf](#)

Interfaces

[CDFConstants](#)

[CDFDelegate](#)

[CDFObject](#)

Classes

[Attribute](#)

[CDF](#)

[CDFData](#)

[CDFNativeLibrary](#)

[CDFTools](#)

[Entry](#)

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Exceptions

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[PREV CLASS](#) [NEXT CLASS](#)

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

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

gsfc.nssdc.cdf

## Interface CDFConstants

### All Known Implementing Classes:

[Attribute](#), [CDF](#), [CDFData](#), [CDFException](#), [CDFTools](#), [CDFTT2000](#), [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.

### Version:

1.0

## Field Summary

static long	<a href="#">AHUFF_COMPRESSION</a>
static long	<a href="#">ALPHAOSF1_DECODING</a>
static long	<a href="#">ALPHAOSF1_ENCODING</a>
static long	<a href="#">ALPHAVMSd_DECODING</a>
static long	<a href="#">ALPHAVMSd_ENCODING</a>

static long	<a href="#"><u>ALPHAVMSg_DECODING</u></a>
static long	<a href="#"><u>ALPHAVMSg_ENCODING</u></a>
static long	<a href="#"><u>ALPHAVMSi_DECODING</u></a>
static long	<a href="#"><u>ALPHAVMSi_ENCODING</u></a>
static long	<a href="#"><u>ATTR_</u></a>
static long	<a href="#"><u>ATTR_EXISTENCE</u></a>
static long	<a href="#"><u>ATTR_EXISTS</u></a>
static long	<a href="#"><u>ATTR_MAXgENTRY</u></a>
static long	<a href="#"><u>ATTR_MAXrENTRY</u></a>
static long	<a href="#"><u>ATTR_MAXzENTRY</u></a>
static long	<a href="#"><u>ATTR_NAME</u></a>
static long	<a href="#"><u>ATTR_NAME_TRUNC</u></a>
static long	<a href="#"><u>ATTR_NUMBER</u></a>
static long	<a href="#"><u>ATTR_NUMgENTRIES</u></a>
static long	<a href="#"><u>ATTR_NUMrENTRIES</u></a>
static long	<a href="#"><u>ATTR_NUMzENTRIES</u></a>

static long	<a href="#"><u>ATTR_SCOPE</u></a>
static long	<a href="#"><u>BACKWARD</u></a>
static long	<a href="#"><u>BACKWARDFILEoff</u></a>
static long	<a href="#"><u>BACKWARDFILEon</u></a>
static long	<a href="#"><u>BAD_ALLOCATE_RECS</u></a>
static long	<a href="#"><u>BAD_ARGUMENT</u></a>
static long	<a href="#"><u>BAD_ATTR_NAME</u></a>
static long	<a href="#"><u>BAD_ATTR_NUM</u></a>
static long	<a href="#"><u>BAD_BLOCKING_FACTOR</u></a>
static long	<a href="#"><u>BAD_CACHE_SIZE</u></a>
static long	<a href="#"><u>BAD_CDF_EXTENSION</u></a>
static long	<a href="#"><u>BAD_CDF_ID</u></a>
static long	<a href="#"><u>BAD_CDF_NAME</u></a>
static long	<a href="#"><u>BAD_CDFSTATUS</u></a>
static long	<a href="#"><u>BAD_CHECKSUM</u></a>
static long	<a href="#"><u>BAD_COMPRESSION_PARM</u></a>

static long	<a href="#"><u>BAD_DATA_TYPE</u></a>
static long	<a href="#"><u>BAD_DECODING</u></a>
static long	<a href="#"><u>BAD_DIM_COUNT</u></a>
static long	<a href="#"><u>BAD_DIM_INDEX</u></a>
static long	<a href="#"><u>BAD_DIM_INTERVAL</u></a>
static long	<a href="#"><u>BAD_DIM_SIZE</u></a>
static long	<a href="#"><u>BAD_ENCODING</u></a>
static long	<a href="#"><u>BAD_ENTRY_NUM</u></a>
static long	<a href="#"><u>BAD_FNC_OR_ITEM</u></a>
static long	<a href="#"><u>BAD_FORMAT</u></a>
static long	<a href="#"><u>BAD_INITIAL_RECS</u></a>
static long	<a href="#"><u>BAD_MAJORITY</u></a>
static long	<a href="#"><u>BAD_MALLOC</u></a>
static long	<a href="#"><u>BAD_NEGtoPOSfp0_MODE</u></a>
static long	<a href="#"><u>BAD_NUM_DIMS</u></a>
static long	<a href="#"><u>BAD_NUM_ELEMS</u></a>



static long	<a href="#"><u>BAD_NUM_VARS</u></a>
static long	<a href="#"><u>BAD_READONLY_MODE</u></a>
static long	<a href="#"><u>BAD_REC_COUNT</u></a>
static long	<a href="#"><u>BAD_REC_INTERVAL</u></a>
static long	<a href="#"><u>BAD_REC_NUM</u></a>
static long	<a href="#"><u>BAD_SCOPE</u></a>
static long	<a href="#"><u>BAD_SCRATCH_DIR</u></a>
static long	<a href="#"><u>BAD_SPARSEARRAYS_PARM</u></a>
static long	<a href="#"><u>BAD_VAR_NAME</u></a>
static long	<a href="#"><u>BAD_VAR_NUM</u></a>
static long	<a href="#"><u>BAD_ZMODE</u></a>
static long	<a href="#"><u>CANNOT_ALLOCATE_RECORDS</u></a>
static long	<a href="#"><u>CANNOT_CHANGE</u></a>
static long	<a href="#"><u>CANNOT_COMPRESS</u></a>
static long	<a href="#"><u>CANNOT_COPY</u></a>
static long	<a href="#"><u>CANNOT_INSERT_RECORDS</u></a>

static long	<a href="#"><u>CANNOT_SPARSEARRAYS</u></a>
static long	<a href="#"><u>CANNOT_SPARSERECORDS</u></a>
static long	<a href="#"><u>CDF_</u></a>
static long	<a href="#"><u>CDF_ACCESS</u></a>
static long	<a href="#"><u>CDF_ATTR_NAME_LEN</u></a>
static long	<a href="#"><u>CDF_ATTR_NAME_LEN256</u></a>
static long	<a href="#"><u>CDF_BYTE</u></a>
static long	<a href="#"><u>CDF_CACHESIZE</u></a>
static long	<a href="#"><u>CDF_CHAR</u></a>
static long	<a href="#"><u>CDF_CHECKSUM</u></a>
static long	<a href="#"><u>CDF_CLOSE_ERROR</u></a>
static long	<a href="#"><u>CDF_COMPRESSION</u></a>
static long	<a href="#"><u>CDF_COPYRIGHT</u></a>
static long	<a href="#"><u>CDF_COPYRIGHT_LEN</u></a>
static long	<a href="#"><u>CDF_CREATE_ERROR</u></a>
static long	<a href="#"><u>CDF_DECODING</u></a>

static long	<a href="#"><u>CDF_DELETE_ERROR</u></a>
static long	<a href="#"><u>CDF_DOUBLE</u></a>
static long	<a href="#"><u>CDF_ENCODING</u></a>
static long	<a href="#"><u>CDF_EPOCH</u></a>
static long	<a href="#"><u>CDF_EPOCH16</u></a>
static long	<a href="#"><u>CDF_EXISTS</u></a>
static long	<a href="#"><u>CDF_FLOAT</u></a>
static long	<a href="#"><u>CDF_FORMAT</u></a>
static long	<a href="#"><u>CDF_INCREMENT</u></a>
static long	<a href="#"><u>CDF_INFO</u></a>
static long	<a href="#"><u>CDF_INT1</u></a>
static long	<a href="#"><u>CDF_INT2</u></a>
static long	<a href="#"><u>CDF_INT4</u></a>
static long	<a href="#"><u>CDF_INT8</u></a>
static long	<a href="#"><u>CDF_INTERNAL_ERROR</u></a>
static long	<a href="#"><u>CDF_LEAPSECONDLASTUPDATED</u></a>

static long	<a href="#"><u>CDF_MAJORITY_</u></a>
static long	<a href="#"><u>CDF_MAX_DIMS</u></a>
static long	<a href="#"><u>CDF_MAX_PARMS</u></a>
static long	<a href="#"><u>CDF_MIN_DIMS</u></a>
static long	<a href="#"><u>CDF_NAME_</u></a>
static long	<a href="#"><u>CDF_NAME_TRUNC</u></a>
static long	<a href="#"><u>CDF_NEGtoPOSfp0_MODE_</u></a>
static long	<a href="#"><u>CDF_NUMATTRS_</u></a>
static long	<a href="#"><u>CDF_NUMgATTRS_</u></a>
static long	<a href="#"><u>CDF_NUMrVARS_</u></a>
static long	<a href="#"><u>CDF_NUMvATTRS_</u></a>
static long	<a href="#"><u>CDF_NUMzVARS_</u></a>
static long	<a href="#"><u>CDF_OK</u></a>
static long	<a href="#"><u>CDF_OPEN_ERROR</u></a>
static long	<a href="#"><u>CDF_PATHNAME_LEN</u></a>
static long	<a href="#"><u>CDF_READ_ERROR</u></a>

static long	<a href="#"><u>CDF_READONLY_MODE</u></a>
static long	<a href="#"><u>CDF_REAL4</u></a>
static long	<a href="#"><u>CDF_REAL8</u></a>
static long	<a href="#"><u>CDF_RELEASE</u></a>
static long	<a href="#"><u>CDF_SAVE_ERROR</u></a>
static long	<a href="#"><u>CDF_SCRATCHDIR</u></a>
static long	<a href="#"><u>CDF_STATUS</u></a>
static long	<a href="#"><u>CDF_STATUSTEXT_LEN</u></a>
static long	<a href="#"><u>CDF_TIME TT2000</u></a>
static long	<a href="#"><u>CDF_UCHAR</u></a>
static long	<a href="#"><u>CDF_UINT1</u></a>
static long	<a href="#"><u>CDF_UINT2</u></a>
static long	<a href="#"><u>CDF_UINT4</u></a>
static long	<a href="#"><u>CDF_VAR_NAME_LEN</u></a>
static long	<a href="#"><u>CDF_VAR_NAME_LEN256</u></a>
static long	<a href="#"><u>CDF_VERSION</u></a>

static long	<a href="#"><u>CDF_WARN</u></a>
static long	<a href="#"><u>CDF_WRITE_ERROR</u></a>
static long	<a href="#"><u>CDF_zMODE</u></a>
static long	<a href="#"><u>CDFwithSTATS</u></a>
static long	<a href="#"><u>CHECKSUM</u></a>
static long	<a href="#"><u>CHECKSUM_ERROR</u></a>
static long	<a href="#"><u>CHECKSUM_NOT_ALLOWED</u></a>
static long	<a href="#"><u>CLOSE</u></a>
static long	<a href="#"><u>COLUMN_MAJOR</u></a>
static long	<a href="#"><u>COMPRESS_CACHESIZE</u></a>
static long	<a href="#"><u>COMPRESSION_ERROR</u></a>
static long	<a href="#"><u>CONFIRM</u></a>
static long	<a href="#"><u>CORRUPTED_V2_CDF</u></a>
static long	<a href="#"><u>CORRUPTED_V3_CDF</u></a>
static long	<a href="#"><u>CREATE</u></a>
static long	<a href="#"><u>CURgENTRY_EXISTENCE</u></a>

static long	<a href="#"><u>CURrENTRY_EXISTENCE</u></a>
static long	<a href="#"><u>CURzENTRY_EXISTENCE</u></a>
static long	<a href="#"><u>DATATYPE_MISMATCH</u></a>
static long	<a href="#"><u>DATATYPE_SIZE</u></a>
static long	<a href="#"><u>DECOMPRESSION_ERROR</u></a>
static long	<a href="#"><u>DECSTATION_DECODING</u></a>
static long	<a href="#"><u>DECSTATION_ENCODING</u></a>
static byte	<a href="#"><u>DEFAULT_BYTE_PADVALUE</u></a>
static char	<a href="#"><u>DEFAULT_CHAR_PADVALUE</u></a>
static double	<a href="#"><u>DEFAULT_DOUBLE_PADVALUE</u></a>
static double	<a href="#"><u>DEFAULT_EPOCH_PADVALUE</u></a>
static double	<a href="#"><u>DEFAULT_EPOCH16_PADVALUE</u></a>
static float	<a href="#"><u>DEFAULT_FLOAT_PADVALUE</u></a>
static byte	<a href="#"><u>DEFAULT_INT1_PADVALUE</u></a>
static short	<a href="#"><u>DEFAULT_INT2_PADVALUE</u></a>
static int	<a href="#"><u>DEFAULT_INT4_PADVALUE</u></a>

static long	<a href="#"><u>DEFAULT_INT8_PADVALUE</u></a>
static float	<a href="#"><u>DEFAULT_REAL4_PADVALUE</u></a>
static double	<a href="#"><u>DEFAULT_REAL8_PADVALUE</u></a>
static long	<a href="#"><u>DEFAULT_TT2000_PADVALUE</u></a>
static char	<a href="#"><u>DEFAULT_UCHAR_PADVALUE</u></a>
static short	<a href="#"><u>DEFAULT_UINT1_PADVALUE</u></a>
static int	<a href="#"><u>DEFAULT_UINT2_PADVALUE</u></a>
static long	<a href="#"><u>DEFAULT_UINT4_PADVALUE</u></a>
static long	<a href="#"><u>DELETE</u></a>
static long	<a href="#"><u>DID_NOT_COMPRESS</u></a>
static long	<a href="#"><u>EMPTY_COMPRESSED_CDF</u></a>
static long	<a href="#"><u>END_OF_VAR</u></a>
static long	<a href="#"><u>EPOCH_STRING_LEN</u></a>
static long	<a href="#"><u>EPOCH_STRING_LEN_EXTEND</u></a>
static long	<a href="#"><u>EPOCH1_STRING_LEN</u></a>
static long	<a href="#"><u>EPOCH1_STRING_LEN_EXTEND</u></a>



static long	<a href="#"><u>EPOCH2_STRING_LEN</u></a>
static long	<a href="#"><u>EPOCH2_STRING_LEN_EXTEND</u></a>
static long	<a href="#"><u>EPOCH3_STRING_LEN</u></a>
static long	<a href="#"><u>EPOCH3_STRING_LEN_EXTEND</u></a>
static long	<a href="#"><u>EPOCH4_STRING_LEN</u></a>
static long	<a href="#"><u>EPOCH4_STRING_LEN_EXTEND</u></a>
static long	<a href="#"><u>EPOCHx_FORMAT_MAX</u></a>
static long	<a href="#"><u>EPOCHx_STRING_MAX</u></a>
static long	<a href="#"><u>FILLED_TT2000_VALUE</u></a>
static long	<a href="#"><u>FORCED_PARAMETER</u></a>
static long	<a href="#"><u>gENTRY</u></a>
static long	<a href="#"><u>gENTRY_DATA</u></a>
static long	<a href="#"><u>gENTRY_DATASPEC</u></a>
static long	<a href="#"><u>gENTRY_DATATYPE</u></a>
static long	<a href="#"><u>gENTRY_EXISTENCE</u></a>
static long	<a href="#"><u>gENTRY_NUMELEMS</u></a>

static long	<a href="#"><u>GET_</u></a>
static long	<a href="#"><u>GETCDFCHECKSUM</u></a>
static long	<a href="#"><u>GETCDFFILEBACKWARD</u></a>
static long	<a href="#"><u>GETCDFVALIDATE</u></a>
static long	<a href="#"><u>GETLEAPSECONDSENVVAR</u></a>
static long	<a href="#"><u>GLOBAL_SCOPE</u></a>
static long	<a href="#"><u>GZIP_COMPRESSION</u></a>
static long	<a href="#"><u>HOST_DECODING</u></a>
static long	<a href="#"><u>HOST_ENCODING</u></a>
static long	<a href="#"><u>HP_DECODING</u></a>
static long	<a href="#"><u>HP_ENCODING</u></a>
static long	<a href="#"><u>HUFF_COMPRESSION</u></a>
static long	<a href="#"><u>IBM_PC_OVERFLOW</u></a>
static long	<a href="#"><u>IBMPC_DECODING</u></a>
static long	<a href="#"><u>IBMPC_ENCODING</u></a>
static long	<a href="#"><u>IBMRS_DECODING</u></a>

static long	<a href="#"><u>IBMRS_ENCODING</u></a>
static long	<a href="#"><u>ILLEGAL_EPOCH_FIELD</u></a>
static double	<a href="#"><u>ILLEGAL_EPOCH_VALUE</u></a>
static long	<a href="#"><u>ILLEGAL_FOR_SCOPE</u></a>
static long	<a href="#"><u>ILLEGAL_IN_zMODE</u></a>
static long	<a href="#"><u>ILLEGAL_ON_V1_CDF</u></a>
static long	<a href="#"><u>ILLEGAL_TT2000_VALUE</u></a>
static long	<a href="#"><u>IS_A_NETCDF</u></a>
static long	<a href="#"><u>LIB_COPYRIGHT</u></a>
static long	<a href="#"><u>LIB_INCREMENT</u></a>
static long	<a href="#"><u>LIB_RELEASE</u></a>
static long	<a href="#"><u>LIB_subINCREMENT</u></a>
static long	<a href="#"><u>LIB_VERSION</u></a>
static long	<a href="#"><u>MAC_DECODING</u></a>
static long	<a href="#"><u>MAC_ENCODING</u></a>
static long	<a href="#"><u>MD5_CHECKSUM</u></a>

static long	<a href="#"><u>MULTI_FILE</u></a>
static long	<a href="#"><u>MULTI_FILE_FORMAT</u></a>
static long	<a href="#"><u>NA_FOR_VARIABLE</u></a>
static long	<a href="#"><u>NEGATIVE_FP_ZERO</u></a>
static long	<a href="#"><u>NEGtoPOSfp0off</u></a>
static long	<a href="#"><u>NEGtoPOSfp0on</u></a>
static long	<a href="#"><u>NETWORK_DECODING</u></a>
static long	<a href="#"><u>NETWORK_ENCODING</u></a>
static long	<a href="#"><u>NeXT_DECODING</u></a>
static long	<a href="#"><u>NeXT_ENCODING</u></a>
static long	<a href="#"><u>NO_ATTR_SELECTED</u></a>
static long	<a href="#"><u>NO_CDF_SELECTED</u></a>
static long	<a href="#"><u>NO_CHECKSUM</u></a>
static long	<a href="#"><u>NO_COMPRESSION</u></a>
static long	<a href="#"><u>NO_DELETE_ACCESS</u></a>
static long	<a href="#"><u>NO_ENTRY_SELECTED</u></a>

static long	<a href="#"><u>NO_MORE_ACCESS</u></a>
static long	<a href="#"><u>NO_PADVALUE_SPECIFIED</u></a>
static long	<a href="#"><u>NO_SPARSEARRAYS</u></a>
static long	<a href="#"><u>NO_SPARSERECORDS</u></a>
static long	<a href="#"><u>NO_STATUS_SELECTED</u></a>
static long	<a href="#"><u>NO_SUCH_ATTR</u></a>
static long	<a href="#"><u>NO_SUCH_CDF</u></a>
static long	<a href="#"><u>NO_SUCH_ENTRY</u></a>
static long	<a href="#"><u>NO_SUCH_RECORD</u></a>
static long	<a href="#"><u>NO_SUCH_VAR</u></a>
static long	<a href="#"><u>NO_VAR_SELECTED</u></a>
static long	<a href="#"><u>NO_VARS_IN_CDF</u></a>
static long	<a href="#"><u>NO_WRITE_ACCESS</u></a>
static long	<a href="#"><u>NONE_CHECKSUM</u></a>
static long	<a href="#"><u>NOT_A_CDF</u></a>
static long	<a href="#"><u>NOT_A_CDF_OR_NOT_SUPPORTED</u></a>

static long	<a href="#"><u>NOVARY</u></a>
static long	<a href="#"><u>NULL</u></a>
static long	<a href="#"><u>OPEN</u></a>
static long	<a href="#"><u>OPTIMAL_ENCODING_TREES</u></a>
static long	<a href="#"><u>OTHER_CHECKSUM</u></a>
static long	<a href="#"><u>PAD_SPARSERECORDS</u></a>
static long	<a href="#"><u>PPC_DECODING</u></a>
static long	<a href="#"><u>PPC_ENCODING</u></a>
static long	<a href="#"><u>PRECEEDING_RECORDS_ALLOCATED</u></a>
static long	<a href="#"><u>PREV_SPARSERECORDS</u></a>
static long	<a href="#"><u>PUT</u></a>
static long	<a href="#"><u>READ_ONLY_DISTRIBUTION</u></a>
static long	<a href="#"><u>READ_ONLY_MODE</u></a>
static long	<a href="#"><u>READONLYoff</u></a>
static long	<a href="#"><u>READONLYon</u></a>
static long	<a href="#"><u>rENTRY</u></a>

static long	<a href="#"><u>rENTRY_DATA</u></a>
static long	<a href="#"><u>rENTRY_DATASPEC</u></a>
static long	<a href="#"><u>rENTRY_DATATYPE</u></a>
static long	<a href="#"><u>rENTRY_EXISTENCE</u></a>
static long	<a href="#"><u>rENTRY_NAME</u></a>
static long	<a href="#"><u>rENTRY_NUMELEMS</u></a>
static long	<a href="#"><u>RLE_COMPRESSION</u></a>
static long	<a href="#"><u>RLE_OF_ZEROS</u></a>
static long	<a href="#"><u>ROW_MAJOR</u></a>
static long	<a href="#"><u>rVAR</u></a>
static long	<a href="#"><u>rVAR_ALLOCATEBLOCK</u></a>
static long	<a href="#"><u>rVAR_ALLOCATEDFROM</u></a>
static long	<a href="#"><u>rVAR_ALLOCATEDTO</u></a>
static long	<a href="#"><u>rVAR_ALLOCATERECS</u></a>
static long	<a href="#"><u>rVAR_BLOCKINGFACTOR</u></a>
static long	<a href="#"><u>rVAR_CACHESIZE</u></a>

static long	<a href="#"><u>rVAR_COMPRESSION</u></a>
static long	<a href="#"><u>rVAR_DATA</u></a>
static long	<a href="#"><u>rVAR_DATASPEC</u></a>
static long	<a href="#"><u>rVAR_DATATYPE</u></a>
static long	<a href="#"><u>rVAR_DIMVARYS</u></a>
static long	<a href="#"><u>rVAR_EXISTENCE</u></a>
static long	<a href="#"><u>rVAR_HYPERDATA</u></a>
static long	<a href="#"><u>rVAR_INITIALRECS</u></a>
static long	<a href="#"><u>rVAR_MAXallocREC</u></a>
static long	<a href="#"><u>rVAR_MAXREC</u></a>
static long	<a href="#"><u>rVAR_NAME</u></a>
static long	<a href="#"><u>rVAR_nINDEXENTRIES</u></a>
static long	<a href="#"><u>rVAR_nINDEXLEVELS</u></a>
static long	<a href="#"><u>rVAR_nINDEXRECORDS</u></a>
static long	<a href="#"><u>rVAR_NUMallocRECS</u></a>
static long	<a href="#"><u>rVAR_NUMBER</u></a>



static long	<a href="#"><u>rVAR_NUMELEMS</u></a>
static long	<a href="#"><u>rVAR_NUMRECS</u></a>
static long	<a href="#"><u>rVAR_PADVALUE</u></a>
static long	<a href="#"><u>rVAR_RECORDS</u></a>
static long	<a href="#"><u>rVAR_RECORDS_RENUMBER</u></a>
static long	<a href="#"><u>rVAR_RECVARY</u></a>
static long	<a href="#"><u>rVAR_RESERVEPERCENT</u></a>
static long	<a href="#"><u>rVAR_SEQDATA</u></a>
static long	<a href="#"><u>rVAR_SEQPOS</u></a>
static long	<a href="#"><u>rVAR_SPARSEARRAYS</u></a>
static long	<a href="#"><u>rVAR_SPASERECORDS</u></a>
static long	<a href="#"><u>rVARs_CACHESIZE</u></a>
static long	<a href="#"><u>rVARs_DIMCOUNTS</u></a>
static long	<a href="#"><u>rVARs_DIMINDICES</u></a>
static long	<a href="#"><u>rVARs_DIMINTERVALS</u></a>
static long	<a href="#"><u>rVARs_DIMSIZES</u></a>

static long	<a href="#"><u>rVARs_MAXREC_</u></a>
static long	<a href="#"><u>rVARs_NUMDIMS</u></a>
static long	<a href="#"><u>rVARs_RECCOUNT</u></a>
static long	<a href="#"><u>rVARs_RECDATA</u></a>
static long	<a href="#"><u>rVARs_RECINTERVAL_</u></a>
static long	<a href="#"><u>rVARs_RECNUMBER</u></a>
static long	<a href="#"><u>SAVE</u></a>
static long	<a href="#"><u>SCRATCH_CREATE_ERROR</u></a>
static long	<a href="#"><u>SCRATCH_DELETE_ERROR</u></a>
static long	<a href="#"><u>SCRATCH_READ_ERROR</u></a>
static long	<a href="#"><u>SCRATCH_WRITE_ERROR</u></a>
static long	<a href="#"><u>SELECT</u></a>
static long	<a href="#"><u>SGi_DECODING</u></a>
static long	<a href="#"><u>SGi_ENCODING</u></a>
static long	<a href="#"><u>SINGLE_FILE</u></a>
static long	<a href="#"><u>SINGLE_FILE_FORMAT</u></a>

static long	<a href="#"><u>SOME_ALREADY_ALLOCATED</u></a>
static long	<a href="#"><u>STAGE_CACHESIZE</u></a>
static long	<a href="#"><u>STATUS_TEXT</u></a>
static long	<a href="#"><u>SUN_DECODING</u></a>
static long	<a href="#"><u>SUN_ENCODING</u></a>
static long	<a href="#"><u>TOO_MANY_PARMS</u></a>
static long	<a href="#"><u>TOO_MANY_VARS</u></a>
static long	<a href="#"><u>TT2000_0_STRING_LEN</u></a>
static long	<a href="#"><u>TT2000_1_STRING_LEN</u></a>
static long	<a href="#"><u>TT2000_2_STRING_LEN</u></a>
static long	<a href="#"><u>TT2000_3_STRING_LEN</u></a>
static long	<a href="#"><u>TT2000_CDF_MAYNEEDUPDATE</u></a>
static long	<a href="#"><u>TT2000_TIME_ERROR</u></a>
static long	<a href="#"><u>TT2000_USED_OUTDATED_TABLE</u></a>
static long	<a href="#"><u>UNABLE_TO_PROCESS_CDF</u></a>
static long	<a href="#"><u>UNKNOWN_COMPRESSION</u></a>

static long	<a href="#"><u>UNKNOWN_SPARSENESS</u></a>
static long	<a href="#"><u>UNSUPPORTED_OPERATION</u></a>
static long	<a href="#"><u>VALIDATE</u></a>
static long	<a href="#"><u>VALIDATEFILEoff</u></a>
static long	<a href="#"><u>VALIDATEFILEon</u></a>
static long	<a href="#"><u>VAR_ALREADY_CLOSED</u></a>
static long	<a href="#"><u>VAR_CLOSE_ERROR</u></a>
static long	<a href="#"><u>VAR_CREATE_ERROR</u></a>
static long	<a href="#"><u>VAR_DELETE_ERROR</u></a>
static long	<a href="#"><u>VAR_EXISTS</u></a>
static long	<a href="#"><u>VAR_NAME_TRUNC</u></a>
static long	<a href="#"><u>VAR_OPEN_ERROR</u></a>
static long	<a href="#"><u>VAR_READ_ERROR</u></a>
static long	<a href="#"><u>VAR_SAVE_ERROR</u></a>
static long	<a href="#"><u>VAR_WRITE_ERROR</u></a>
static long	<a href="#"><u>VARIABLE_SCOPE</u></a>

static long	<a href="#"><u>VARY</u></a>
static long	<a href="#"><u>VAX_DECODING</u></a>
static long	<a href="#"><u>VAX_ENCODING</u></a>
static long	<a href="#"><u>VIRTUAL_RECORD_DATA</u></a>
static long	<a href="#"><u>zENTRY_</u></a>
static long	<a href="#"><u>zENTRY_DATA</u></a>
static long	<a href="#"><u>zENTRY_DATASPEC</u></a>
static long	<a href="#"><u>zENTRY_DATATYPE</u></a>
static long	<a href="#"><u>zENTRY_EXISTENCE</u></a>
static long	<a href="#"><u>zENTRY_NAME</u></a>
static long	<a href="#"><u>zENTRY_NUMELEMS</u></a>
static long	<a href="#"><u>ZLIB_COMPRESS_ERROR</u></a>
static long	<a href="#"><u>ZLIB_UNCOMPRESS_ERROR</u></a>
static long	<a href="#"><u>zMODEoff</u></a>
static long	<a href="#"><u>zMODEon1</u></a>
static long	<a href="#"><u>zMODEon2</u></a>

static long	<a href="#"><u>zVAR_</u></a>
static long	<a href="#"><u>zVAR_ALLOCATEBLOCK</u></a>
static long	<a href="#"><u>zVAR_ALLOCATEDFROM</u></a>
static long	<a href="#"><u>zVAR_ALLOCATEDTO</u></a>
static long	<a href="#"><u>zVAR_ALLOCATERECS_</u></a>
static long	<a href="#"><u>zVAR_BLOCKINGFACTOR</u></a>
static long	<a href="#"><u>zVAR_CACHESIZE</u></a>
static long	<a href="#"><u>zVAR_COMPRESSION</u></a>
static long	<a href="#"><u>zVAR_DATA</u></a>
static long	<a href="#"><u>zVAR_DATASPEC</u></a>
static long	<a href="#"><u>zVAR_DATATYPE</u></a>
static long	<a href="#"><u>zVAR_DIMCOUNTS</u></a>
static long	<a href="#"><u>zVAR_DIMINDICES</u></a>
static long	<a href="#"><u>zVAR_DIMINTERVALS</u></a>
static long	<a href="#"><u>zVAR_DIMSIZES</u></a>
static long	<a href="#"><u>zVAR_DIMVARYS</u></a>

static long	<a href="#"><u>zVAR_EXISTENCE</u></a>
static long	<a href="#"><u>zVAR_HYPERDATA</u></a>
static long	<a href="#"><u>zVAR_INITIALRECS</u></a>
static long	<a href="#"><u>zVAR_MAXallocREC</u></a>
static long	<a href="#"><u>zVAR_MAXREC</u></a>
static long	<a href="#"><u>zVAR_NAME</u></a>
static long	<a href="#"><u>zVAR_nINDEXENTRIES</u></a>
static long	<a href="#"><u>zVAR_nINDEXLEVELS</u></a>
static long	<a href="#"><u>zVAR_nINDEXRECORDS</u></a>
static long	<a href="#"><u>zVAR_NUMallocRECS</u></a>
static long	<a href="#"><u>zVAR_NUMBER</u></a>
static long	<a href="#"><u>zVAR_NUMDIMS</u></a>
static long	<a href="#"><u>zVAR_NUMELEMS</u></a>
static long	<a href="#"><u>zVAR_NUMRECS</u></a>
static long	<a href="#"><u>zVAR_PADVALUE</u></a>
static long	<a href="#"><u>zVAR_RECCOUNT</u></a>

static long	<a href="#"><u>zVAR_RECINTERVAL</u></a>
static long	<a href="#"><u>zVAR_RECNUMBER</u></a>
static long	<a href="#"><u>zVAR_RECORDS</u></a>
static long	<a href="#"><u>zVAR_RECORDS_RENUMBER</u></a>
static long	<a href="#"><u>zVAR_RECVARY</u></a>
static long	<a href="#"><u>zVAR_RESERVEPERCENT</u></a>
static long	<a href="#"><u>zVAR_SEQDATA</u></a>
static long	<a href="#"><u>zVAR_SEQPOS</u></a>
static long	<a href="#"><u>zVAR_SPARSEARRAYS</u></a>
static long	<a href="#"><u>zVAR_SPASERECORDS</u></a>
static long	<a href="#"><u>zVARs_CACHESIZE</u></a>
static long	<a href="#"><u>zVARs_MAXREC</u></a>
static long	<a href="#"><u>zVARs_RECDATA</u></a>
static long	<a href="#"><u>zVARs_RECNUMBER</u></a>

## Field Detail

### CDF\_MIN\_DIMS



static final long **CDF\_MIN\_DIMS**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_MAX\_DIMS**

static final long **CDF\_MAX\_DIMS**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_VAR\_NAME\_LEN**

static final long **CDF\_VAR\_NAME\_LEN**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_VAR\_NAME\_LEN256**

static final long **CDF\_VAR\_NAME\_LEN256**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_ATTR\_NAME\_LEN**

static final long **CDF\_ATTR\_NAME\_LEN**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_ATTR\_NAME\_LEN256**

```
static final long CDF_ATTR_NAME_LEN256
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_COPYRIGHT\_LEN**

```
static final long CDF_COPYRIGHT_LEN
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_STATUSTEXT\_LEN**

```
static final long CDF_STATUSTEXT_LEN
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_PATHNAME\_LEN**

```
static final long CDF_PATHNAME_LEN
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH\_STRING\_LEN

```
static final long EPOCH_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH1\_STRING\_LEN

```
static final long EPOCH1_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH2\_STRING\_LEN

```
static final long EPOCH2_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH3\_STRING\_LEN

```
static final long EPOCH3_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH4\_STRING\_LEN

```
static final long EPOCH4_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## **EPOCHx\_STRING\_MAX**

```
static final long EPOCHx_STRING_MAX
```

**See Also:**

[Constant Field Values](#)

---

## **EPOCHx\_FORMAT\_MAX**

```
static final long EPOCHx_FORMAT_MAX
```

**See Also:**

[Constant Field Values](#)

---

## **EPOCH\_STRING\_LEN\_EXTEND**

```
static final long EPOCH_STRING_LEN_EXTEND
```

**See Also:**

[Constant Field Values](#)

---

## **EPOCH1\_STRING\_LEN\_EXTEND**

```
static final long EPOCH1_STRING_LEN_EXTEND
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH2\_STRING\_LEN\_EXTEND

```
static final long EPOCH2_STRING_LEN_EXTEND
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH3\_STRING\_LEN\_EXTEND

```
static final long EPOCH3_STRING_LEN_EXTEND
```

**See Also:**

[Constant Field Values](#)

---

## EPOCH4\_STRING\_LEN\_EXTEND

```
static final long EPOCH4_STRING_LEN_EXTEND
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_0\_STRING\_LEN

```
static final long TT2000_0_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_1\_STRING\_LEN

```
static final long TT2000_1_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_2\_STRING\_LEN

```
static final long TT2000_2_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_3\_STRING\_LEN

```
static final long TT2000_3_STRING_LEN
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_INT1

```
static final long CDF_INT1
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_INT2

```
static final long CDF_INT2
```

**See Also:**

[Constant Field Values](#)

## CDF\_INT4

```
static final long CDF_INT4
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_INT8

```
static final long CDF_INT8
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_UINT1

```
static final long CDF_UINT1
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_UINT2

```
static final long CDF_UINT2
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_UINT4

```
static final long CDF_UINT4
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_REAL4

```
static final long CDF_REAL4
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_REAL8

```
static final long CDF_REAL8
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_EPOCH

```
static final long CDF_EPOCH
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_EPOCH16

```
static final long CDF_EPOCH16
```

**See Also:**

[Constant Field Values](#)



## **CDF\_TIME\_TT2000**

```
static final long CDF_TIME_TT2000
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_BYTE**

```
static final long CDF_BYTE
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_FLOAT**

```
static final long CDF_FLOAT
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_DOUBLE**

```
static final long CDF_DOUBLE
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_CHAR**

```
static final long CDF_CHAR
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_UCHAR

```
static final long CDF_UCHAR
```

**See Also:**

[Constant Field Values](#)

---

## NETWORK\_ENCODING

```
static final long NETWORK_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## SUN\_ENCODING

```
static final long SUN_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## VAX\_ENCODING

```
static final long VAX_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## DECSTATION\_ENCODING

static final long DECSTATION\_ENCODING

See Also:

[Constant Field Values](#)

---

## SGi\_ENCODING

static final long SGi\_ENCODING

See Also:

[Constant Field Values](#)

---

## IBMPC\_ENCODING

static final long IBMPC\_ENCODING

See Also:

[Constant Field Values](#)

---

## IBMRS\_ENCODING

static final long IBMRS\_ENCODING

See Also:

[Constant Field Values](#)

---

## HOST\_ENCODING

```
static final long HOST_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## PPC\_ENCODING

```
static final long PPC_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## HP\_ENCODING

```
static final long HP_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## NeXT\_ENCODING

```
static final long NeXT_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## ALPHAOSF1\_ENCODING

```
static final long ALPHAOSF1_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## **ALPHAVMSd\_ENCODING**

```
static final long ALPHAVMSd_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## **ALPHAVMSg\_ENCODING**

```
static final long ALPHAVMSg_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## **ALPHAVMSi\_ENCODING**

```
static final long ALPHAVMSi_ENCODING
```

**See Also:**

[Constant Field Values](#)

---

## **NETWORK\_DECODING**

```
static final long NETWORK_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## SUN\_DECODING

```
static final long SUN_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## VAX\_DECODING

```
static final long VAX_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## DECSTATION\_DECODING

```
static final long DECSTATION_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## SGi\_DECODING

```
static final long SGI_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## IBMPC\_DECODING

```
static final long IBMPC_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## **IBMRS\_DECODING**

static final long **IBMRS\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **HOST\_DECODING**

static final long **HOST\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **PPC\_DECODING**

static final long **PPC\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **MAC\_ENCODING**

static final long **MAC\_ENCODING**

**See Also:**

[Constant Field Values](#)

## MAC\_DECODING

static final long **MAC\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## HP\_DECODING

static final long **HP\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## NeXT\_DECODING

static final long **NeXT\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## ALPHAOSF1\_DECODING

static final long **ALPHAOSF1\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## ALPHAVMSd\_DECODING



static final long **ALPHAVMSd\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **ALPHAVMSg\_DECODING**

static final long **ALPHAVMSg\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **ALPHAVMSi\_DECODING**

static final long **ALPHAVMSi\_DECODING**

**See Also:**

[Constant Field Values](#)

---

## **VARY**

static final long **VARY**

**See Also:**

[Constant Field Values](#)

---

## **NOVARY**

static final long **NOVARY**

**See Also:**

[Constant Field Values](#)

## **ROW\_MAJOR**

static final long **ROW\_MAJOR**

**See Also:**

[Constant Field Values](#)

---

## **COLUMN\_MAJOR**

static final long **COLUMN\_MAJOR**

**See Also:**

[Constant Field Values](#)

---

## **SINGLE\_FILE**

static final long **SINGLE\_FILE**

**See Also:**

[Constant Field Values](#)

---

## **MULTI\_FILE**

static final long **MULTI\_FILE**

**See Also:**

[Constant Field Values](#)

---

## **GLOBAL\_SCOPE**

static final long **GLOBAL\_SCOPE**

**See Also:**

[Constant Field Values](#)

---

## **VARIABLE\_SCOPE**

static final long **VARIABLE\_SCOPE**

**See Also:**

[Constant Field Values](#)

---

## **READONLYon**

static final long **READONLYon**

**See Also:**

[Constant Field Values](#)

---

## **READONLYoff**

static final long **READONLYoff**

**See Also:**

[Constant Field Values](#)

---

## **zMODEoff**

static final long **zMODEoff**

**See Also:**

## [Constant Field Values](#)

---

### **zMODEon1**

static final long **zMODEon1**

**See Also:**

[Constant Field Values](#)

---

### **zMODEon2**

static final long **zMODEon2**

**See Also:**

[Constant Field Values](#)

---

### **NEGtoPOSfp0on**

static final long **NEGtoPOSfp0on**

**See Also:**

[Constant Field Values](#)

---

### **NEGtoPOSfp0off**

static final long **NEGtoPOSfp0off**

**See Also:**

[Constant Field Values](#)

---

## **BACKWARDFILEon**

static final long **BACKWARDFILEon**

**See Also:**

[Constant Field Values](#)

---

## **BACKWARDFILEoff**

static final long **BACKWARDFILEoff**

**See Also:**

[Constant Field Values](#)

---

## **VALIDATEFILEon**

static final long **VALIDATEFILEon**

**See Also:**

[Constant Field Values](#)

---

## **VALIDATEFILEoff**

static final long **VALIDATEFILEoff**

**See Also:**

[Constant Field Values](#)

---

## **NO\_CHECKSUM**

static final long **NO\_CHECKSUM**

**See Also:**

[Constant Field Values](#)

---

## **NONE\_CHECKSUM**

```
static final long NONE_CHECKSUM
```

**See Also:**

[Constant Field Values](#)

---

## **MD5\_CHECKSUM**

```
static final long MD5_CHECKSUM
```

**See Also:**

[Constant Field Values](#)

---

## **OTHER\_CHECKSUM**

```
static final long OTHER_CHECKSUM
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_MAX\_PARMS**

```
static final long CDF_MAX_PARMS
```

**See Also:**

[Constant Field Values](#)

---

## **NO\_COMPRESSION**

```
static final long NO_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **RLE\_COMPRESSION**

```
static final long RLE_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **HUFF\_COMPRESSION**

```
static final long HUFF_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **AHUFF\_COMPRESSION**

```
static final long AHUFF_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **GZIP\_COMPRESSION**

```
static final long GZIP_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **RLE\_OF\_ZEROs**

static final long **RLE\_OF\_ZEROs**

**See Also:**

[Constant Field Values](#)

---

## **OPTIMAL\_ENCODING\_TREES**

static final long **OPTIMAL\_ENCODING\_TREES**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SPARSEARRAYS**

static final long **NO\_SPARSEARRAYS**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SPARSERECORDS**

static final long **NO\_SPARSERECORDS**

**See Also:**

[Constant Field Values](#)



## PAD\_SPARSERECORDS

```
static final long PAD_SPARSERECORDS
```

**See Also:**

[Constant Field Values](#)

---

## PREV\_SPARSERECORDS

```
static final long PREV_SPARSERECORDS
```

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_BYTE\_PADVALUE

```
static final byte DEFAULT_BYTE_PADVALUE
```

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_INT1\_PADVALUE

```
static final byte DEFAULT_INT1_PADVALUE
```

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_UINT1\_PADVALUE

static final short **DEFAULT\_UINT1\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_INT2\_PADVALUE**

static final short **DEFAULT\_INT2\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_UINT2\_PADVALUE**

static final int **DEFAULT\_UINT2\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_INT4\_PADVALUE**

static final int **DEFAULT\_INT4\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_UINT4\_PADVALUE**

static final long **DEFAULT\_UINT4\_PADVALUE**

**See Also:**

[Constant Field Values](#)

## DEFAULT\_INT8\_PADVALUE

static final long **DEFAULT\_INT8\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_REAL4\_PADVALUE

static final float **DEFAULT\_REAL4\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_FLOAT\_PADVALUE

static final float **DEFAULT\_FLOAT\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_REAL8\_PADVALUE

static final double **DEFAULT\_REAL8\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_DOUBLE\_PADVALUE

static final double **DEFAULT\_DOUBLE\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_CHAR\_PADVALUE**

static final char **DEFAULT\_CHAR\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_UCHAR\_PADVALUE**

static final char **DEFAULT\_UCHAR\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_EPOCH\_PADVALUE**

static final double **DEFAULT\_EPOCH\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## **DEFAULT\_EPOCH16\_PADVALUE**

static final double **DEFAULT\_EPOCH16\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## DEFAULT\_TT2000\_PADVALUE

static final long **DEFAULT\_TT2000\_PADVALUE**

**See Also:**

[Constant Field Values](#)

---

## ILLEGAL\_EPOCH\_VALUE

static final double **ILLEGAL\_EPOCH\_VALUE**

**See Also:**

[Constant Field Values](#)

---

## ILLEGAL\_TT2000\_VALUE

static final long **ILLEGAL\_TT2000\_VALUE**

**See Also:**

[Constant Field Values](#)

---

## FILLED\_TT2000\_VALUE

static final long **FILLED\_TT2000\_VALUE**

**See Also:**

[Constant Field Values](#)

---

## **VIRTUAL\_RECORD\_DATA**

```
static final long VIRTUAL_RECORD_DATA
```

**See Also:**

[Constant Field Values](#)

---

## **DID\_NOT\_COMPRESS**

```
static final long DID_NOT_COMPRESS
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_ALREADY\_CLOSED**

```
static final long VAR_ALREADY_CLOSED
```

**See Also:**

[Constant Field Values](#)

---

## **SINGLE\_FILE\_FORMAT**

```
static final long SINGLE_FILE_FORMAT
```

**See Also:**

[Constant Field Values](#)

---

## **NO\_PADVALUE\_SPECIFIED**

```
static final long NO_PADVALUE_SPECIFIED
```

**See Also:**

[Constant Field Values](#)

---

## **NO\_VARS\_IN\_CDF**

```
static final long NO_VARS_IN_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **MULTI\_FILE\_FORMAT**

```
static final long MULTI_FILE_FORMAT
```

**See Also:**

[Constant Field Values](#)

---

## **SOME\_ALREADY\_ALLOCATED**

```
static final long SOME_ALREADY_ALLOCATED
```

**See Also:**

[Constant Field Values](#)

---

## **PRECEEDING\_RECORDS\_ALLOCATED**

```
static final long PRECEEDING_RECORDS_ALLOCATED
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_CDF\_MAYNEEDUPDATE

```
static final long TT2000_CDF_MAYNEEDUPDATE
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_OK

```
static final long CDF_OK
```

**See Also:**

[Constant Field Values](#)

---

## ATTR\_NAME\_TRUNC

```
static final long ATTR_NAME_TRUNC
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_NAME\_TRUNC

```
static final long CDF_NAME_TRUNC
```

**See Also:**

[Constant Field Values](#)

---

## VAR\_NAME\_TRUNC

```
static final long VAR_NAME_TRUNC
```



**See Also:**

[Constant Field Values](#)

---

## **NEGATIVE\_FP\_ZERO**

static final long **NEGATIVE\_FP\_ZERO**

**See Also:**

[Constant Field Values](#)

---

## **FORCED\_PARAMETER**

static final long **FORCED\_PARAMETER**

**See Also:**

[Constant Field Values](#)

---

## **NA\_FOR\_VARIABLE**

static final long **NA\_FOR\_VARIABLE**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_WARN**

static final long **CDF\_WARN**

**See Also:**

[Constant Field Values](#)

## **ATTR\_EXISTS**

static final long **ATTR\_EXISTS**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_CDF\_ID**

static final long **BAD\_CDF\_ID**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DATA\_TYPE**

static final long **BAD\_DATA\_TYPE**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DIM\_SIZE**

static final long **BAD\_DIM\_SIZE**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DIM\_INDEX**

static final long **BAD\_DIM\_INDEX**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_ENCODING**

static final long **BAD\_ENCODING**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_MAJORITY**

static final long **BAD\_MAJORITY**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_NUM\_DIMS**

static final long **BAD\_NUM\_DIMS**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_REC\_NUM**

static final long **BAD\_REC\_NUM**

**See Also:**

[Constant Field Values](#)

## **BAD\_SCOPE**

static final long **BAD\_SCOPE**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_NUM\_ELEMS**

static final long **BAD\_NUM\_ELEMS**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_OPEN\_ERROR**

static final long **CDF\_OPEN\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_EXISTS**

static final long **CDF\_EXISTS**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_FORMAT**

static final long **BAD\_FORMAT**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_ALLOCATE\_RECS**

static final long **BAD\_ALLOCATE\_RECS**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_CDF\_EXTENSION**

static final long **BAD\_CDF\_EXTENSION**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SUCH\_ATTR**

static final long **NO\_SUCH\_ATTR**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SUCH\_ENTRY**

static final long **NO\_SUCH\_ENTRY**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SUCH\_VAR**

```
static final long NO_SUCH_VAR
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_READ\_ERROR**

```
static final long VAR_READ_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_WRITE\_ERROR**

```
static final long VAR_WRITE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_ARGUMENT**

```
static final long BAD_ARGUMENT
```

**See Also:**

[Constant Field Values](#)

---

## **IBM\_PC\_OVERFLOW**

```
static final long IBM_PC_OVERFLOW
```

**See Also:**

[Constant Field Values](#)

---

## **TOO\_MANY\_VARS**

```
static final long TOO_MANY_VARS
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_EXISTS**

```
static final long VAR_EXISTS
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_MALLOC**

```
static final long BAD_MALLOC
```

**See Also:**

[Constant Field Values](#)

---

## **NOT\_A\_CDF**

```
static final long NOT_A_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **CORRUPTED\_V2\_CDF**

```
static final long CORRUPTED_V2_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_OPEN\_ERROR**

```
static final long VAR_OPEN_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_INITIAL\_RECS**

```
static final long BAD_INITIAL_RECS
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_BLOCKING\_FACTOR**

```
static final long BAD_BLOCKING_FACTOR
```

**See Also:**

[Constant Field Values](#)

---



## END\_OF\_VAR

static final long **END\_OF\_VAR**

**See Also:**

[Constant Field Values](#)

---

## BAD\_CDFSTATUS

static final long **BAD\_CDFSTATUS**

**See Also:**

[Constant Field Values](#)

---

## CDF\_INTERNAL\_ERROR

static final long **CDF\_INTERNAL\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## BAD\_NUM\_VARS

static final long **BAD\_NUM\_VARS**

**See Also:**

[Constant Field Values](#)

---

## BAD\_REC\_COUNT

static final long **BAD\_REC\_COUNT**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_REC\_INTERVAL**

static final long **BAD\_REC\_INTERVAL**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DIM\_COUNT**

static final long **BAD\_DIM\_COUNT**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DIM\_INTERVAL**

static final long **BAD\_DIM\_INTERVAL**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_VAR\_NUM**

static final long **BAD\_VAR\_NUM**

**See Also:**

[Constant Field Values](#)

## **BAD\_ATTR\_NUM**

static final long **BAD\_ATTR\_NUM**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_ENTRY\_NUM**

static final long **BAD\_ENTRY\_NUM**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_ATTR\_NAME**

static final long **BAD\_ATTR\_NAME**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_VAR\_NAME**

static final long **BAD\_VAR\_NAME**

**See Also:**

[Constant Field Values](#)

---

## **NO\_ATTR\_SELECTED**

static final long **NO\_ATTR\_SELECTED**

**See Also:**

[Constant Field Values](#)

---

## **NO\_ENTRY\_SELECTED**

static final long **NO\_ENTRY\_SELECTED**

**See Also:**

[Constant Field Values](#)

---

## **NO\_VAR\_SELECTED**

static final long **NO\_VAR\_SELECTED**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_CDF\_NAME**

static final long **BAD\_CDF\_NAME**

**See Also:**

[Constant Field Values](#)

---

## **CANNOT\_CHANGE**

static final long **CANNOT\_CHANGE**

**See Also:**

[Constant Field Values](#)

## **NO\_STATUS\_SELECTED**

```
static final long NO_STATUS_SELECTED
```

**See Also:**

[Constant Field Values](#)

---

## **NO\_CDF\_SELECTED**

```
static final long NO_CDF_SELECTED
```

**See Also:**

[Constant Field Values](#)

---

## **READ\_ONLY\_DISTRIBUTION**

```
static final long READ_ONLY_DISTRIBUTION
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_CLOSE\_ERROR**

```
static final long CDF_CLOSE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_CLOSE\_ERROR**

```
static final long VAR_CLOSE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_FNC\_OR\_ITEM**

```
static final long BAD_FNC_OR_ITEM
```

**See Also:**

[Constant Field Values](#)

---

## **ILLEGAL\_ON\_V1\_CDF**

```
static final long ILLEGAL_ON_V1_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_CACHE\_SIZE**

```
static final long BAD_CACHE_SIZE
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_CREATE\_ERROR**

```
static final long CDF_CREATE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **NO\_SUCH\_CDF**

```
static final long NO_SUCH_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_CREATE\_ERROR**

```
static final long VAR_CREATE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **READ\_ONLY\_MODE**

```
static final long READ_ONLY_MODE
```

**See Also:**

[Constant Field Values](#)

---

## **ILLEGAL\_IN\_zMODE**

```
static final long ILLEGAL_IN_zMODE
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_zMODE**

```
static final long BAD_zMODE
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_READONLY\_MODE**

```
static final long BAD_READONLY_MODE
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_READ\_ERROR**

```
static final long CDF_READ_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_WRITE\_ERROR**

```
static final long CDF_WRITE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **ILLEGAL\_FOR\_SCOPE**

```
static final long ILLEGAL_FOR_SCOPE
```



**See Also:**

[Constant Field Values](#)

---

## **NO\_MORE\_ACCESS**

```
static final long NO_MORE_ACCESS
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_DECODING**

```
static final long BAD_DECODING
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_NEGtoPOSfp0\_MODE**

```
static final long BAD_NEGtoPOSfp0_MODE
```

**See Also:**

[Constant Field Values](#)

---

## **UNSUPPORTED\_OPERATION**

```
static final long UNSUPPORTED_OPERATION
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_SAVE\_ERROR

```
static final long CDF_SAVE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## VAR\_SAVE\_ERROR

```
static final long VAR_SAVE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## NO\_WRITE\_ACCESS

```
static final long NO_WRITE_ACCESS
```

**See Also:**

[Constant Field Values](#)

---

## NO\_DELETE\_ACCESS

```
static final long NO_DELETE_ACCESS
```

**See Also:**

[Constant Field Values](#)

---

## CDF\_DELETE\_ERROR

```
static final long CDF_DELETE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **VAR\_DELETE\_ERROR**

```
static final long VAR_DELETE_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **UNKNOWN\_COMPRESSION**

```
static final long UNKNOWN_COMPRESSION
```

**See Also:**

[Constant Field Values](#)

---

## **CANNOT\_COMPRESS**

```
static final long CANNOT_COMPRESS
```

**See Also:**

[Constant Field Values](#)

---

## **DECOMPRESSION\_ERROR**

```
static final long DECOMPRESSION_ERROR
```

**See Also:**

[Constant Field Values](#)

## COMPRESSION\_ERROR

static final long COMPRESSION\_ERROR

See Also:

[Constant Field Values](#)

---

## EMPTY\_COMPRESSED\_CDF

static final long EMPTY\_COMPRESSED\_CDF

See Also:

[Constant Field Values](#)

---

## BAD\_COMPRESSION\_PARM

static final long BAD\_COMPRESSION\_PARM

See Also:

[Constant Field Values](#)

---

## UNKNOWN\_SPARSENESS

static final long UNKNOWN\_SPARSENESS

See Also:

[Constant Field Values](#)

---

## CANNOT\_SPARSERECORDS

static final long **CANNOT\_SPARSERECORDS**

**See Also:**

[Constant Field Values](#)

---

## **CANNOT\_SPARSEARRAYS**

static final long **CANNOT\_SPARSEARRAYS**

**See Also:**

[Constant Field Values](#)

---

## **TOO\_MANY\_PARMS**

static final long **TOO\_MANY\_PARMS**

**See Also:**

[Constant Field Values](#)

---

## **NO\_SUCH\_RECORD**

static final long **NO\_SUCH\_RECORD**

**See Also:**

[Constant Field Values](#)

---

## **CANNOT\_ALLOCATE\_RECORDS**

static final long **CANNOT\_ALLOCATE\_RECORDS**

**See Also:**

[Constant Field Values](#)

## **CANNOT\_COPY**

static final long **CANNOT\_COPY**

**See Also:**

[Constant Field Values](#)

---

## **SCRATCH\_DELETE\_ERROR**

static final long **SCRATCH\_DELETE\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## **SCRATCH\_CREATE\_ERROR**

static final long **SCRATCH\_CREATE\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## **SCRATCH\_READ\_ERROR**

static final long **SCRATCH\_READ\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## **SCRATCH\_WRITE\_ERROR**

static final long **SCRATCH\_WRITE\_ERROR**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_SPARSEARRAYS\_PARM**

static final long **BAD\_SPARSEARRAYS\_PARM**

**See Also:**

[Constant Field Values](#)

---

## **BAD\_SCRATCH\_DIR**

static final long **BAD\_SCRATCH\_DIR**

**See Also:**

[Constant Field Values](#)

---

## **DATATYPE\_MISMATCH**

static final long **DATATYPE\_MISMATCH**

**See Also:**

[Constant Field Values](#)

---

## **NOT\_A\_CDF\_OR\_NOT\_SUPPORTED**

static final long **NOT\_A\_CDF\_OR\_NOT\_SUPPORTED**

**See Also:**

[Constant Field Values](#)

---

## **CORRUPTED\_V3\_CDF**

```
static final long CORRUPTED_V3_CDF
```

**See Also:**

[Constant Field Values](#)

---

## **ILLEGAL\_EPOCH\_FIELD**

```
static final long ILLEGAL_EPOCH_FIELD
```

**See Also:**

[Constant Field Values](#)

---

## **BAD\_CHECKSUM**

```
static final long BAD_CHECKSUM
```

**See Also:**

[Constant Field Values](#)

---

## **CHECKSUM\_ERROR**

```
static final long CHECKSUM_ERROR
```

**See Also:**

[Constant Field Values](#)

---



## CHECKSUM\_NOT\_ALLOWED

```
static final long CHECKSUM_NOT_ALLOWED
```

**See Also:**

[Constant Field Values](#)

---

## IS\_A\_NETCDF

```
static final long IS_A_NETCDF
```

**See Also:**

[Constant Field Values](#)

---

## TT2000\_TIME\_ERROR

```
static final long TT2000_TIME_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## UNABLE\_TO\_PROCESS\_CDF

```
static final long UNABLE_TO_PROCESS_CDF
```

**See Also:**

[Constant Field Values](#)

---

## ZLIB\_COMPRESS\_ERROR

```
static final long ZLIB_COMPRESS_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **ZLIB\_UNCOMPRESS\_ERROR**

```
static final long ZLIB_UNCOMPRESS_ERROR
```

**See Also:**

[Constant Field Values](#)

---

## **CANNOT\_INSERT\_RECORDS**

```
static final long CANNOT_INSERT_RECORDS
```

**See Also:**

[Constant Field Values](#)

---

## **TT2000\_USED\_OUTDATED\_TABLE**

```
static final long TT2000_USED_OUTDATED_TABLE
```

**See Also:**

[Constant Field Values](#)

---

## **CREATE\_**

```
static final long CREATE_
```

**See Also:**

[Constant Field Values](#)

---

## **OPEN\_**

static final long **OPEN\_**

**See Also:**

[Constant Field Values](#)

---

## **DELETE\_**

static final long **DELETE\_**

**See Also:**

[Constant Field Values](#)

---

## **CLOSE\_**

static final long **CLOSE\_**

**See Also:**

[Constant Field Values](#)

---

## **SELECT\_**

static final long **SELECT\_**

**See Also:**

[Constant Field Values](#)

---

## **CONFIRM\_**

static final long **CONFIRM\_**

**See Also:**

[Constant Field Values](#)

---

**GET\_**

static final long **GET\_**

**See Also:**

[Constant Field Values](#)

---

**PUT\_**

static final long **PUT\_**

**See Also:**

[Constant Field Values](#)

---

**SAVE\_**

static final long **SAVE\_**

**See Also:**

[Constant Field Values](#)

---

**BACKWARD\_**

static final long **BACKWARD\_**

**See Also:**

[Constant Field Values](#)

## **GETCDFFILEBACKWARD\_**

static final long **GETCDFFILEBACKWARD\_**

**See Also:**

[Constant Field Values](#)

---

## **CHECKSUM\_**

static final long **CHECKSUM\_**

**See Also:**

[Constant Field Values](#)

---

## **GETCDFCHECKSUM\_**

static final long **GETCDFCHECKSUM\_**

**See Also:**

[Constant Field Values](#)

---

## **VALIDATE\_**

static final long **VALIDATE\_**

**See Also:**

[Constant Field Values](#)

---

## **GETCDFVALIDATE\_**

static final long **GETCDFVALIDATE\_**

**See Also:**

[Constant Field Values](#)

---

**GETLEAPSECONDSENVVAR\_**

static final long **GETLEAPSECONDSENVVAR\_**

**See Also:**

[Constant Field Values](#)

---

**NULL\_**

static final long **NULL\_**

**See Also:**

[Constant Field Values](#)

---

**CDF\_**

static final long **CDF\_**

**See Also:**

[Constant Field Values](#)

---

**CDF\_NAME\_**

static final long **CDF\_NAME\_**

**See Also:**

[Constant Field Values](#)

## **CDF\_ENCODING\_**

static final long **CDF\_ENCODING\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_DECODING\_**

static final long **CDF\_DECODING\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_MAJORITY\_**

static final long **CDF\_MAJORITY\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_FORMAT\_**

static final long **CDF\_FORMAT\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_COPYRIGHT\_**

static final long **CDF\_COPYRIGHT\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_NUMrVARS\_**

static final long **CDF\_NUMrVARS\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_NUMzVARS\_**

static final long **CDF\_NUMzVARS\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_NUMATTRS\_**

static final long **CDF\_NUMATTRS\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_NUMgATTRS\_**

static final long **CDF\_NUMgATTRS\_**

**See Also:**



[Constant Field Values](#)

---

## **CDF\_NUMvATTRS\_**

static final long CDF\_NUMvATTRS\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_VERSION\_**

static final long CDF\_VERSION\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_RELEASE\_**

static final long CDF\_RELEASE\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_INCREMENT\_**

static final long CDF\_INCREMENT\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_STATUS\_**

```
static final long CDF_STATUS_
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_READONLY\_MODE\_**

```
static final long CDF_READONLY_MODE_
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_zMODE\_**

```
static final long CDF_zMODE_
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_NEGtoPOSfp0\_MODE\_**

```
static final long CDF_NEGtoPOSfp0_MODE_
```

**See Also:**

[Constant Field Values](#)

---

## **LIB\_COPYRIGHT\_**

```
static final long LIB_COPYRIGHT_
```

**See Also:**

[Constant Field Values](#)

---

## **LIB\_VERSION\_**

```
static final long LIB_VERSION_
```

**See Also:**

[Constant Field Values](#)

---

## **LIB\_RELEASE\_**

```
static final long LIB_RELEASE_
```

**See Also:**

[Constant Field Values](#)

---

## **LIB\_INCREMENT\_**

```
static final long LIB_INCREMENT_
```

**See Also:**

[Constant Field Values](#)

---

## **LIB\_subINCREMENT\_**

```
static final long LIB_subINCREMENT_
```

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_NUMDIMS\_**

```
static final long rVARs_NUMDIMS_
```

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_DIMSIZES\_**

```
static final long rVARs_DIMSIZES_
```

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_MAXREC\_**

```
static final long rVARs_MAXREC_
```

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_RECDATA\_**

```
static final long rVARs_RECDATA_
```

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_RECNUMBER\_**

```
static final long rVARs_RECNUMBER_
```

**See Also:**

[Constant Field Values](#)

---

**rVARs\_RECCOUNT\_**

static final long **rVARs\_RECCOUNT\_**

**See Also:**

[Constant Field Values](#)

---

**rVARs\_RECINTERVAL\_**

static final long **rVARs\_RECINTERVAL\_**

**See Also:**

[Constant Field Values](#)

---

**rVARs\_DIMINDICES\_**

static final long **rVARs\_DIMINDICES\_**

**See Also:**

[Constant Field Values](#)

---

**rVARs\_DIMCOUNTS\_**

static final long **rVARs\_DIMCOUNTS\_**

**See Also:**

[Constant Field Values](#)

## **rVARs\_DIMINTERVALS\_**

static final long **rVARs\_DIMINTERVALS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_**

static final long **rVAR\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_NAME\_**

static final long **rVAR\_NAME\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_DATATYPE\_**

static final long **rVAR\_DATATYPE\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_NUMELEMS\_**

static final long **rVAR\_NUMELEMS\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_RECVARY\_**

static final long **rVAR\_RECVARY\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_DIMVARYS\_**

static final long **rVAR\_DIMVARYS\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_NUMBER\_**

static final long **rVAR\_NUMBER\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_DATA\_**

static final long **rVAR\_DATA\_**

**See Also:**

[Constant Field Values](#)

## **rVAR\_HYPERDATA\_**

static final long **rVAR\_HYPERDATA\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_SEQDATA\_**

static final long **rVAR\_SEQDATA\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_SEQPOS\_**

static final long **rVAR\_SEQPOS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_MAXREC\_**

static final long **rVAR\_MAXREC\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_MAXallocREC\_**



static final long **rVAR\_MAXallocREC\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_DATASPEC\_**

static final long **rVAR\_DATASPEC\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_PADVALUE\_**

static final long **rVAR\_PADVALUE\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_INITIALRECS\_**

static final long **rVAR\_INITIALRECS\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_BLOCKINGFACTOR\_**

static final long **rVAR\_BLOCKINGFACTOR\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_nINDEXRECORDS\_**

static final long **rVAR\_nINDEXRECORDS\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_nINDEXENTRIES\_**

static final long **rVAR\_nINDEXENTRIES\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_EXISTENCE\_**

static final long **rVAR\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

**zVARs\_MAXREC\_**

static final long **zVARs\_MAXREC\_**

**See Also:**

[Constant Field Values](#)

---

## **zVARs\_RECDATA\_**

static final long **zVARs\_RECDATA\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_**

static final long **zVAR\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_NAME\_**

static final long **zVAR\_NAME\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_DATATYPE\_**

static final long **zVAR\_DATATYPE\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_NUMELEMS\_**

static final long **zVAR\_NUMELEMS\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_NUMDIMS\_**

static final long **zVAR\_NUMDIMS\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_DIMSIZES\_**

static final long **zVAR\_DIMSIZES\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RECVARY\_**

static final long **zVAR\_RECVARY\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_DIMVARYS\_**

static final long **zVAR\_DIMVARYS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_NUMBER\_**

static final long **zVAR\_NUMBER\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_DATA\_**

static final long **zVAR\_DATA\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_HYPERDATA\_**

static final long **zVAR\_HYPERDATA\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_SEQDATA\_**

static final long **zVAR\_SEQDATA\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_SEQPOS\_**

static final long **zVAR\_SEQPOS\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_MAXREC\_**

static final long **zVAR\_MAXREC\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_MAXallocREC\_**

static final long **zVAR\_MAXallocREC\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_DATASPEC\_**

static final long **zVAR\_DATASPEC\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_PADVALUE\_**

static final long **zVAR\_PADVALUE\_**

**See Also:**

[Constant Field Values](#)

## **zVAR\_INITIALRECS\_**

static final long **zVAR\_INITIALRECS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_BLOCKINGFACTOR\_**

static final long **zVAR\_BLOCKINGFACTOR\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_nINDEXRECORDS\_**

static final long **zVAR\_nINDEXRECORDS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_nINDEXENTRIES\_**

static final long **zVAR\_nINDEXENTRIES\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_EXISTENCE\_**

static final long **zVAR\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RECNUMBER\_**

static final long **zVAR\_RECNUMBER\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RECCOUNT\_**

static final long **zVAR\_RECCOUNT\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RECINTERVAL\_**

static final long **zVAR\_RECINTERVAL\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_DIMINDICES\_**

static final long **zVAR\_DIMINDICES\_**

**See Also:**

[Constant Field Values](#)



## **zVAR\_DIMCOUNTS\_**

static final long **zVAR\_DIMCOUNTS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_DIMINTERVALS\_**

static final long **zVAR\_DIMINTERVALS\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_**

static final long **ATTR\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_SCOPE\_**

static final long **ATTR\_SCOPE\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_NAME\_**

static final long **ATTR\_NAME\_**

**See Also:**

[Constant Field Values](#)

---

**ATTR\_NUMBER\_**

static final long **ATTR\_NUMBER\_**

**See Also:**

[Constant Field Values](#)

---

**ATTR\_MAXgENTRY\_**

static final long **ATTR\_MAXgENTRY\_**

**See Also:**

[Constant Field Values](#)

---

**ATTR\_NUMgENTRIES\_**

static final long **ATTR\_NUMgENTRIES\_**

**See Also:**

[Constant Field Values](#)

---

**ATTR\_MAXrENTRY\_**

static final long **ATTR\_MAXrENTRY\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_NUMrENTRIES\_**

static final long **ATTR\_NUMrENTRIES\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_MAXzENTRY\_**

static final long **ATTR\_MAXzENTRY\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_NUMzENTRIES\_**

static final long **ATTR\_NUMzENTRIES\_**

**See Also:**

[Constant Field Values](#)

---

## **ATTR\_EXISTENCE\_**

static final long **ATTR\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

## **gENTRY\_**

static final long **gENTRY\_**

### **See Also:**

[Constant Field Values](#)

---

## **gENTRY\_EXISTENCE\_**

static final long **gENTRY\_EXISTENCE\_**

### **See Also:**

[Constant Field Values](#)

---

## **gENTRY\_DATATYPE\_**

static final long **gENTRY\_DATATYPE\_**

### **See Also:**

[Constant Field Values](#)

---

## **gENTRY\_NUMELEMS\_**

static final long **gENTRY\_NUMELEMS\_**

### **See Also:**

[Constant Field Values](#)

---

## **gENTRY\_DATASPEC\_**

static final long **gENTRY\_DATASPEC\_**

**See Also:**

[Constant Field Values](#)

---

## **gENTRY\_DATA\_**

static final long **gENTRY\_DATA\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_**

static final long **rENTRY\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_NAME\_**

static final long **rENTRY\_NAME\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_EXISTENCE\_**

static final long **rENTRY\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_DATATYPE\_**

static final long **rENTRY\_DATATYPE\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_NUMELEMS\_**

static final long **rENTRY\_NUMELEMS\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_DATASPEC\_**

static final long **rENTRY\_DATASPEC\_**

**See Also:**

[Constant Field Values](#)

---

## **rENTRY\_DATA\_**

static final long **rENTRY\_DATA\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_**

static final long **zENTRY\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_NAME\_**

static final long **zENTRY\_NAME\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_EXISTENCE\_**

static final long **zENTRY\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_DATATYPE\_**

static final long **zENTRY\_DATATYPE\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_NUMELEMS\_**

static final long **zENTRY\_NUMELEMS\_**

**See Also:**

[Constant Field Values](#)

## **zENTRY\_DATASPEC\_**

static final long **zENTRY\_DATASPEC\_**

**See Also:**

[Constant Field Values](#)

---

## **zENTRY\_DATA\_**

static final long **zENTRY\_DATA\_**

**See Also:**

[Constant Field Values](#)

---

## **STATUS\_TEXT\_**

static final long **STATUS\_TEXT\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_CACHESIZE\_**

static final long **CDF\_CACHESIZE\_**

**See Also:**

[Constant Field Values](#)

---

## **rVARs\_CACHESIZE\_**



static final long **rVARs\_CACHESIZE\_**

**See Also:**

[Constant Field Values](#)

---

**zVARs\_CACHESIZE\_**

static final long **zVARs\_CACHESIZE\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_CACHESIZE\_**

static final long **rVAR\_CACHESIZE\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_CACHESIZE\_**

static final long **zVAR\_CACHESIZE\_**

**See Also:**

[Constant Field Values](#)

---

**zVARs\_RECNUMBER\_**

static final long **zVARs\_RECNUMBER\_**

**See Also:**

[Constant Field Values](#)

## **rVAR\_ALLOCATERECS\_**

static final long **rVAR\_ALLOCATERECS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_ALLOCATERECS\_**

static final long **zVAR\_ALLOCATERECS\_**

**See Also:**

[Constant Field Values](#)

---

## **DATATYPE\_SIZE\_**

static final long **DATATYPE\_SIZE\_**

**See Also:**

[Constant Field Values](#)

---

## **CURgENTRY\_EXISTENCE\_**

static final long **CURgENTRY\_EXISTENCE\_**

**See Also:**

[Constant Field Values](#)

---

## **CURrENTRY\_EXISTENCE\_**

static final long CURrENTRY\_EXISTENCE\_

**See Also:**

[Constant Field Values](#)

---

## **CURzENTRY\_EXISTENCE\_**

static final long CURzENTRY\_EXISTENCE\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_INFO\_**

static final long CDF\_INFO\_

**See Also:**

[Constant Field Values](#)

---

## **CDF\_COMPRESSION\_**

static final long CDF\_COMPRESSION\_

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_COMPRESSION\_**

static final long zVAR\_COMPRESSION\_

**See Also:**

[Constant Field Values](#)

---

**zVAR\_SPARSERECORDS\_**

static final long **zVAR\_SPARSERECORDS\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_SPARSEARRAYS\_**

static final long **zVAR\_SPARSEARRAYS\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_ALLOCATEBLOCK\_**

static final long **zVAR\_ALLOCATEBLOCK\_**

**See Also:**

[Constant Field Values](#)

---

**zVAR\_NUMRECS\_**

static final long **zVAR\_NUMRECS\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_NUMAllocRECS\_**

static final long **zVAR\_NUMAllocRECS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_COMPRESSION\_**

static final long **rVAR\_COMPRESSION\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_SPARSERECORDS\_**

static final long **rVAR\_SPARSERECORDS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_SPARSEARRAYS\_**

static final long **rVAR\_SPARSEARRAYS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_ALLOCATEBLOCK\_**

static final long **rVAR\_ALLOCATEBLOCK\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_NUMRECS\_**

```
static final long rVAR_NUMRECS_
```

**See Also:**

[Constant Field Values](#)

---

**rVAR\_NUMAllocRECS\_**

```
static final long rVAR_NUMAllocRECS_
```

**See Also:**

[Constant Field Values](#)

---

**rVAR\_ALLOCATEDFROM\_**

```
static final long rVAR_ALLOCATEDFROM_
```

**See Also:**

[Constant Field Values](#)

---

**rVAR\_ALLOCATEDTO\_**

```
static final long rVAR_ALLOCATEDTO_
```

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_ALLOCATEDFROM\_**

static final long **zVAR\_ALLOCATEDFROM\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_ALLOCATEDTO\_**

static final long **zVAR\_ALLOCATEDTO\_**

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_nINDEXLEVELS\_**

static final long **zVAR\_nINDEXLEVELS\_**

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_nINDEXLEVELS\_**

static final long **rVAR\_nINDEXLEVELS\_**

**See Also:**

[Constant Field Values](#)

---

## **CDF\_SCRATCHDIR\_**

static final long **CDF\_SCRATCHDIR\_**

**See Also:**

[Constant Field Values](#)

---

**rVAR\_RESERVEPERCENT\_**

static final long rVAR\_RESERVEPERCENT\_

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RESERVEPERCENT\_**

static final long zVAR\_RESERVEPERCENT\_

**See Also:**

[Constant Field Values](#)

---

**rVAR\_RECORDS\_**

static final long rVAR\_RECORDS\_

**See Also:**

[Constant Field Values](#)

---

**zVAR\_RECORDS\_**

static final long zVAR\_RECORDS\_

**See Also:**

[Constant Field Values](#)



## **STAGE\_CACHESIZE\_**

```
static final long STAGE_CACHESIZE_
```

**See Also:**

[Constant Field Values](#)

---

## **COMPRESS\_CACHESIZE\_**

```
static final long COMPRESS_CACHESIZE_
```

**See Also:**

[Constant Field Values](#)

---

## **CDF\_CHECKSUM\_**

```
static final long CDF_CHECKSUM_
```

**See Also:**

[Constant Field Values](#)

---

## **rVAR\_RECORDS\_RENUMBER\_**

```
static final long rVAR_RECORDS_RENUMBER_
```

**See Also:**

[Constant Field Values](#)

---

## **zVAR\_RECORDS\_RENUMBER\_**

```
static final long zVAR_RECORDS_RENUMBER_
```

**See Also:**

[Constant Field Values](#)

---

**CDF\_LEAPSECONDLASTUPDATED\_**

```
static final long CDF_LEAPSECONDLASTUPDATED_
```

**See Also:**

[Constant Field Values](#)

---

**CDFwithSTATS\_**

```
static final long CDFwithSTATS_
```

**See Also:**

[Constant Field Values](#)

---

**CDF\_ACCESS\_**

```
static final long CDF_ACCESS_
```

**See Also:**

[Constant Field Values](#)

---

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[PREV CLASS](#) [NEXT CLASS](#)

[FRAMES](#) [NO FRAMES](#) [All Classes](#)

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

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

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[PREV CLASS](#) [NEXT CLASS](#)

[FRAMES](#) [NO FRAMES](#) [All Classes](#)

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

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

---

**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_INT8	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_EPOCH	java.lang.Double	Y/Y
CDF_EPOCH16	java.lang.Double[	Y/Y
CDF_TIME_TT2000	java.lang.Long	Y/Y
CDF_CHAR	java.lang.String	Y/Y
CDF_UCHAR	java.lang.String	Y/Y

**Version:**

1.0, 2.0 03/18/05 Selection of current attribute is done as part of operations passed to JNI. JNI call is synchronized so only one process is allowed in a JVM, due to multi-thread safety. The select method will never be called. Sync'd the CDF (id) for every JNI calls.

**See Also:**

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

---

## 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [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 EPOCH16 PADVALUE](#) , [DEFAULT FLOAT PADVALUE](#) ,  
[DEFAULT INT1 PADVALUE](#) , [DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,  
[DEFAULT INT8 PADVALUE](#) , [DEFAULT REAL4 PADVALUE](#) ,  
[DEFAULT REAL8 PADVALUE](#) , [DEFAULT TT2000 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](#) , [EPOCH4 STRING LEN](#) ,  
[EPOCH4 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,  
[FILLED TT2000 VALUE](#) , [FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY DATA](#) ,  
[gENTRY DATASPEC](#) , [gENTRY DATATYPE](#) , [gENTRY EXISTENCE](#) ,  
[gENTRY NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
[GETCDFVALIDATE](#) , [GETLEAPSECONDSENVVAR](#) , [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](#) , [ILLEGAL TT2000 VALUE](#) , [IS A NETCDF](#) ,  
[LIB COPYRIGHT](#) , [LIB INCREMENT](#) , [LIB RELEASE](#) , [LIB subINCREMENT](#) ,  
[LIB VERSION](#) , [MAC DECODING](#) , [MAC ENCODING](#) , [MD5 CHECKSUM](#) , [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 CHECKSUM](#) , [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](#) , [NONE CHECKSUM](#) , [NOT A CDF](#) ,  
[NOT A CDF OR NOT SUPPORTED](#) , [NOVARY](#) , [NULL](#) , [OPEN](#) ,  
[OPTIMAL ENCODING TREES](#) , [OTHER CHECKSUM](#) , [PAD SPARSERECORDS](#) ,  
[PPC DECODING](#) , [PPC ENCODING](#) , [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 RECORDS RENUMBER](#), [rVAR REC VARY](#), [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](#), [TT2000 0 STRING LEN](#), [TT2000 1 STRING LEN](#), [TT2000 2 STRING LEN](#), [TT2000 3 STRING LEN](#), [TT2000 CDF MAYNEEDUPDATE](#), [TT2000 TIME ERROR](#), [TT2000 USED OUTDATED TABLE](#), [UNABLE TO PROCESS CDF](#), [UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#), [VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#), [VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#), [VAR READ ERROR](#), [VAR SAVE 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](#), [ZLIB COMPRESS ERROR](#), [ZLIB UNCOMPRESS ERROR](#), [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\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [zVAR\\_RESERVEPERCENT](#) ,  
[zVAR\\_SEQDATA](#) , [zVAR\\_SEQPOS](#) , [zVAR\\_SPARSEARRAYS](#) ,  
[zVAR\\_SPARSERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Method Summary

void	<a href="#">close</a> ( ) Closes this CDF file.
long	<a href="#">confirmCDFCacheSize</a> ( ) Gets the CDF cache size (the number of 512-byte cache buffers) set for this CDF.
long	<a href="#">confirmCompressCacheSize</a> ( ) Gets the number of 512-byte cache buffers being used for the compression scratch file (for the current CDF).
long	<a href="#">confirmDecoding</a> ( ) Gets the CDF decoding method defined for this CDF.
long	<a href="#">confirmNegtoPosfp0</a> ( ) Gets the -0.0 to 0.0 translation flag set for this CDF.
long	<a href="#">confirmReadOnlyMode</a> ( ) Gets the value of the read-only mode flag set for this CDF file.
long	<a href="#">confirmStageCacheSize</a> ( ) Gets the number of 512-byte cache buffers defined for the staging scratch file.
long	<a href="#">confirmzMode</a> ( ) Gets the zMode set for this CDF.
static <a href="#">CDF</a>	<a href="#">create</a> ( java.lang.String path) Creates a CDF file in the current directory.
static <a href="#">CDF</a>	<a href="#">create</a> ( java.lang.String path, int flag) <b>Deprecated.</b> Use <i>setFileBackward(long)</i> method to set the file backward flag and <i>create(String)</i> to create file instead.



void	<a href="#"><b>delete</b></a> ( ) Deletes this CDF file.
void	<a href="#"><b>finalize</b></a> ( ) Do the necessary cleanup when garbage collector reaps it.
<a href="#">Attribute</a>	<a href="#"><b>getAttribute</b></a> (long attrNum) Gets the attribute for the given attribute number.
<a href="#">Attribute</a>	<a href="#"><b>getAttribute</b></a> (java.lang.String attrName) Gets the attribute for the given attribute name.
long	<a href="#"><b>getAttributeID</b></a> (java.lang.String attrName) Gets the id of the given attribute.
java.util. Vector	<a href="#"><b>getAttributes</b></a> ( ) Gets all the global and variable attributes defined for this CDF.
long	<a href="#"><b>getChecksum</b></a> ( ) Gets the checksum method, if any, applied to the CDF.
static long	<a href="#"><b>getChecksumEnvVar</b></a> ( ) Gets the value of the CDF_CHECKSUM environment variable.
java.lang. String	<a href="#"><b>getCompression</b></a> ( ) Gets the string representation of the compression type and parameters defined for this CDF.
long[]	<a href="#"><b>getCompressionParms</b></a> ( ) Gets the compression parameters set for this CDF.
long	<a href="#"><b>getCompressionPct</b></a> ( ) Gets the compression percentage set for this CDF.
long	<a href="#"><b>getCompressionType</b></a> ( ) Gets the compression type set for this CDF.
java.lang. String	<a href="#"><b>getCopyright</b></a> ( ) Gets the CDF copyright statement for this CDF.
<a href="#">CDFDelegate</a>	<a href="#"><b>getDelegate</b></a> ( ) This is a placeholder for future expansions/extensions.
long	<a href="#"><b>getEncoding</b></a> ( ) Gets the encoding method defined for this CDF.
static boolean	<a href="#"><b>getFileBackward</b></a> ( ) Gets the file backward flag.

static int	<a href="#"><u>getFileBackwardEnvVar</u></a> ( ) Gets the value of the CDF_FILEBACKWARD environment variable.
long	<a href="#"><u>getFormat</u></a> ( ) Gets the CDF format defined for this CDF.
java.util. Vector	<a href="#"><u>getGlobalAttributes</u></a> ( ) Gets the global attributes defined for this CDF.
long	<a href="#"><u>getID</u></a> ( ) Gets the id of this CDF file.
long	<a href="#"><u>getLeapSecondLastUpdated</u></a> ( ) Gets the date that the CDF has the last leap second updated.
static java. lang.String	<a href="#"><u>getLeapSecondsTableEnvVar</u></a> ( ) Gets the the CDF_LEAPSECONDSTABLE (or CDF \$LEAPSECONDSTABLE on VMS) environment variable.
static java. lang.String	<a href="#"><u>getLibraryCopyright</u></a> ( ) Retrieve library copyright information associated with the CDF library.
static java. lang.String	<a href="#"><u>getLibraryVersion</u></a> ( ) Retrieve library version/release/increment/sub_increment information associated with the CDF library.
long	<a href="#"><u>getMajority</u></a> ( ) Gets the variable majority defined for this CDF.
java.lang. String	<a href="#"><u>getName</u></a> ( ) Gets the name of this CDF.
long	<a href="#"><u>getNumAttrs</u></a> ( ) Gets the total number of global and variable attributes in this CDF.
long	<a href="#"><u>getNumGattrs</u></a> ( ) Gets the number of global attributes in this CDF.
long	<a href="#"><u>getNumRvars</u></a> ( ) Gets the number of r variables.
long	<a href="#"><u>getNumVars</u></a> ( ) Gets the number of Z variables defined for this CDF.
long	<a href="#"><u>getNumVattrs</u></a> ( ) Gets the number of variable attributes in this CDF.

long	<a href="#"><u>getNumZvars</u></a> ( ) Gets the number of z variables in this CDF file.
java.util. Vector	<a href="#"><u>getOrphanAttributes</u></a> ( ) Gets the variable attributes defined for this CDF that are not associated with any variables.
java.util. Vector	<a href="#"><u>getRecord</u></a> (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	<a href="#"><u>getRecord</u></a> (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	<a href="#"><u>getRecord</u></a> (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	<a href="#"><u>getRecord</u></a> (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	<a href="#"><u>getStatus</u></a> ( ) Gets the status of the most recent CDF JNI/library function call.
static java. lang.String	<a href="#"><u>getStatusText</u></a> (long statusCode) Gets the status text of the most recent CDF JNI/library function call.
static boolean	<a href="#"><u>getValidate</u></a> ( ) Gets the file validation mode.
<a href="#"><u>Variable</u></a>	<a href="#"><u>getVariable</u></a> (long varNum) Gets the variable object for the given variable number.
<a href="#"><u>Variable</u></a>	<a href="#"><u>getVariable</u></a> (java.lang.String varName) Gets the variable object for the given variable name.
java.util. Vector	<a href="#"><u>getVariableAttributes</u></a> ( ) Gets the variable attributes defined for this CDF.
long	<a href="#"><u>getVariableID</u></a> (java.lang.String varName) Gets the ID of the given variable.
java.util. Vector	<a href="#"><u>getVariables</u></a> ( ) Gets the z variables defined for this CDF.

java.lang. String	<a href="#"><u>getVersion()</u></a> Gets the CDF library version that was used to create this CDF (e.g. 2.6.7, etc.).
static <a href="#"><u>CDF</u></a>	<a href="#"><u>open</u></a> (java.lang.String path) Open a CDF file for read/write, the default mode for opening a CDF.
static <a href="#"><u>CDF</u></a>	<a href="#"><u>open</u></a> (java.lang.String path, long readOnly) Open a CDF file.
void	<a href="#"><u>putRecord</u></a> (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	<a href="#"><u>putRecord</u></a> (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	<a href="#"><u>putRecord</u></a> (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	<a href="#"><u>putRecord</u></a> (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.
void	<a href="#"><u>rename</u></a> (java.lang.String path) Renames the current CDF.
void	<a href="#"><u>save</u></a> () Saves this CDF file without closing.
void	<a href="#"><u>selectCDFCacheSize</u></a> (long cacheSize) Defines the number of 512-byte cache buffers to be used for the dotCDF file (for the current CDF).
void	<a href="#"><u>selectCompressCacheSize</u></a> (long compressCacheSize) Sets the number of 512-byte cache buffers to be used for the compression scratch file (for the current CDF).
void	<a href="#"><u>selectDecoding</u></a> (long decoding) Defines the CDF decoding method to be used for this CDF.

void	<a href="#"><u>selectNegtoPosfp0</u></a> (long negtoPosfp0) Defines whether to translate -0.0 to 0.0 for reading or writing.
void	<a href="#"><u>selectReadOnlyMode</u></a> (long readOnly) Sets the desired read-only mode.
void	<a href="#"><u>selectStageCacheSize</u></a> (long stageCacheSize) Sets the number of 512-byte cache buffers to be used for the staging scratch file (for the current CDF).
void	<a href="#"><u>setChecksum</u></a> (long checksum) Specifies the checksum option applied to the CDF.
void	<a href="#"><u>setCompression</u></a> (long cType, long[] cParms) Sets the compression type and parameters for this CDF.
void	<a href="#"><u>setDelegate</u></a> ( <a href="#"><u>CDFDelegate</u></a> delegate) This is a placeholder for future expansions/extensions.
void	<a href="#"><u>setEncoding</u></a> (long encoding) Defines the encoding method to be used for this CDF.
static void	<a href="#"><u>setFileBackward</u></a> (long flag) Sets the file backward flag so that when a new CDF file is created, it will be created in either in the older V2.7 version or the current library version, i.e., V3.*.
void	<a href="#"><u>setFormat</u></a> (long format) Specifies the format of this CDF.
void	<a href="#"><u>setInfoWarningOff</u></a> ( ) Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function off.
void	<a href="#"><u>setInfoWarningOn</u></a> ( ) Sets the informational (status code > 0) or warning messages (status code between -1 and -2000) coming from the CDF JNI/library function on.
void	<a href="#"><u>setLeapSecondLastUpdated</u></a> (long lastUpdated) Set the leap second last updated for this CDF.
void	<a href="#"><u>setMajority</u></a> (long majority) Sets the variable majority for this CDF.
static void	<a href="#"><u>setValidate</u></a> (long mode) Sets the file validation mode so that when a CDF file is open, it will be validated accordingly.

java.lang. String	<a href="#">toString()</a> Gets the name of this CDF.
long	<a href="#">verifyChecksum()</a> Verifies the data integrity of the CDF file from its checksum.

### Methods inherited from class java.lang.Object

`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 and it's the preferred format. However, if the user wants to create a multi-file CDF, its file format needs to be changed as following:

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

For the single-file format CDF, the above example 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. **Notes:**

The newly created file will be of the same version as the CDF library, as a V3.\*. To create a backward file, i.e., V2.7, there are two options that can be used. Use the static method `setFileBackward` to set the backward flag. The following example will create backward file for test1.cdf and test2.cdf, but a V3.\* file for test3.cdf.

```
CDF cdf1, cdf2, cdf3;
CDF.setFileBackward(BACKWARDFILEon);
cdf1 = CDF.create("test1");
cdf2 = CDF.create("test2");
CDF.setFileBackward(BACKWARDFILEoff);
cdf3 = CDF.create("test3");
```

Alternatively, use an environment variable to control the backward file creation. The environment variable `CDF_FILEBACKWARD` on Unix or Windows or `CDF$FILEBACKWARD` on Open/VMS is used. When it is set to `TRUE`, a V2.7 file(s) will be created automatically. In the following example, both `test1.cdf` and `test2.cdf` will be V2.7 if environment variable `CDF_FILEBACKWARD` (or `CDF$FILEBACKWARD`) is `TRUE`.

```
CDF cdf1 = CDF.create("test1");
CDF cdf2 = CDF.create("test2");
```

**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

## create

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

**Deprecated.** Use *setFileBackward(long)* method to set the file backward flag and *create(String)* to create file instead.

Creates a CDF file in the current directory. By default, a single-file CDF is created and it's the preferred format. The following example will create a CDF file:

```
CDF cdf = null;
cdf = CDF.create("test", 0);
```

For the single-file format CDF, the above example would have created a single-file CDF called 'test.cdf'. The newly created file will be of the same version as the CDF library, To create a backward file, i.e., V2.7, use a differnt argument for the flag.

```
CDF cdf;  
cdf = CDF.create("test", 1);
```

**Parameters:**

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

flag the file backward indicator flag. Passed 0 if a file of current library version is to be created. Not 0 if a backward is 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)  
    throws CDFException
```

Open a CDF file for read/write, the default mode for opening a CDF. If the user wants only to read the file, the file must be opened in read-only mode as following:

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

Note: Opening a file with read/write mode will cause the checksum signature to be recomputed every time the file is closed. (NEW) Each open CDF file is subjected to a default data validating process (some overheads) that will perform sanity checks. To overwrite it, you can use one of two ways: 1) Use the CDF static method `setValidate` before calling the open method: `CDF.setValidate (VALIDATEFILEoff)`; 2) Set the environment variable `CDF_VALIDATE` (`CDF $VALIDATE` on VMS) to no

**Parameters:**

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

**Returns:**

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



**Throws:**

[CDFException](#) - if there was a major problem opening a file Not always that a CDFException will be thrown. It is good practice to check the status from this open method to see if some others problems, e.g., invalid checksum is being detected, may occur. Use something like the followings

```

        if (cdf.getStatus() != CDF_OK)
        {
            if (cdf.getStatus() == CHECKSUM_ERROR)
                .....
        }

```

where cdf is the returned object from the open method. It is up to each individual to determine whether to continue to use a CDF file with an error like checksum.

---

**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 major problem opening a file Not always that a CDFException will be thrown. It is good practice to check the status from this open method to see if some others problems, e.g., invalid checksum is being detected, may occur. Use something like the followings

```
if (cdf.getStatus() != CDF_OK)
{
    if (cdf.getStatus() == CHECKSUM_ERROR)
        .....
}
```

where cdf is the returned object from the open method. It is up to each individual to determine whether to continue to use a CDF file with an error like checksum.

---

## 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 `IBMP_C_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`
- `IBMP_C_ENCODING`
- `IBMRS_ENCODING`
- `PPC_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`
- `PPC_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. Caveat: Arbitrary changing the read-only mode to READONLYon while doing writing/updating will cause a problem to the file if the checksum bit is turned on (as the checksum signature may not get updated and a warning for data integrity will be issued when the file is open later).

**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

---

## setFileBackward

```
public static void setFileBackward(long flag)
    throws CDFException
```

Sets the file backward flag so that when a new CDF file is created, it will be created in either in the older V2.7 version or the current library version, i.e., V3.\*. It only works for V3.\* library. Setting this flag will overwrite environment variable CDF\_FILEBACKWARD (or CDF \$FILEBACKWARD on OpenVMS) if it is set. All CDF files created after this static method call will be affected.

### Parameters:

`flag` - The flag indicates whether to create a new CDF(s) in the backward version. `BACKWARDFILEon` means a backward file(s) is to be created and `BACKWARDFILEoff` means a V3.\* file(s) is to be created.

### Throws:

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

---

## getFileBackward

```
public static boolean getFileBackward()
```

Gets the file backward flag.

### Returns:

The flag indicating whether the CDF file was created in the older V2.7 version. It is only applicable for V3.\* library. Returns true if backward files are to be created, false otherwise.

---

## getFileBackwardEnvVar

```
public static int getFileBackwardEnvVar()
    throws CDFException
```

Gets the value of the CDF\_FILEBACKWARD environment variable.

**Returns:**

1 if the environment variable is set to true, 0 if not set or set to anything else.

**Throws:**

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

---

## getLeapSecondsTableEnvVar

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

Gets the the CDF\_LEAPSECONDSTABLE (or CDF\$LEAPSECONDSTABLE on VMS) environment variable.

**Returns:**

the string the environment variable is set to, null if not set

**Throws:**

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

---

## getChecksumEnvVar

```
public static long getChecksumEnvVar()  
                  throws CDFException
```

Gets the value of the CDF\_CHECKSUM environment variable.

**Returns:**

1 if the environment variable is set to MD5, 0 if not set or set to anything else.

**Throws:**

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

---

## setValidate

```
public static void setValidate(long mode)
    throws CDFException
```

Sets the file validation mode so that when a CDF file is open, it will be validated accordingly. Setting this flag will overwrite environment variable CDF\_VALIDATE (or CDF\$VALIDATE on OpenVMS) if it is set. All CDF files open after this static method call will be applied.

**Parameters:**

mode - The mode indicates whether to validate CDF(s) while open. **VALIDATEFILEon** means all files are subjected to be validated. **VALIDATEFILEoff** means no data validation will be performed.

**Throws:**

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

---

## getValidate

```
public static boolean getValidate()
```

Gets the file validation mode.

**Returns:**

The mode indicating whether the CDF file is to be validated when it is open. Returns true if it will be validated, false otherwise.

---

## 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, dimIndices, 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.

**Overrides:**

`toString` in class `java.lang.Object`

**Returns:**

the name of this CDF

---

## finalize

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

Do the necessary cleanup when garbage collector reaps it.

**Overrides:**

`finalize` in class `java.lang.Object`

**Throws:**

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

---

## getDelegate

```
public CDFDelegate getDelegate()
```

This is a placeholder for future expansions/extensions.

**Returns:**

CDFDelegate object

---

## setDelegate

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

This is a placeholder for future expansions/extensions.

---

## 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

---

## 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.

---

## 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
```

---

## setChecksum

```
public void setChecksum(long checksum)
    throws CDFException
```

Specifies the checksum option applied to the CDF.

### Parameters:

checksum - the checksum option to be used for this CDF. Currently, other than NO\_CHECKSUM option, only MD5\_CHECKSUM (using MD5 checksum algorithm) is supported.

### Throws:

[CDFException](#) - if there was a problem with the passed option, setting the checksum or other vital information from this CDF file.

---

## getChecksum

```
public long getChecksum()
```

Gets the checksum method, if any, applied to the CDF.

### Returns:

the checksum method used for this CDF. Currently, it returns NONE\_CHECKSUM (0) if

no checksum is used; MD5\_CHECKSUM (1) if MD5 method is used;

**Throws:**

[CDFException](#) - if there was a problem getting the checksum or other vital information from this CDF file

---

## setLeapSecondLastUpdated

```
public void setLeapSecondLastUpdated(long lastUpdated)
    throws CDFException
```

Set the leap second last updated for this CDF. Normally, a new CDF is created, this field is set automatically. Only to call this method if the CDF is based on an existing one.

**Parameters:**

lastUpdated - The last date that the leap second was updated. It is in YYYYMMDD form.

**Throws:**

[CDFException](#) - If a problem occurred in setting the desired field.

---

## getLeapSecondLastUpdated

```
public long getLeapSecondLastUpdated()
    throws CDFException
```

Gets the date that the CDF has the last leap second updated.

**Returns:**

the date in YYYYMMDD that the last leap second was updated when the CDF is based (relevant to TT2000 variables).

**Throws:**

[CDFException](#) - if there was a problem getting the data or other vital information from this CDF file

---

## verifyChecksum

```
public long verifyChecksum()  
           throws CDFException
```

Verifies the data integrity of the CDF file from its checksum.

**Returns:**

The status of data integrity check through its checksum. it should return CDF\_OK if the integrity check is fine. Or, it may return a value of CHECKSUM\_ERROR indicating the data integrity was compromised. Or, it may return other CDF error if it has problem reading the CDF data file(s). No need to use this method as when the file is open, its data integrity is automatically checked with the used checksum method.

**Throws:**

[CDFException](#) - if there was a problem getting the checksum or other vital information from this CDF file

---

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---

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.

**Version:**

1.0

**See Also:**
[CDFNativeLibrary](#)


---

### Method Summary

void	<a href="#">cdflib</a> ( <a href="#">CDF</a> theCDF, <a href="#">CDFObject</a> 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`**

```
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 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.

### Version:

1.0, 2.0 03/18/05 Selection of current CDF and variable are done as part of operations passed to JNI. JNI call is synchronized so only one process is allowed in a JVM, due to multi-thread safety. The select method will never be called., 3.0 06/09/09 The number of dimesions returned from the get method depends on the variable dimensions and dimesional elements: e.g., 2-dim (2x1 or 1x2) will have a 2-dim, not 1-dim, object returned, while 2-dim (1x1) returns an object of a single item, not an array.

### 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),

[CDF\\_zMODE](#) , [CDFwithSTATS](#) , [CHECKSUM](#) , [CHECKSUM\\_ERROR](#) ,  
[CHECKSUM NOT ALLOWED](#) , [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 EPOCH16 PADVALUE](#) , [DEFAULT FLOAT PADVALUE](#) ,  
[DEFAULT INT1 PADVALUE](#) , [DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,  
[DEFAULT INT8 PADVALUE](#) , [DEFAULT REAL4 PADVALUE](#) ,  
[DEFAULT REAL8 PADVALUE](#) , [DEFAULT TT2000 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](#) , [EPOCH4 STRING LEN](#) ,  
[EPOCH4 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,  
[FILLED TT2000 VALUE](#) , [FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY\\_DATA](#) ,  
[gENTRY DATASPEC](#) , [gENTRY DATATYPE](#) , [gENTRY EXISTENCE](#) ,  
[gENTRY NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
[GETCDFVALIDATE](#) , [GETLEAPSECONDSENVVAR](#) , [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](#) , [ILLEGAL TT2000 VALUE](#) , [IS A NETCDF](#) ,  
[LIB COPYRIGHT](#) , [LIB INCREMENT](#) , [LIB RELEASE](#) , [LIB subINCREMENT](#) ,  
[LIB VERSION](#) , [MAC DECODING](#) , [MAC ENCODING](#) , [MD5 CHECKSUM](#) , [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 CHECKSUM](#) , [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, NONE CHECKSUM, NOT A CDF,  
NOT A CDF OR NOT SUPPORTED, NOVARY, NULL, OPEN,  
OPTIMAL ENCODING TREES, OTHER CHECKSUM, PAD SPARSERECORDS,  
PPC DECODING, PPC ENCODING, 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 RECORDS RENUMBER, 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, TT2000 0 STRING LEN,  
TT2000 1 STRING LEN, TT2000 2 STRING LEN, TT2000 3 STRING LEN,  
TT2000 CDF MAYNEEDUPDATE, TT2000 TIME ERROR,  
TT2000 USED OUTDATED TABLE, UNABLE TO PROCESS CDF,  
UNKNOWN COMPRESSION, UNKNOWN SPARSENESS, UNSUPPORTED OPERATION,  
VALIDATE, VALIDATEFILEoff, VALIDATEFILEon, VAR ALREADY CLOSED,  
VAR CLOSE ERROR, VAR CREATE ERROR, VAR DELETE ERROR, VAR EXISTS,  
VAR NAME TRUNC, VAR OPEN ERROR, VAR READ ERROR, VAR SAVE 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,  
ZLIB COMPRESS ERROR, ZLIB UNCOMPRESS ERROR, 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\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [zVAR\\_RESERVEPERCENT](#) ,  
[zVAR\\_SEQDATA](#) , [zVAR\\_SEQPOS](#) , [zVAR\\_SPARSEARRAYS](#) ,  
[zVAR\\_SPARSERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Method Summary

void	<a href="#">delete()</a> See the description of the getName() method in this class.
void	<a href="#">dump()</a> Dump data information and values, one row at a time, to the stderr.
void	<a href="#">dumpData()</a> Dumps variable data, one row at a time per record.
java. lang. Object	<a href="#">getData()</a> Returns an object that is properly dimensioned.
long []	<a href="#">getDimCounts()</a> 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 []	<a href="#">getDimIndices()</a> Gets the starting dimension index within a record for a hyper get/put function.
long []	<a href="#">getDimIntervals()</a> 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[]	<a href="#">getDimSizes()</a> Gets the dimension sizes of this variable.

java. lang. String	<a href="#">getName</a> ( ) CDFData implements CDFObject to enable CDFDelegate calls.
int	<a href="#">getnDims</a> ( ) Gets the dimensionality of this variable.
java. lang. Object	<a href="#">getRawData</a> ( ) Returns an object of a 1-dimensional array, which presents a sequence of raw data values retrieved and presented by JNI from a CDF file.
long	<a href="#">getRecCount</a> ( ) Gets the number of records to read or write for a hyper get/put function.
long	<a href="#">getRecInterval</a> ( ) Gets the number of records to skip for a hyper get/put function.
long	<a href="#">getRecStart</a> ( ) Gets the record number at which a hyper get/put function starts.
void	<a href="#">rename</a> (java.lang.String name) See the description of the getName() method in this class.

### Methods inherited from class java.lang.Object

equals, 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

---

## getRawData

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

Returns an object of a 1-dimensional array, which presents a sequence of raw data values retrieved and presented by JNI from a CDF file. The data stream may or may not reflect how the data is stored in the file, depending the file majority. It is up to the calling application to decipher the data stream. Note: for column-major CDF files, the sequence of the returned data stream is reordered so data can be properly assigned into Java's arrays. Normally, `getData` method should be called so the retrieved data are properly dimensioned.

The following example retrieves the 2-D Temperature data. The user should know how to organize the data, e.g., number of records, row/column major, data type, data value sequence, etc.

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

**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

---

**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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[gsfc.nssdc.cdf.util](#)

Classes

[CDFTT2000](#)

[CDFUtils](#)

[Epoch](#)

[Epoch16](#)

[EpochNative](#)

---

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---

## Package gsfc.nssdc.cdf.util

### Class Summary

<a href="#">CDFTT2000</a>	This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF_TIME_TT2000 data type.
<a href="#">CDFUtils</a>	This class contains the handy utility routines (methods) called by the core CDF Java APIs.
<a href="#">Epoch</a>	This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF_EPOCH data type.
<a href="#">Epoch16</a>	This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF_EPOCH16 data type.
<a href="#">EpochNative</a>	The Epoch class is a Java wrapper to the CDF epoch handling routines.

---

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---

## Hierarchy For Package gsfc.nssdc.cdf.util

### Package Hierarchies:

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## Class Hierarchy

- java.lang.Object
  - gsfc.nssdc.cdf.util.[CDFTT2000](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[CDFUtils](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[Epoch](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[Epoch16](#) (implements gsfc.nssdc.cdf.[CDFConstants](#))
  - gsfc.nssdc.cdf.util.[EpochNative](#)

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**gsfc.nssdc.cdf.util**

## Class CDFTT2000

java.lang.Object

└ **gsfc.nssdc.cdf.util.CDFTT2000**

### All Implemented Interfaces:

[CDFConstants](#)

---

```
public class CDFTT2000
```

```
extends java.lang.Object
```

```
implements CDFConstants
```

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF\_TIME\_TT2000 data type.

### Version:

1.0, 2.0 01/05/15 Add a new leap second for 2015/07/01.

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## 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [CLOSE](#), [COLUMN\\_MAJOR](#), [COMPRESS\\_CACHESIZE](#),  
[COMPRESSSION\\_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 EPOCH16 PADVALUE](#) , [DEFAULT FLOAT PADVALUE](#) ,  
[DEFAULT INT1 PADVALUE](#) , [DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,  
[DEFAULT INT8 PADVALUE](#) , [DEFAULT REAL4 PADVALUE](#) ,  
[DEFAULT REAL8 PADVALUE](#) , [DEFAULT TT2000 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](#) , [EPOCH4 STRING LEN](#) ,  
[EPOCH4 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,  
[FILLED TT2000 VALUE](#) , [FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY DATA](#) ,  
[gENTRY DATASPEC](#) , [gENTRY DATATYPE](#) , [gENTRY EXISTENCE](#) ,  
[gENTRY NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
[GETCDFVALIDATE](#) , [GETLEAPSECONDSENVVAR](#) , [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](#) , [ILLEGAL TT2000 VALUE](#) , [IS A NETCDF](#) ,  
[LIB COPYRIGHT](#) , [LIB INCREMENT](#) , [LIB RELEASE](#) , [LIB subINCREMENT](#) ,  
[LIB VERSION](#) , [MAC DECODING](#) , [MAC ENCODING](#) , [MD5 CHECKSUM](#) , [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 CHECKSUM](#) , [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](#) , [NONE CHECKSUM](#) , [NOT A CDF](#) ,  
[NOT A CDF OR NOT SUPPORTED](#) , [NOVARY](#) , [NULL](#) , [OPEN](#) ,  
[OPTIMAL ENCODING TREES](#) , [OTHER CHECKSUM](#) , [PAD SPARSERECORDS](#) ,  
[PPC DECODING](#) , [PPC ENCODING](#) , [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 RECORDS RENUMBER](#), [rVAR REC VARY](#),  
[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](#), [TT2000 0 STRING LEN](#),  
[TT2000 1 STRING LEN](#), [TT2000 2 STRING LEN](#), [TT2000 3 STRING LEN](#),  
[TT2000 CDF MAYNEEDUPDATE](#), [TT2000 TIME ERROR](#),  
[TT2000 USED OUTDATED TABLE](#), [UNABLE TO PROCESS CDF](#),  
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),  
[VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR ALREADY CLOSED](#),  
[VAR CLOSE ERROR](#), [VAR CREATE ERROR](#), [VAR DELETE ERROR](#), [VAR EXISTS](#),  
[VAR NAME TRUNC](#), [VAR OPEN ERROR](#), [VAR READ ERROR](#), [VAR SAVE 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](#),  
[ZLIB COMPRESS ERROR](#), [ZLIB UNCOMPRESS ERROR](#), [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\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [zVAR\\_RESERVEPERCENT](#) ,  
[zVAR\\_SEQDATA](#) , [zVAR\\_SEQPOS](#) , [zVAR\\_SPARSEARRAYS](#) ,  
[zVAR\\_SPARSERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Constructor Summary

[CDFTT2000](#)( )

## Method Summary

static long[]	<a href="#">breakdown</a> (long nanoSecSinceJ2000) Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.
static long[][]	<a href="#">breakdown</a> (long[] nanoSecSinceJ2000) Breaks an array of TT2000 epoch values down into two dimensional array, the first dimension being the count of the epoch values, and the second dimension being their full, UTC-based date/time component parts for each value.
static long[]	<a href="#">CDFgetLastDateinLeapSecondsTable</a> ( ) /** This method returns the last UTC date that a leap second was added in the leap second table used in the class.
static double[][]	<a href="#">CDFgetLeapSecondsTable</a> ( ) This method returns the leap seconds table.
static int	<a href="#">CDFgetLeapSecondsTableStatus</a> ( ) This method returns the status code reflecting whether the leap seconds are from a external file, defined by an environment variable, or the leap seconds are based on the hard-coded table in the class.
static int	<a href="#">CDFgetRowsinLeapSecondsTable</a> ( ) This method returns the number of entries in the leap seconds table.

<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour, long[] minute</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its * UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its * UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second, long[] msec</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its * UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second, long[] msec, long[] usec</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its * UTC-based date/time component parts.
<code>static long[]</code>	<a href="#"><code>compute</code></a> ( <code>long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second, long[] msec, long[] usec, long[] nsec</code> ) Computes an array of TT2000 epochs, nanoseconds since J2000, based on its * UTC-based date/time component parts.
<code>static long</code>	<a href="#"><code>compute</code></a> ( <code>long year, long month, long day, long hour, long minute, long second, long msec, long usec, long nsec</code> ) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.
<code>static java.lang.String</code>	<a href="#"><code>encode</code></a> ( <code>long nanoSecSinceJ2000</code> ) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string in ISO 8601 format.

static java.lang. String[]	<a href="#"><u>encode</u></a> (long[] nanoSecSinceJ2000) Converts an array of epoch values in TT2000 type into an array of readable, UTC-based date/time strings in ISO 8601 format.
static java.lang. String	<a href="#"><u>encode</u></a> (long nanoSecSinceJ2000, int format) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.
static long	<a href="#"><u>fromGregorianTime</u></a> (java.util.GregorianCalendar gc) This method converts the UTC-based date/time in a GregorianCalendar class object to TT2000 time.
static long	<a href="#"><u>fromUTCEPOCH</u></a> (double epoch) Convert an epoch value in CDF_EPOCH type to TT2000 type.
static long	<a href="#"><u>fromUTCEPOCH16</u></a> (double[] epoch) Convert an epoch data in CDF_EPOCH16 type to TT2000 type.
static long	<a href="#"><u>fromUTCparts</u></a> (double year, double month, double day) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.
static long	<a href="#"><u>fromUTCparts</u></a> (double year, double month, double day, double hour) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.
static long	<a href="#"><u>fromUTCparts</u></a> (double year, double month, double day, double hour, double minute) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.
static long	<a href="#"><u>fromUTCparts</u></a> (double year, double month, double day, double hour, double minute, double second) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.
static long	<a href="#"><u>fromUTCparts</u></a> (double year, double month, double day, double hour, double minute, double second, double milsec) Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

static long	<p><a href="#">fromUTCparts</a>(double year, double month, double day, double hour, double minute, double second, double milsec, double micsec)</p> <p>Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.</p>
static long	<p><a href="#">fromUTCparts</a>(double year, double month, double day, double hour, double minute, double second, double msec, double usec, double nsec)</p> <p>Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.</p>
static long	<p><a href="#">fromUTCstring</a>(java.lang.String string)</p> <p>This method parses an input, UTC-based, date/time string and returns a TT2000 epoch value, nanoseconds since J2000.</p>
static java.lang. String	<p><a href="#">getLeapSecondsTableEnvVar</a>( )</p> <p>Find the environment variable "CDF_LEAPSECONDSTABLE" that is defined for the leap seconds table for CDF.</p>
static double	<p><a href="#">LeapSecondsfromYMD</a>(long year, long month, long day)</p> <p>Find the leap seconds from a given, UTC-based year/month/day.</p>
static long	<p><a href="#">parse</a>(java.lang.String string)</p> <p>This method parses an input date/time string and returns a TT2000 epoch value, nanoseconds since J2000.</p>
static long[]	<p><a href="#">parse</a>(java.lang.String[] strings)</p> <p>This method parses an array of input date/time strings and returns an array of TT2000 epoch values, nanoseconds since J2000.</p>
static java.util. GregorianCalendar	<p><a href="#">toGregorianTime</a>(long tt2000)</p> <p>This method converts the UTC-based date/time in TT2000 type to a GregorianCalendar class object in default, local time zone.</p>
static java.util. GregorianCalendar	<p><a href="#">toGregorianTime</a>(long tt2000, java.util.TimeZone tz)</p> <p>This method converts the UTC-based date/time in TT2000 type to a GregorianCalendar class object in specified time zone.</p>
static double	<p><a href="#">toUTC EPOCH</a>(long nanoSecSinceJ2000)</p> <p>Convert an epoch value in TT2000 type to CDF_EPOCH type.</p>
static double	<p><a href="#">toUTC EPOCH16</a>(long nanoSecSinceJ2000, double[] epoch)</p> <p>Convert an epoch value in TT2000 type to CDF_EPOCH16 type.</p>

<code>static long[]</code>	<a href="#"><code>toUTCparts</code></a> (long nanoSecSinceJ2000) Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.
<code>static java.lang.String</code>	<a href="#"><code>toUTCstring</code></a> (long nanoSecSinceJ2000) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.
<code>static java.lang.String</code>	<a href="#"><code>toUTCstring</code></a> (java.lang.Long nanoSecSinceJ2000) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.
<code>static java.lang.String</code>	<a href="#"><code>toUTCstring</code></a> (long nanoSecSinceJ2000, int format) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.
<code>static java.lang.String</code>	<a href="#"><code>toUTCstring</code></a> (java.lang.Long nanoSecSinceJ2000, int format) Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

### Methods inherited from class java.lang.Object

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

## Constructor Detail

### CDFTT2000

```
public CDFTT2000()
```

## Method Detail

### getLeapSecondsTableEnvVar

```
public static java.lang.String getLeapSecondsTableEnvVar()
```

Find the environment variable "CDF\_LEAPSECONDSTABLE" that is defined for the leap seconds table for CDF.



**Returns:**

the leap seconds environment variable if defined null if not.

---

**LeapSecondsfromYMD**

```
public static double LeapSecondsfromYMD(long year,
                                         long month,
                                         long day)
```

Find the leap seconds from a given, UTC-based year/month/day.

**Parameters:**

year - the year  
 month - the month  
 day - the day

**Returns:**

the leap second value (TAI-UTC)

---

**toUTCparts**

```
public static long[] toUTCparts(long nanoSecSinceJ2000)
```

Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.

**Parameters:**

nanoSecSinceJ2000 - the epoch value, in nanoseconds since J2000, to break down

**Returns:**

an array of long containing the epoch parts:

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

6	millisecond
7	microsecond
8	nanosecond

---

## breakdown

```
public static long[] breakdown(long nanoSecSinceJ2000)
```

Breaks a TT2000 epoch value down into its full, UTC-based date/time component parts.

### Parameters:

nanoSecSinceJ2000 - the epoch value, in nanoseconds since J2000, to break down

### Returns:

an array of long containing the epoch parts:

Index	Part
0	year
1	month
2	day
3	hour
4	minute
5	second
6	millisecond
7	microsecond
8	nanosecond

---

## breakdown

```
public static long[][] breakdown(long[] nanoSecSinceJ2000)
```

Breaks an array of TT2000 epoch values down into two dimensional array, the first dimension being the count of the epoch values, and the second dimension being their full, UTC-based date/time component parts for each value.

### Parameters:

nanoSecSinceJ2000 - an array of epoch values, in nanoseconds since J2000, to break down

**Returns:**

a 2-dim array of long, the first dimension being the value count while the second dimension containing the epoch parts, as follows:

Index	Part
0	year
1	month
2	day
3	hour
4	minute
5	second
6	millisecond
7	microsecond
8	nanosecond

or null if null or an empty input array is detected

---

**fromUTCparts**

```
public static long fromUTCparts(double year,  
                                double month,  
                                double day)  
    throws CDFException
```

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The day field can contain a fraction of a day.

**Parameters:**

year - the year, a full year in double  
month - the month, a full month in double  
day - the day in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## fromUTCparts

```
public static long fromUTCparts(double year,  
                                   double month,  
                                   double day,  
                                   double hour)  
    throws CDFException
```

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The hour field can contain a fraction of a hour.

### Parameters:

year - the year, a full year in double  
month - the month, a full month in double  
day - the day, a full day in double  
hour - the hour in double

### Returns:

the TT2000 epoch value in long

### Throws:

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## fromUTCparts

```
public static long fromUTCparts(double year,  
                                   double month,  
                                   double day,  
                                   double hour,  
                                   double minute)  
    throws CDFException
```

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The minute field can contain a fraction of a minute.

### Parameters:

year - the year, a full year in double  
month - the month, a full month in double  
day - the day, a full day in double  
hour - the hour, a full hour in double  
minute - the minute in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

**fromUTCparts**

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

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The second field can contain a fraction of a second.

**Parameters:**

year - the year, a full year in double  
month - the month, a full month in double  
day - the day, a full day in double  
hour - the hour, a full hour in double  
minute - the minute, a full minute in double  
second - the second in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

**fromUTCparts**

```
public static long fromUTCparts(double year,  
                                double month,  
                                double day,  
                                double hour,  
                                double minute,
```

```

        double second,
        double milsec)
throws CDFException

```

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The millisecond field can contain a fraction of a millisecond.

**Parameters:**

year - the year, a full year in double  
 month - the month, a full month in double  
 day - the day, a full day in double  
 hour - the hour, a full hour in double  
 minute - the minute, a full minute in double  
 second - the second, a full second in double  
 milsec - the millisecond in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

## fromUTCparts

```

public static long fromUTCparts(double year,
        double month,
        double day,
        double hour,
        double minute,
        double second,
        double milsec,
        double micsec)
throws CDFException

```

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts. The microsecond field can contain a fraction, which usually indicates the end of the parameter list.

**Parameters:**

year - the year, a full year in double  
 month - the month, a full month in double  
 day - the day, a full day in double

hour - the hour, a full hour in double  
 minute - the minute, a full minute in double  
 second - the second, a full second in double  
 milsec - the millisecond, a full millisecond in double  
 micsec - the microsecond in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

**fromUTCparts**

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

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

**Parameters:**

year - the year, a full year in double  
 month - the month, a full month in double  
 day - the day, a full day in double  
 hour - the hour, a full hour in double  
 minute - the minute, a full minute in double  
 second - the second, a full second in double  
 msec - the millisecond, a full millisecond in double  
 usec - the microsecond, a full microsecond in double  
 nsec - the nanosecond, a full nanosecond in double

**Returns:**

the TT2000 epoch value in long

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

## compute

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

Computes a TT2000 epoch, nanoseconds since J2000, based on its UTC-based date/time component parts.

### Parameters:

`year` - the year, a full year in long  
`month` - the month, a full month in long  
`day` - the day, a full day in long  
`hour` - the hour, a full hour in long  
`minute` - the minute, a full minute in long  
`second` - the second, a full second in long  
`msec` - the millisecond, a full millisecond in long  
`usec` - the microsecond, a full microsecond in long  
`nsec` - the nanosecond, a full nanosecond in long

### Returns:

the TT2000 epoch value in long

### Throws:

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## compute

```
public static long[] compute(long[] year,
                               long[] month,
                               long[] day)
    throws CDFException
```



Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.

**Parameters:**

year - an array of years, a full year in long  
month - an array of months, a full month in long  
day - an array of days, a full day in long

**Returns:**

the TT2000 epoch values in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## compute

```
public static long[] compute(long[] year,  
                               long[] month,  
                               long[] day,  
                               long[] hour)  
    throws CDFException
```

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its UTC-based date/time component parts.

**Parameters:**

year - an array of years, a full year in long  
month - an array of months, a full month in long  
day - an array of days, a full day in long  
hour - an array of hours, a full hour in long

**Returns:**

the TT2000 epoch value in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## compute

```
public static long[] compute(long[] year,
```

```
        long[] month,  
        long[] day,  
        long[] hour,  
        long[] minute)  
    throws CDFException
```

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**Parameters:**

`year` - an array of years, a full year in long  
`month` - an array of months, a full month in long  
`day` - an array of days, a full day in long  
`hour` - an array of hours, a full hour in long  
`minute` - an array of minutes, a full minute in long

**Returns:**

the TT2000 epoch values in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## compute

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

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**Parameters:**

`year` - an array of years, a full year in long  
`month` - an array of months, a full month in long  
`day` - an array of days, a full day in long  
`hour` - an array of hours, a full hour in long  
`minute` - an array of minutes, a full minute in long  
`second` - an array of seconds, a full second in long

**Returns:**

the TT2000 epoch value in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

**compute**

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

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**Parameters:**

year - an array of years, a full year in long

month - an array of months, a full month in long

day - an array of days, a full day in long

hour - an array of hours, a full hour in long

minute - an array of minutes, a full minute in long

second - an array of seconds, a full second in long

msec - an array of milliseconds, a full millisecond in long

**Returns:**

the TT2000 epoch values in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

**compute**

```
public static long[] compute(long[] year,
                               long[] month,
                               long[] day,
```

```
        long[] hour,  
        long[] minute,  
        long[] second,  
        long[] msec,  
        long[] usec)  
    throws CDFException
```

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**Parameters:**

`year` - an array of years, a full year in long  
`month` - an array of months, a full month in long  
`day` - an array of days, a full day in long  
`hour` - an array of hours, a full hour in long  
`minute` - an array of minutes, a full minute in long  
`second` - an array of seconds, a full second in long  
`msec` - an array of milliseconds, a full millisecond in long  
`usec` - an array of microseconds, a full microsecond in long

**Returns:**

the TT2000 epoch value in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

---

## compute

```
public static long[] compute(long[] year,  
                               long[] month,  
                               long[] day,  
                               long[] hour,  
                               long[] minute,  
                               long[] second,  
                               long[] msec,  
                               long[] usec,  
                               long[] nsec)  
    throws CDFException
```

Computes an array of TT2000 epochs, nanoseconds since J2000, based on its \* UTC-based date/time component parts.

**Parameters:**

year - an array of years, a full year in long  
 month - an array of months, a full month in long  
 day - an array of days, a full day in long  
 hour - an array of hours, a full hour in long  
 minute - an array of minutes, a full minute in long  
 second - an array of seconds, a full second in long  
 msec - an array of milliseconds, a full millisecond in long  
 usec - an array of microseconds, a full microsecond in long  
 nsec - an array of nanoseconds, a full nanosecond in long

**Returns:**

the TT2000 epoch values in long or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if an illegal component value is detected.

**toUTCEPOCH**

```
public static double toUTCEPOCH(long nanoSecSinceJ2000)
    throws CDFException
```

Convert an epoch value in TT2000 type to CDF\_EPOCH type.

**Parameters:**

nanoSecSinceJ2000 - the nanoseconds since J2000

**Returns:**

the epoch value

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

**fromUTCEPOCH**

```
public static long fromUTCEPOCH(double epoch)
    throws CDFException
```

Convert an epoch value in CDF\_EPOCH type to TT2000 type. Reset the predefined CDF\_EPOCH value of -1.0E31, -1.0E-31, or the default 0.0 or -0.0 (all are invalid for TT2000)

to 0.

**Parameters:**

epoch - the CDF\_EPOCH value

**Returns:**

the TT2000 epoch in nanoseconds since J2000

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if date is out of the valid range for TT2000.

---

## toUTCEPOCH16

```
public static double toUTCEPOCH16(long nanoSecSinceJ2000,
                                   double[] epoch)
    throws CDFException
```

Convert an epoch value in TT2000 type to CDF\_EPOCH16 type.

**Parameters:**

nanoSecSinceJ2000 - the nanoseconds since J2000

epoch - the returned CDF\_EPOCH16 value, a double[2] object

**Returns:**

the status

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

---

## fromUTCEPOCH16

```
public static long fromUTCEPOCH16(double[] epoch)
    throws CDFException
```

Convert an epoch data in CDF\_EPOCH16 type to TT2000 type. Reset the predefined CDF\_EPOCH value of -1.0E31, -1.0E-31, or the default 0.0 or -0.0 (all are invalid for TT2000) to 0.

**Parameters:**

epoch - the CDF\_EPOCH16 value, a double[2] object

**Returns:**

the TT2000 epoch in nanoseconds since J2000

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if date is out of the valid range for TT2000.

**toUTCstring**

```
public static java.lang.String toUTCstring(java.lang.
Long nanoSecSinceJ2000)
```

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.

```
Examples:      yyyy-mm-ddThh:mm:ss.aaaaaaaaa
1990-04-01T03:05:02.000000000
1993-10-10T23:45:49.777888999
```

**Parameters:**

nanoSecSinceJ2000 - the TT2000 epoch value, nanoseconds since J2000, in Long object

**Returns:**

A string representation of the epoch in ISO 8601

**toUTCstring**

```
public static java.lang.String toUTCstring(long nanoSecSinceJ2000)
```

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of ISO 8601 formats.

```
Examples:      yyyy-mm-ddThh:mm:ss.aaaaaaaaa
1990-04-01T03:05:02.000000000
1993-10-10T23:45:49.777888999
```

These formats are the same as those expected by `fromUTCstring`.

**Parameters:**

`nanoSecSinceJ2000` - the TT2000 epoch value, nanoseconds since J2000, in long

**Returns:**

A string representation of the epoch

## toUTCstring

```
public static java.lang.String toUTCstring(java.lang.
Long nanoSecSinceJ2000,
                                         int format)
```

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

```
Format:0    dd-mmm-yyyy hh:mm:ss.ccccccccc
Examples:   01-Apr-1990 03:05:02.000000000
           10-Oct-1993 23:45:49.777888999
```

```
Format:1    yyyyymmdd.ccccccccc
Examples:   19900401.1234567890
           19931010.9998887776
```

```
Format:2    yyyyymmddhhmmss
Examples:   19900401030502
           19931010234549
```

```
Format:3    yyyy-mm-ddThh:mm:ss.ccccccccc
Examples:   1990-04-01T03:05:02.000000000
           1993-10-10T23:45:49.777888999
```

This is the default, ISO 8601, output.

These formats are the same as those expected by `fromUTCstring`.

**Parameters:**

`nanoSecSinceJ2000` - the TT2000 epoch value, nanoseconds since J2000, in Long object



`format` - the format (from 0 to 3, as the default), an optional

**Returns:**

A string representation of the epoch

---

## toUTCstring

```
public static java.lang.String toUTCstring(long nanoSecSinceJ2000,
                                             int format)
```

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

```
Format:0    dd-mmm-yyyy hh:mm:ss.ccccccccc
Examples:   01-Apr-1990 03:05:02.000000000
           10-Oct-1993 23:45:49.777888999
```

```
Format:1    yyyyymmdd.ccccccccc
Examples:   19900401.1234567890
           19931010.9998887776
```

```
Format:2    yyyyymmddhhmmss
Examples:   19900401030502
           19931010234549
```

```
Format:3    yyyy-mm-ddThh:mm:ss.ccccccccc
Examples:   1990-04-01T03:05:02.000000000
           1993-10-10T23:45:49.777888999
```

This is the default, ISO 8601, output.

These formats are the same as those expected by `fromUTCstring`.

**Parameters:**

`nanoSecSinceJ2000` - the TT2000 epoch value, nanoseconds since J2000, in long  
`format` - the format (from 0 to 3, as the default), an optional

**Returns:**

A string representation of the epoch

---

## encode

```
public static java.lang.String encode(long nanoSecSinceJ2000)
```

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string in ISO 8601 format.

```

Examples:      yyyy-mm-ddThh:mm:ss.aaaaaaaaa
               1990-04-01T03:05:02.000000000
               1993-10-10T23:45:49.777888999
```

**Parameters:**

nanoSecSinceJ2000 - the TT2000 epoch value, nanoseconds since J2000, in long

**Returns:**

A string representation of the epoch

---

## encode

```
public static java.lang.String[] encode(long[] nanoSecSinceJ2000)
```

Converts an array of epoch values in TT2000 type into an array of readable, UTC-based date/time strings in ISO 8601 format.

```

Examples:      yyyy-mm-ddThh:mm:ss.aaaaaaaaa
               1990-04-01T03:05:02.000000000
               1993-10-10T23:45:49.777888999
```

**Parameters:**

nanoSecSinceJ2000 - the TT2000 epoch value, nanoseconds since J2000, in long

**Returns:**

strings representing the epochs or null if null or an empty input array is detected

---

## encode

```
public static java.lang.String encode(long nanoSecSinceJ2000,
```

int format)

Converts an epoch value in TT2000 type into a readable, UTC-based date/time string of chosen formats.

Format:0 dd-mmm-yyyy hh:mm:ss.ccccccccc

Examples: 01-Apr-1990 03:05:02.000000000

10-Oct-1993 23:45:49.777888999

Format:1 yyyyymmdd.ccccccccc

Examples: 19900401.1234567890

19931010.9998887776

Format:2 yyyyymmddhhmmss

Examples: 19900401030502

19931010234549

Format:3 yyyy-mm-ddThh:mm:ss.ccccccccc

Examples: 1990-04-01T03:05:02.000000000

1993-10-10T23:45:49.777888999

This is the default, ISO 8601, output.

These formats are the same as those expected by `fromUTCstring`.

### Parameters:

`nanoSecSinceJ2000` - the TT2000 epoch value, nanoseconds since J2000, in long  
`format` - the format (from 0 to 3, as the default), an optional

### Returns:

A string representation of the epoch

## fromUTCstring

```
public static long fromUTCstring(java.lang.String string)
                        throws CDFException
```

This method parses an input, UTC-based, date/time string and returns a TT2000 epoch value, nanoseconds since J2000. The string must be in one of the formats as shown below. Month abbreviations may be in any case and are always the first three letters of the month.

```

Format:0    dd-mmm-yyyy hh:mm:ss.ccccccccc
Examples:   01-Apr-1990 03:05:02.000000000
            10-Oct-1993 23:45:49.777888999

Format:1    yyyyymmdd.ccccccccc
Examples:   19900401.1234567890
            19931010.9998887776

Format:2    yyyyymmddhhmmss
Examples:   19900401030502
            19931010234549

Format:3    yyyy-mm-ddThh:mm:ss.ccccccccc
Examples:   1990-04-01T03:05:02.000000000
            1993-10-10T23:45:49.777888999

```

These formats are the same as those created by `toUTCstring`.

**Parameters:**

`string` - the epoch in string representation

**Returns:**

A TT2000 epoch the epoch value in nanoseconds since J2000

**Throws:**

[CDFException](#) - an `TT2000_TIME_ERROR` if an illegal component value is detected.

## parse

```

public static long parse(java.lang.String string)
                    throws CDFException

```

This method parses an input date/time string and returns a TT2000 epoch value, nanoseconds since J2000. The string must be in one of the formats as shown below. Month abbreviations may be in any case and are always the first three letters of the month.

```

Format:0    dd-mmm-yyyy hh:mm:ss.ccccccccc
Examples:   01-Apr-1990 03:05:02.000000000
            10-Oct-1993 23:45:49.777888999

Format:1    yyyyymmdd.ccccccccc

```

```

Examples:  19900401.1234567890
           19931010.9998887776

Format:2   yyyyymmddhhmms
Examples:  19900401030502
           19931010234549

Format:3   yyyy-mm-ddThh:mm:ss.aaaaaaaaa
Examples:  1990-04-01T03:05:02.000000000
           1993-10-10T23:45:49.777888999

```

These formats are the same as those created by `toUTCstring`.

**Parameters:**

`string` - the epoch in string representation

**Returns:**

A TT2000 epoch the epoch value in nanoseconds since J2000

**Throws:**

[CDFException](#) - an `TT2000_TIME_ERROR` if an illegal component value is detected.

## parse

```

public static long[] parse(java.lang.String[] strings)
    throws CDFException

```

This method parses an array of input date/time strings and returns an array of TT2000 epoch values, nanoseconds since J2000. The string must be in one of the formats as shown below. Month abbreviations may be in any case and are always the first three letters of the month.

```

Format:0   dd-mmm-yyyy hh:mm:ss.aaaaaaaaa
Examples:  01-Apr-1990 03:05:02.000000000
           10-Oct-1993 23:45:49.777888999

Format:1   yyyyymmdd.aaaaaaaaa
Examples:  19900401.1234567890
           19931010.9998887776

Format:2   yyyyymmddhhmms
Examples:  19900401030502

```

19931010234549

```
Format:3    yyyy-mm-ddThh:mm:ss.aaaaaaaaa
Examples:   1990-04-01T03:05:02.000000000
            1993-10-10T23:45:49.777888999
```

These formats are the same as those created by `toUTCstring`.

**Parameters:**

`strings` - an array of epochs in string representation

**Returns:**

TT2000 epoch values in nanoseconds since J2000 or null if null or an empty input array is detected

**Throws:**

[CDFException](#) - an `TT2000_TIME_ERROR` if an illegal component value is detected.

## CDFFgetLastDateinLeapSecondsTable

```
public static long[] CDFFgetLastDateinLeapSecondsTable()
```

/\*\* This method returns the last UTC date that a leap second was added in the leap second table used in the class. This can be used to check whether the table is up-to-date.

**Returns:**

the date (year, month, day) in a long array

## fromGregorianTime

```
public static long fromGregorianTime(java.util.GregorianCalendar gc)
```

This method converts the UTC-based date/time in a `GregorianCalendar` class object to TT2000 time.

**Returns:**

the TT2000 time

**Throws:**

[CDFException](#) - an TT2000\_TIME\_ERROR if a GregorianCalendar component value is detected.

---

## toGregorianTime

```
public static java.util.GregorianCalendar toGregorianTime(long tt2000)
```

This method converts the UTC-based date/time in TT2000 type to a GregorianCalendar class object in default, local time zone.

**Returns:**

a GregorianCalendar object

---

## toGregorianTime

```
public static java.util.GregorianCalendar toGregorianTime(long tt2000,  
                                                         java.util.  
TimeZone tz)
```

This method converts the UTC-based date/time in TT2000 type to a GregorianCalendar class object in specified time zone.

**Returns:**

a GregorianCalendar object

---

## CDFgetLeapSecondsTableStatus

```
public static int CDFgetLeapSecondsTableStatus()
```

This method returns the status code reflecting whether the leap seconds are from a external file, defined by an environment variable, or the leap seconds are based on the hard-coded table in the class.

**Returns:**

status 1 if form a file, 0 hard-coded

## CDFgetLeapSecondsTable

```
public static double[][] CDFgetLeapSecondsTable()
```

This method returns the leap seconds table.

**Returns:**

table The table contents of the leap seconds

---

## CDFgetRowsinLeapSecondsTable

```
public static int CDFgetRowsinLeapSecondsTable()
```

This method returns the number of entries in the leap seconds table.

**Returns:**

enrtyCnt The entry count in the leap seconds table

---

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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.

### Version:

1.0

---

## 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [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 EPOCH16 PADVALUE](#) , [DEFAULT FLOAT PADVALUE](#) ,  
[DEFAULT INT1 PADVALUE](#) , [DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,  
[DEFAULT INT8 PADVALUE](#) , [DEFAULT REAL4 PADVALUE](#) ,  
[DEFAULT REAL8 PADVALUE](#) , [DEFAULT TT2000 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](#) , [EPOCH4 STRING LEN](#) ,  
[EPOCH4 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,  
[FILLED TT2000 VALUE](#) , [FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY DATA](#) ,  
[gENTRY DATASPEC](#) , [gENTRY DATATYPE](#) , [gENTRY EXISTENCE](#) ,  
[gENTRY NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
[GETCDFVALIDATE](#) , [GETLEAPSECONDSENVVAR](#) , [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](#) , [ILLEGAL TT2000 VALUE](#) , [IS A NETCDF](#) ,  
[LIB COPYRIGHT](#) , [LIB INCREMENT](#) , [LIB RELEASE](#) , [LIB subINCREMENT](#) ,  
[LIB VERSION](#) , [MAC DECODING](#) , [MAC ENCODING](#) , [MD5 CHECKSUM](#) , [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 CHECKSUM](#) , [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](#) , [NONE CHECKSUM](#) , [NOT A CDF](#) ,  
[NOT A CDF OR NOT SUPPORTED](#) , [NOVARY](#) , [NULL](#) , [OPEN](#) ,  
[OPTIMAL ENCODING TREES](#) , [OTHER CHECKSUM](#) , [PAD SPARSERECORDS](#) ,  
[PPC DECODING](#) , [PPC ENCODING](#) , [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 RECORDS RENUMBER](#), [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](#), [TT2000 0 STRING LEN](#), [TT2000 1 STRING LEN](#), [TT2000 2 STRING LEN](#), [TT2000 3 STRING LEN](#), [TT2000 CDF MAYNEEDUPDATE](#), [TT2000 TIME ERROR](#), [TT2000 USED OUTDATED TABLE](#), [UNABLE TO PROCESS CDF](#), [UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#), [VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#), [VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#), [VAR READ ERROR](#), [VAR SAVE 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](#), [ZLIB COMPRESS ERROR](#), [ZLIB UNCOMPRESS ERROR](#), [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\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [zVAR\\_RESERVEPERCENT](#) ,  
[zVAR\\_SEQDATA](#) , [zVAR\\_SEQPOS](#) , [zVAR\\_SPARSEARRAYS](#) ,  
[zVAR\\_SPASERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Constructor Summary

[CDFUtils](#)()

## Method Summary

static boolean	<a href="#">cdfFileExists</a> (java.lang.String fileName) Checks the existence of the given CDF file name.
static long	<a href="#">getDataTypeValue</a> (java.lang.String cdfDataType) Gets the long value of the given CDF data type in string.
static long	<a href="#">getLeapSecondLastUpdated</a> (CDF cdf) Gets the date of the given CDF's last updated for the leap second.
static long	<a href="#">getLongChecksum</a> (java.lang.String checksum) Gets the long value of the given CDF's checksum in string.
static long	<a href="#">getLongCompressionType</a> (java.lang.String compressionType) Gets the long representation of the given CDF compression type in string.
static long	<a href="#">getLongEncoding</a> (java.lang.String encodingType) Gets the long value of the given CDF encoding type in string.
static long	<a href="#">getLongFormat</a> (java.lang.String formatType) Gets the long value of the given CDF file format in string.
static long	<a href="#">getLongMajority</a> (java.lang.String majorityType) Gets the long value of the given CDF majority.
static long	<a href="#">getLongSparseRecord</a> (java.lang.String sparseRecordType) Gets the long value of the given sparse record type in string.

static long	<a href="#"><u>getNumElements</u></a> (long dataType, java.lang.Object data) Gets the number of elements contained in the given data object.
static java.lang.String	<a href="#"><u>getSignature</u></a> (java.lang.Object obj) Gets the java signature of the given object.
static java.lang.String	<a href="#"><u>getStringChecksum</u></a> ( <a href="#"><u>CDF</u></a> cdf) Gets the string value of the given CDF's checksum.
static java.lang.String	<a href="#"><u>getStringChecksum</u></a> (long checksumType) Gets the string value of the given CDF's checksum.
static java.lang.String	<a href="#"><u>getStringCompressionType</u></a> ( <a href="#"><u>CDF</u></a> cdf) Gets the string representation of the given CDF file's compression type.
static java.lang.String	<a href="#"><u>getStringCompressionType</u></a> (long compressionType) Gets the string representation of the given CDF compression type.
static java.lang.String	<a href="#"><u>getStringCompressionType</u></a> ( <a href="#"><u>Variable</u></a> var) Gets the string representation of the given variable's compression type.
static java.lang.String	<a href="#"><u>getStringData</u></a> (java.lang.Object data) Returns the string value of the given data.
static java.lang.String	<a href="#"><u>getStringData</u></a> (java.lang.Object data, int epochType) Returns the string value of the given data.
static java.lang.String	<a href="#"><u>getStringData</u></a> (java.lang.Object data, java.lang.String separator) returns the string of the value of the given data.
static java.lang.String	<a href="#"><u>getStringData</u></a> (java.lang.Object data, java.lang.String separator, int epochType) returns the string of the value of the given data.
static java.lang.String	<a href="#"><u>getStringDataType</u></a> ( <a href="#"><u>Entry</u></a> entry) Gets the string value of the CDF data type for the given entry.
static java.lang.String	<a href="#"><u>getStringDataType</u></a> (long cdfDataType) Gets the string representation of the given CDF data type.
static java.lang.String	<a href="#"><u>getStringDataType</u></a> ( <a href="#"><u>Variable</u></a> var) Gets the string value of the CDF data type for the given variable.
static java.lang.String	<a href="#"><u>getStringDecoding</u></a> ( <a href="#"><u>CDF</u></a> cdf) Gets the string value of the given CDF file's decoding type.

static java. lang.String	<a href="#"><u>getStringDecoding</u></a> (long decodingType) Gets the string value of the given CDF decoding type .
static java. lang.String	<a href="#"><u>getStringEncoding</u></a> (CDF cdf) Get the string value of the given CDF's encoding type.
static java. lang.String	<a href="#"><u>getStringEncoding</u></a> (long encodingType) Gets the string value of the given CDF encoding type.
static java. lang.String	<a href="#"><u>getStringFormat</u></a> (CDF cdf) Gets the string value of the given CDF's file format.
static java. lang.String	<a href="#"><u>getStringFormat</u></a> (long formatType) Gets the string value of the given CDF's file format.
static java. lang.String	<a href="#"><u>getStringMajority</u></a> (CDF cdf) Gets the string value of the given CDF file's majority.
static java. lang.String	<a href="#"><u>getStringMajority</u></a> (long majorityType) Gets the string value of the given CDF majority.
static java. lang.String	<a href="#"><u>getStringSparseRecord</u></a> (long sparseRecordType) Gets the string value of the given sparse record type.
static java. lang.String	<a href="#"><u>getStringSparseRecord</u></a> (Variable var) Gets the string value of the given variable's sparse record type.
static boolean	<a href="#"><u>isEpochDataType</u></a> (long dataType) Returns whether a CDF data type is an epoch related type.
static boolean	<a href="#"><u>isStringDataType</u></a> (long dataType) Returns whether a CDF data type is a string type.
static void	<a href="#"><u>printData</u></a> (java.lang.Object data) Prints the value of the given data on the screen.
static void	<a href="#"><u>printData</u></a> (java.lang.Object data, int which) Prints the value of the given data on the screen.
static void	<a href="#"><u>printData</u></a> (java.lang.Object data, int which, boolean iso8601) Prints the value of the given data on the screen.
static void	<a href="#"><u>printData</u></a> (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	<a href="#">printData</a> (java.lang.Object data, java.io.PrintWriter outWriter, int which) Prints the value of the given data to the place designated by PrintWriter that can be a file, Sysem.out, System.err, and etc.
static void	<a href="#">printData</a> (java.lang.Object data, java.io.PrintWriter outWriter, int which, boolean iso8601) Prints the value of the given data to the place designated by PrintWriter that can be a file, Sysem.out, System.err, and etc.

### Methods inherited from class java.lang.Object

equals, 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
java.lang.Boolean	Boolean
Ljava.lang.Boolean;	array of Boolean
java.lang.Byte	Byte
Ljava.lang.Byte;	array of Byte
java.lang.Short	Short
Ljava.lang.Short;	array of Short
java.lang.Integer	Integer
Ljava.lang.Integer;	array of Integer
java.lang.Long	Long
Ljava.lang.Long;	array of Long
java.lang.Float	Float
Ljava.lang.Float;	array of Float
java.lang.Double	Double
Ljava.lang.Double;	array of Double
java.lang.String	String
Ljava.lang.String;	array of String

**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,  
                             boolean iso8601)
```

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 1 if CDF\_EPOCH, 2 if CDF\_EPOCH16 or 3

if CDF\_TIME\_TT2000  
iso8601 - the ISO 8601 indicator for EPOCH data

---

## 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 1 if CDF\_EPOCH, 2 if CDF\_EPOCH16 or 3 if CDF\_TIME\_TT2000

---

## 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)
```

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.

**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

`which` - the Epoch data type data indicator 1 if `CDF_EPOCH`, 2 if `CDF_EPOCH16` or 3 if `CDF_TIME_TT2000`

---

**printData**

```
public static void printData(java.lang.Object data,  
                               java.io.PrintWriter outWriter,  
                               int which,  
                               boolean iso8601)
```

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.

**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

`which` - the Epoch data type data indicator 1 if CDF\_EPOCH, 2 if CDF\_EPOCH16 or 3 if CDF\_TIME\_TT2000

`iso8601` - the ISO 8601 indicator for EPOCH data

---

**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, == 3 for TT2000, == 0 for 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.

---

## isStringDataType

```
public static boolean isStringDataType(long dataType)
```

Returns whether a CDF data type is a string type.

**Parameters:**

dataType - the data type to be examined

**Returns:**

true if it is (CDF\_CHAR or CDF\_UCHAR) false otherwise

---

## isEpochDataType

```
public static boolean isEpochDataType(long dataType)
```

Returns whether a CDF data type is an epoch related type.

**Parameters:**

dataType - the data type to be examined

**Returns:**

true if it is (CDF\_EPOCH, CDF\_EPOCH16 or CDF\_TIME\_TT2000) false otherwise

---

## 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\_UINT8
- CDF\_INT8
- CDF\_REAL4
- CDF\_FLOAT
- CDF\_REAL8
- CDF\_DOUBLE
- CDF\_EPOCH
- CDF\_EPOCH16
- CDF\_TIME\_TT2000

**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\_INT8
- CDF\_REAL4

- CDF\_FLOAT
- CDF\_REAL8
- CDF\_DOUBLE
- CDF\_EPOCH
- CDF\_EPOCH16
- CDF\_TIME\_TT2000

**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
- IBMP\_C\_ENCODING
- IBMRS\_ENCODING
- HOST\_ENCODING
- PPC\_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
  - PPC
  - 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
- PPC
- 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
- PPC\_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
- PPC\_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
- 

## getLongChecksum

```
public static long getLongChecksum(java.lang.String checksum)
```

Gets the long value of the given CDF's checksum in string.

**Parameters:**

checksum - the checksum string of which to be translated.

**Returns:**

long value of checksum type. The returned value is either NONE\_CHECKSUM, MD5\_CHECKSUM, or OTHER\_CHECKSUM.

---

## getLeapSecondLastUpdated

```
public static long getLeapSecondLastUpdated(CDF cdf)
```

Gets the date of the given CDF's last updated for the leap second.

**Parameters:**

cdf - the CDF with which its leap second last updated.

**Returns:**

value (in YYYYMMDD) representation of leap second last updated, if set. -1 if the value is not set (prior to CDF V3.5.1).

---

## getStringChecksum

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

Gets the string value of the given CDF's checksum.

**Parameters:**

`cdf` - the CDF with which its checksum to be translated.

**Returns:**

string representation of checksum type. The returned value is either NONE, MD5, or OTHER.

---

## getStringChecksum

```
public static java.lang.String getStringChecksum(long checksumType)
```

Gets the string value of the given CDF's checksum.

**Parameters:**

`checksumType` - the CDF checksum to be translated. It should be either NO\_CHECKSUM (or NONE\_CHECKSUM) or MD5\_CHECKSUM

**Returns:**

string representation of checksumType. The returned value is either NONE, MD5, or OTHER.

---

## 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.util

## Class Epoch

java.lang.Object

└─gsfc.nssdc.cdf.util.Epoch

### All Implemented Interfaces:

[CDFConstants](#)

---

```
public class Epoch
```

```
extends java.lang.Object
```

```
implements CDFConstants
```

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF\_EPOCH data type.

### Version:

#### 1.0 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));
System.out.println(Epoch.encode4(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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#), [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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#), [CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#), [CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#), [CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),



[CDF LEAPSECONDLASTUPDATED](#) , [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 SAVE ERROR](#) , [CDF SCRATCHDIR](#) ,  
[CDF STATUS](#) , [CDF STATUSTEXT LEN](#) , [CDF TIME TT2000](#) , [CDF UCHAR](#) ,  
[CDF UINT1](#) , [CDF UINT2](#) , [CDF UINT4](#) , [CDF VAR NAME LEN](#) ,  
[CDF VAR NAME LEN256](#) , [CDF VERSION](#) , [CDF WARN](#) , [CDF WRITE ERROR](#) ,  
[CDF zMODE](#) , [CDFwithSTATS](#) , [CHECKSUM](#) , [CHECKSUM ERROR](#) ,  
[CHECKSUM NOT ALLOWED](#) , [CLOSE](#) , [COLUMN MAJOR](#) , [COMPRESS CACHESIZE](#) ,  
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[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 EPOCH16 PADVALUE](#) , [DEFAULT FLOAT PADVALUE](#) ,  
[DEFAULT INT1 PADVALUE](#) , [DEFAULT INT2 PADVALUE](#) , [DEFAULT INT4 PADVALUE](#) ,  
[DEFAULT INT8 PADVALUE](#) , [DEFAULT REAL4 PADVALUE](#) ,  
[DEFAULT REAL8 PADVALUE](#) , [DEFAULT TT2000 PADVALUE](#) ,  
[DEFAULT UCHAR PADVALUE](#) , [DEFAULT UINT1 PADVALUE](#) ,  
[DEFAULT UINT2 PADVALUE](#) , [DEFAULT UINT4 PADVALUE](#) , [DELETE](#) ,  
[DID NOT COMPRESS](#) , [EMPTY COMPRESSED CDF](#) , [END OF VAR](#) ,  
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[EPOCH4 STRING LEN EXTEND](#) , [EPOCHx FORMAT MAX](#) , [EPOCHx STRING MAX](#) ,  
[FILLED TT2000 VALUE](#) , [FORCED PARAMETER](#) , [gENTRY](#) , [gENTRY DATA](#) ,  
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[ILLEGAL ON V1 CDF](#) , [ILLEGAL TT2000 VALUE](#) , [IS A NETCDF](#) ,

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LIB VERSION , MAC DECODING , MAC ENCODING , MD5 CHECKSUM , 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 CHECKSUM , 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 , NONE CHECKSUM , NOT A CDF ,  
NOT A CDF OR NOT SUPPORTED , NOVARY , NULL , OPEN ,  
OPTIMAL ENCODING TREES , OTHER CHECKSUM , PAD SPARSERECORDS ,  
PPC DECODING , PPC ENCODING , 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 RECORDS RENUMBER , 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 , TT2000 0 STRING LEN ,  
TT2000 1 STRING LEN , TT2000 2 STRING LEN , TT2000 3 STRING LEN ,  
TT2000 CDF MAYNEEDUPDATE , TT2000 TIME ERROR ,  
TT2000 USED OUTDATED TABLE , UNABLE TO PROCESS CDF ,

[UNKNOWN\\_COMPRESSION](#), [UNKNOWN\\_SPARSENESS](#), [UNSUPPORTED\\_OPERATION](#),  
[VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR\\_ALREADY\\_CLOSED](#),  
[VAR\\_CLOSE\\_ERROR](#), [VAR\\_CREATE\\_ERROR](#), [VAR\\_DELETE\\_ERROR](#), [VAR\\_EXISTS](#),  
[VAR\\_NAME\\_TRUNC](#), [VAR\\_OPEN\\_ERROR](#), [VAR\\_READ\\_ERROR](#), [VAR\\_SAVE\\_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](#),  
[ZLIB\\_COMPRESS\\_ERROR](#), [ZLIB\\_UNCOMPRESS\\_ERROR](#), [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\\_RECORDS\\_RENUMBER](#), [zVAR\\_RECVAR](#), [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[]	<a href="#">breakdown</a> (double epoch) Breaks an EPOCH value down into its component parts.
static long[] []	<a href="#">breakdown</a> (double[] epochs) Breaks an array of EPOCH values down into its component parts.
static double []	<a href="#">compute</a> (long[] year, long[] month, long[] day) Computes an array of EPOCH values based on their component parts.

static double []	<a href="#"><u>compute</u></a> (long[] year, long[] month, long[] day, long[] hour) Computes an array of EPOCH values based on their component parts.
static double []	<a href="#"><u>compute</u></a> (long[] year, long[] month, long[] day, long[] hour, long[] minute) Computes an array of EPOCH values based on their component parts.
static double []	<a href="#"><u>compute</u></a> (long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second) Computes an array of EPOCH values based on their component parts.
static double []	<a href="#"><u>compute</u></a> (long[] year, long[] month, long[] day, long[] hour, long[] minute, long[] second, long[] msec) Computes an array of EPOCH values based on their component parts.
static double	<a href="#"><u>compute</u></a> (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	<a href="#"><u>encode</u></a> (double epoch) Converts an EPOCH value into a readable date/time string.
static java. lang.String[]	<a href="#"><u>encode</u></a> (double[] epochs) Converts an array of EPOCH values into an array of readable date/time strings.
static java. lang.String	<a href="#"><u>encode1</u></a> (double epoch) Converts an EPOCH value into a readable date/time string.
static java. lang.String	<a href="#"><u>encode2</u></a> (double epoch) Converts an EPOCH value into a readable date/time string.
static java. lang.String	<a href="#"><u>encode3</u></a> (double epoch) Converts an EPOCH value into a readable date/time string.
static java. lang.String	<a href="#"><u>encode4</u></a> (double epoch) Converts an EPOCH value into a readable date/time, ISO8601 string.
static java. lang.String	<a href="#"><u>encodex</u></a> (double epoch, java.lang.String formatString) Converts an EPOCH value into a readable date/time string using the specified format.
static double	<a href="#"><u>parse</u></a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.

static double []	<a href="#">parse</a> (java.lang.String[] inStrings) This function parses an array of date/time strings and returns an array of EPOCH values.
static double	<a href="#">parse1</a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	<a href="#">parse2</a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	<a href="#">parse3</a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.
static double	<a href="#">parse4</a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH value.

### Methods inherited from class java.lang.Object

`equals`, `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 string 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 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`

---

## parse

```
public static double[] parse(java.lang.String[] inStrings)  
    throws CDFException
```

This function parses an array of date/time strings and returns an array of EPOCH values. The string 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 encode.

**Parameters:**

`inStrings` - the epochs in string representation

**Returns:**

the values of the epoch represented by `inStrings` or null if null or an empty input array is detected

**Throws:**

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

---

## 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.ttttttt
Examples:    19950508.0000000
             19671231.58      (== 19671213.5800000)
```

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 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 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 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 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

---

## parse4

```
public static double parse4(java.lang.String inString)  
    throws CDFException
```

This function parses an input date/time string and returns an EPOCH value. The format must be an ISO8601 and is exactly as shown below.

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



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(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

---

## encode

```
public static java.lang.String[] encode(double[] epochs)
```

Converts an array of EPOCH values into an array of readable date/time strings.

```
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:**

epochs - the epoch values

**Returns:**

Strings representing the epochs or null if null or an empty input array is detected

---

## 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

---

## encode4

```
public static java.lang.String encode4(double epoch)
```

Converts an EPOCH value into a readable date/time, ISO8601 string.

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

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.

---

## compute

```
public static double[] compute(long[] year,  
                                long[] month,  
                                long[] day)  
    throws CDFException
```

Computes an array of EPOCH values based on their component parts.

**Parameters:**

year - the year array  
month - the month array  
day - the day array

**Returns:**

an array of epoch values or null if an invalid input array(s) is detected.

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

---

## compute

```
public static double[] compute(long[] year,  
                                long[] month,  
                                long[] day,  
                                long[] hour)  
    throws CDFException
```

Computes an array of EPOCH values based on their component parts.

**Parameters:**

year - the year array  
month - the month array  
day - the day array  
hour - the hour array

**Returns:**

an array of epoch values or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

---

## compute

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

Computes an array of EPOCH values based on their component parts.

**Parameters:**

year - the year array  
month - the month array  
day - the day array  
hour - the hour array  
minute - the minute array

**Returns:**

an array of epoch values or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

---

## compute

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

Computes an array of EPOCH values based on their component parts.

**Parameters:**

year - the year array

month - the month array

day - the day array

hour - the hour array

minute - the minute array

second - the second array

**Returns:**

an array of epoch values or null if an invalid input array(s) is detected

**Throws:**

[CDFException](#) - an ILLEGAL\_EPOCH\_FIELD if an illegal component value is detected.

---

## compute

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

Computes an array of EPOCH values based on their component parts.

**Parameters:**

year - the year array

month - the month array

day - the day array  
hour - the hour array  
minute - the minute array  
second - the second array  
msec - the millisecond array

**Returns:**

an array of epoch values or null if an invalid input array(s) is detected

**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

---

## breakdown

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

Breaks an array of EPOCH values down into its component parts.



**Parameters:**

`epochs` - the array of epoch values to break down

**Returns:**

a 2-dimensional array, the first element being the row, while the second element containing the epoch parts, as follows:

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

or null if null or an empty input array is detected

---

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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
```

This class contains the handy utility routines (methods) called by the CDF applications to handle epoch data of CDF's CDF\_EPOCH16 data type.

### Version:

#### 1.0 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));
System.out.println(Epoch16.encode4(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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#), [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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#), [CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#), [CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#), [CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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 INT8](#), [CDF INTERNAL\\_ERROR](#),  
[CDF LEAPSECONDLASTUPDATED](#), [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](#),  
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## Constructor Summary

[Epoch16](#)( )

## Method Summary

static long[] [breakdown](#)(java.lang.Object epoch)

Breaks an EPOCH16 value down into its component parts.

static double	<a href="#"><u>compute</u></a> (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	<a href="#"><u>encode</u></a> (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	<a href="#"><u>encode1</u></a> (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	<a href="#"><u>encode2</u></a> (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	<a href="#"><u>encode3</u></a> (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time string.
static java.lang.String	<a href="#"><u>encode4</u></a> (java.lang.Object epoch) Converts an EPOCH16 value into a readable date/time, ISO8601 string.
static java.lang.String	<a href="#"><u>encodex</u></a> (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	<a href="#"><u>parse</u></a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	<a href="#"><u>parse1</u></a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	<a href="#"><u>parse2</u></a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	<a href="#"><u>parse3</u></a> (java.lang.String inString) This function parses an input date/time string and returns an EPOCH16 value.
static java.lang.Object	<a href="#"><u>parse4</u></a> (java.lang.String inString) This function parses an input date/time, ISO8601 string and returns an EPOCH16 value.

### Methods inherited from class java.lang.Object

equals, 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

---

## parse4

```
public static java.lang.Object parse4(java.lang.String inString)
    throws CDFException
```

This function parses an input date/time, ISO8601 string and returns an EPOCH16 value. The format must be exactly as shown below.

```
Format:          yyyy-mm-ddThh:mm:ss.cccmmmmnnnppp
Examples:        1990-04-01T03:05:02.000000000000
                  1993-10-10T23:45:49.999999999999
```

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

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:	<code>yyyymmdd.tttttttttttttttt</code>
Examples:	<code>19900401.365889312341234</code> <code>19611231.0000000000000000</code>

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 :	yyyymmddhhmss
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

---

## encode4

```
public static java.lang.String encode4(java.lang.Object epoch)
```

Converts an EPOCH16 value into a readable date/time, ISO8601 string.

Format:	yyyy-mm-ddThh:mm:ss.cccmmnnppp
Examples:	1990-04-01T03:05:02.000000000000
	1993-10-10T23:45:49.999999999999

This format is the same as that expected by `parse4`.

**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
7	usec
8	nsec
9	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[]	<a href="#">breakdown</a> (double epoch) Mirrors EPOCHbreakdown from the CDF library.
static double	<a href="#">compute</a> (long year, long month, long day, long hour, long minute, long second, long msec) Mirrors computeEPOCH from the CDF library.
static java. lang.String	<a href="#">encode</a> (double epoch) Mirrors encodeEPOCH from the CDF library.
static java. lang.String	<a href="#">encode1</a> (double epoch) Mirrors encodeEPOCH1 from the CDF library.
static java. lang.String	<a href="#">encode2</a> (double epoch) Mirrors encodeEPOCH2 from the CDF library.
static java. lang.String	<a href="#">encode3</a> (double epoch) Mirrors encodeEPOCH3 from the CDF library.
static java. lang.String	<a href="#">encode4</a> (double epoch) Mirrors encodeEPOCH4 from the CDF library.
static java. lang.String	<a href="#">encodex</a> (double epoch, java.lang.String format) Mirrors encodeEPOCHx from the CDF library.
static double	<a href="#">parse</a> (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.
static double	<a href="#">parse1</a> (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.

static double	<a href="#">parse2</a> (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.
static double	<a href="#">parse3</a> (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.
static double	<a href="#">parse4</a> (java.lang.String sEpoch) Mirrors parseEPOCH from CDF library.

### Methods inherited from class java.lang.Object

`equals`, `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

## **encode4**

```
public static java.lang.String encode4(double epoch)
```

Mirrors `encodeEPOCH4` from the CDF library. See Section 8.6 of the CDF C Reference Manual Version 2.6 for details

---

## **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

## parse

```
public static double parse(java.lang.String sEpoch)
```

Mirrors parseEPOCH from CDF library. See Section 8.8 of the CDF C Reference Manual Version 2.6 for details

---

## 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



## parse4

```
public static double parse4(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 CDFException

```
java.lang.Object
├ java.lang.Throwable
│   └ java.lang.Exception
│       └ gsfc.nssdc.cdf.CDFException
```

### All Implemented Interfaces:

[CDFConstants](#), [java.io.Serializable](#)

---

```
public 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [CLOSE](#), [COLUMN\\_MAJOR](#), [COMPRESS\\_CACHESIZE](#),  
[COMPRESSION\\_ERROR](#), [CONFIRM](#), [CORRUPTED\\_V2\\_CDF](#), [CORRUPTED\\_V3\\_CDF](#),  
[CREATE](#), [CURgENTRY\\_EXISTENCE](#), [CURrENTRY\\_EXISTENCE](#),

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[DECOMPRESSION\\_ERROR](#) , [DECSTATION\\_DECODING](#) , [DECSTATION\\_ENCODING](#) ,  
[DEFAULT\\_BYTE\\_PADVALUE](#) , [DEFAULT\\_CHAR\\_PADVALUE](#) ,  
[DEFAULT\\_DOUBLE\\_PADVALUE](#) , [DEFAULT\\_EPOCH\\_PADVALUE](#) ,  
[DEFAULT\\_EPOCH16\\_PADVALUE](#) , [DEFAULT\\_FLOAT\\_PADVALUE](#) ,  
[DEFAULT\\_INT1\\_PADVALUE](#) , [DEFAULT\\_INT2\\_PADVALUE](#) , [DEFAULT\\_INT4\\_PADVALUE](#) ,  
[DEFAULT\\_INT8\\_PADVALUE](#) , [DEFAULT\\_REAL4\\_PADVALUE](#) ,  
[DEFAULT\\_REAL8\\_PADVALUE](#) , [DEFAULT\\_TT2000\\_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](#) , [EPOCH4\\_STRING\\_LEN](#) ,  
[EPOCH4\\_STRING\\_LEN\\_EXTEND](#) , [EPOCHx\\_FORMAT\\_MAX](#) , [EPOCHx\\_STRING\\_MAX](#) ,  
[FILLED\\_TT2000\\_VALUE](#) , [FORCED\\_PARAMETER](#) , [gENTRY](#) , [gENTRY\\_DATA](#) ,  
[gENTRY\\_DATASPEC](#) , [gENTRY\\_DATATYPE](#) , [gENTRY\\_EXISTENCE](#) ,  
[gENTRY\\_NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
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[ILLEGAL\\_EPOCH\\_VALUE](#) , [ILLEGAL\\_FOR\\_SCOPE](#) , [ILLEGAL\\_IN\\_zMODE](#) ,  
[ILLEGAL\\_ON\\_V1\\_CDF](#) , [ILLEGAL\\_TT2000\\_VALUE](#) , [IS\\_A\\_NETCDF](#) ,  
[LIB\\_COPYRIGHT](#) , [LIB\\_INCREMENT](#) , [LIB\\_RELEASE](#) , [LIB\\_subINCREMENT](#) ,  
[LIB\\_VERSION](#) , [MAC\\_DECODING](#) , [MAC\\_ENCODING](#) , [MD5\\_CHECKSUM](#) , [MULTI\\_FILE](#) ,  
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[NEGtoPOSfp0off](#) , [NEGtoPOSfp0on](#) , [NETWORK\\_DECODING](#) , [NETWORK\\_ENCODING](#) ,  
[NeXT\\_DECODING](#) , [NeXT\\_ENCODING](#) , [NO\\_ATTR\\_SELECTED](#) , [NO\\_CDF\\_SELECTED](#) ,  
[NO\\_CHECKSUM](#) , [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](#) , [NONE\\_CHECKSUM](#) , [NOT\\_A\\_CDF](#) ,  
[NOT\\_A\\_CDF\\_OR\\_NOT\\_SUPPORTED](#) , [NOVARY](#) , [NULL](#) , [OPEN](#) ,  
[OPTIMAL\\_ENCODING\\_TREES](#) , [OTHER\\_CHECKSUM](#) , [PAD\\_SPARSERECORDS](#) ,  
[PPC\\_DECODING](#) , [PPC\\_ENCODING](#) , [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 RECORDS RENUMBER](#), [rVAR REC VARY](#), [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](#), [TT2000 0 STRING LEN](#), [TT2000 1 STRING LEN](#), [TT2000 2 STRING LEN](#), [TT2000 3 STRING LEN](#), [TT2000 CDF MAYNEEDUPDATE](#), [TT2000 TIME ERROR](#), [TT2000 USED OUTDATED TABLE](#), [UNABLE TO PROCESS CDF](#), [UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#), [VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR ALREADY CLOSED](#), [VAR CLOSE ERROR](#), [VAR CREATE ERROR](#), [VAR DELETE ERROR](#), [VAR EXISTS](#), [VAR NAME TRUNC](#), [VAR OPEN ERROR](#), [VAR READ ERROR](#), [VAR SAVE 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](#), [ZLIB COMPRESS ERROR](#), [ZLIB UNCOMPRESS ERROR](#), [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\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [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	<a href="#">getCurrentStatus</a> ( )
	Gets the status code that caused CDFException.
static java. lang.String	<a href="#">getStatusMsg</a> (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

[equals](#), [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.

### Version:

Version 1.0

---

## Constructor Summary

[CDFNativeLibrary](#)( )

## Method Summary

void	<a href="#">cdflib</a> ( <a href="#">CDF</a> theCDF, <a href="#">CDFObject</a> cdfObject, java.util.Vector cmds) Calls the Java Native Interface (JNI) program, cdfNativeLibrary.c.
------	--

## Methods inherited from class `java.lang.Object`

`equals`, `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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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.

### Version:

1.0

---

## Method Summary

void	<a href="#">delete</a> ( ) Deletes the current object.
java. lang. String	<a href="#">getName</a> ( ) Returns the name of the current object.
void	<a href="#">rename</a> ( java.lang.String name ) Renames the current object.

---

## Method Detail

### getName

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

Returns the name of the current object.

**Returns:**

the name of the current object

---

## rename

```
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

```
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

### Version:

\$Id: CDFTools.java,v 1.1.1.1 2015/02/11 20:35:43 liu Exp \$

## Field Summary

static int	<a href="#">ALL_VALUES</a>
static int	<a href="#">NAMED_VALUES</a>
static int	<a href="#">NO_REPORTS</a>



static int	<a href="#"><u>NO_VALUES</u></a>
static int	<a href="#"><u>NRV_VALUES</u></a>
static int	<a href="#"><u>REPORT_ERRORS</u></a>
static int	<a href="#"><u>REPORT_INFORMATION</u></a>
static int	<a href="#"><u>REPORT_WARNINGS</u></a>
static int	<a href="#"><u>RV_VALUES</u></a>

### 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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 INT8](#), [CDF INTERNAL ERROR](#),  
[CDF LEAPSECONDLASTUPDATED](#), [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 SAVE ERROR](#), [CDF SCRATCHDIR](#),  
[CDF STATUS](#), [CDF STATUSTEXT\\_LEN](#), [CDF TIME TT2000](#), [CDF UCHAR](#),  
[CDF UINT1](#), [CDF UINT2](#), [CDF UINT4](#), [CDF VAR\\_NAME\\_LEN](#),  
[CDF VAR\\_NAME\\_LEN256](#), [CDF VERSION](#), [CDF WARN](#), [CDF WRITE ERROR](#),  
[CDF zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM ERROR](#),  
[CHECKSUM NOT ALLOWED](#), [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 EPOCH16 PADVALUE](#), [DEFAULT FLOAT PADVALUE](#),  
[DEFAULT INT1 PADVALUE](#), [DEFAULT INT2 PADVALUE](#), [DEFAULT INT4 PADVALUE](#),  
[DEFAULT INT8 PADVALUE](#), [DEFAULT REAL4 PADVALUE](#),  
[DEFAULT REAL8 PADVALUE](#), [DEFAULT TT2000 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](#), [EPOCH4 STRING\\_LEN](#),  
[EPOCH4 STRING\\_LEN\\_EXTEND](#), [EPOCHx FORMAT MAX](#), [EPOCHx STRING MAX](#),  
[FILLED TT2000 VALUE](#), [FORCED PARAMETER](#), [gENTRY](#), [gENTRY\\_DATA](#),  
[gENTRY\\_DATASPEC](#), [gENTRY\\_DATATYPE](#), [gENTRY EXISTENCE](#),  
[gENTRY\\_NUMELEMS](#), [GET](#), [GETCDFCHECKSUM](#), [GETCDFFILEBACKWARD](#),  
[GETCDFVALIDATE](#), [GETLEAPSECONDSENVVAR](#), [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](#), [ILLEGAL\\_TT2000\\_VALUE](#), [IS\\_A\\_NETCDF](#), [LIB\\_COPYRIGHT](#), [LIB\\_INCREMENT](#), [LIB\\_RELEASE](#), [LIB\\_subINCREMENT](#), [LIB\\_VERSION](#), [MAC\\_DECODING](#), [MAC\\_ENCODING](#), [MD5\\_CHECKSUM](#), [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\\_CHECKSUM](#), [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](#), [NONE\\_CHECKSUM](#), [NOT\\_A\\_CDF](#), [NOT\\_A\\_CDF\\_OR\\_NOT\\_SUPPORTED](#), [NOVARY](#), [NULL](#), [OPEN](#), [OPTIMAL\\_ENCODING\\_TREES](#), [OTHER\\_CHECKSUM](#), [PAD\\_SPARSERECORDS](#), [PPC\\_DECODING](#), [PPC\\_ENCODING](#), [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\\_RECORDS\\_RENUMBER](#), [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](#), [TT2000\\_0\\_STRING\\_LEN](#),

[TT2000\\_1\\_STRING\\_LEN](#), [TT2000\\_2\\_STRING\\_LEN](#), [TT2000\\_3\\_STRING\\_LEN](#),  
[TT2000\\_CDF\\_MAYNEEDUPDATE](#), [TT2000\\_TIME\\_ERROR](#),  
[TT2000\\_USED\\_OUTDATED\\_TABLE](#), [UNABLE\\_TO\\_PROCESS\\_CDF](#),  
[UNKNOWN\\_COMPRESSION](#), [UNKNOWN\\_SPARSENESS](#), [UNSUPPORTED\\_OPERATION](#),  
[VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR\\_ALREADY\\_CLOSED](#),  
[VAR\\_CLOSE\\_ERROR](#), [VAR\\_CREATE\\_ERROR](#), [VAR\\_DELETE\\_ERROR](#), [VAR\\_EXISTS](#),  
[VAR\\_NAME\\_TRUNC](#), [VAR\\_OPEN\\_ERROR](#), [VAR\\_READ\\_ERROR](#), [VAR\\_SAVE\\_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](#),  
[ZLIB\\_COMPRESS\\_ERROR](#), [ZLIB\\_UNCOMPRESS\\_ERROR](#), [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\\_RECORDS\\_RENUMBER](#), [zVAR\\_RECVAR](#), [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	<p><a href="#">skeletonCDF</a>(java.lang.String skeletonName, java.lang.String cdfName, boolean delete, boolean log, boolean neg2posfp0, boolean statistics, int zMode, int reportType, int cacheSize)</p> <p>skeletonCDF produces a CDF file from a skeleton table.</p>
-------------	--

static void	<p><a href="#"><b>skeletonCDF</b></a>(java.lang.String skeletonName, java.lang.String cdfName, boolean delete, boolean log, boolean neg2posfp0, boolean statistics, int zMode, int reportType, int cacheSizeD, int cacheSizeS)  skeletonCDF produces a CDF file from a skeleton table.</p>
static void	<p><a href="#"><b>skeletonCDF</b></a>(java.lang.String skeletonName, java.lang.String cdfName, boolean delete, boolean log, boolean neg2posfp0, boolean statistics, int zMode, int reportType, int cacheSizeD, int cacheSizeS, int cacheSizeC)  skeletonCDF produces a CDF file from a skeleton table.</p>
static void	<p><a href="#"><b>skeletonCDF</b></a>(java.lang.String skeletonName, java.lang.String cdfName, boolean delete, boolean log, boolean neg2posfp0, boolean statistics, int zMode, int reportType, java.lang.String cacheSize)  skeletonCDF produces a CDF file from a skeleton table.</p>
static void	<p><a href="#"><b>skeletonTable</b></a>(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.</p>
static void	<p><a href="#"><b>skeletonTable</b></a>(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 cacheSizeD, int cacheSizeS)  skeletonTable produces a skeleton table from a CDF.</p>
static void	<p><a href="#"><b>skeletonTable</b></a>(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 cacheSizeD, int cacheSizeS, int cacheSizeC)  skeletonTable produces a skeleton table from a CDF.</p>

```
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, java.lang.String cacheSize)
    skeletonTable produces a skeleton table from a CDF.
```

### Methods inherited from class java.lang.Object

```
equals, 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,
```



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 buffers to be used for the CDF's `dotCDF` file. Pass 0 to use the default.

**Note:**

When running an application that use this static method, make sure this `cdf.base` system property is defined (to the cdf installation). For example,  
`java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp`

**Throws:**

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

## 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 cacheSizeD,
        int cacheSizeS)
    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`

`cacheSizeD` - The number of buffers to be used for the CDF's dotCDF file. Pass 0 to use the default.

`cacheSizeS` - The number of buffers to be used for the CDF's staging file. Pass 0 to use the default.

**Note:**

When running an application that use this static method, make sure this **`cdf.base`** system property is defined (to the `cdf` installation). For example,  
`java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp`

**Throws:**

`java.io.IOException`

`java.lang.InterruptedException`

## 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 cacheSizeD,
                                   int cacheSizeS,
                                   int cacheSizeC)
    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`

`cacheSizeD` - The number of buffers to be used for the CDF's `dotCDF` file. Pass 0 to use the default.

`cacheSizeS` - The number of buffers to be used for the CDF's staging file. Pass 0 to use the default.

`cacheSizeC` - The number of buffers to be used for the CDF's compression scratch file. Pass 0 to use the default.

**Note:**

When running an application that use this static method, make sure this `cdf.base` system property is defined (to the cdf installation). For example,  
`java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp`

**Throws:**

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

## 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,
                                   java.lang.String 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).



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 buffers to be used for the CDF's dotCDF file, staging file, and compression scratch file. This field used only in the CDF access process will not change anything to the contents of the skeleton table. Large number(s) will likely reduce physical I/Os if variable data are involved. If this field is null, the 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.

**Note:**

When running an application that use this static method, make sure this **cdf.base** system property is defined (to the cdf installation). For example,

```
java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp
```

**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 cacheSizeD)
```

```
throws java.io.IOException,
        java.lang.InterruptedException
```

skeletonCDF produces a CDF file from a skeleton table. A skeleton table is a text file which can be made through a text editor, or by SkeletonCDF program from an existing CDF.

### Parameters:

`skeletonName` - is the pathname of the skeleton table to be used to create a CDF. (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 created CDF from the skeleton table. 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

`cacheSizeD` - The number of buffers to be used for the CDF's dotCDF file. Pass 0 to use the default.

**Note:**

When running an application that use this static method, make sure this **cdf.base** system property is defined (to the cdf installation). For example,

```
java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp
```

**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 cacheSizeD,
                                int cacheSizeS)
                                throws java.io.IOException,
                                       java.lang.InterruptedException
```

skeletonCDF produces a CDF file from a skeleton table. A skeleton table is a text file which can be made through a text editor, or by SkeletonCDF program from an existng CDF.

**Parameters:**

**skeletonName** - is the pathname of the skeleton table to be used to create a CDF. (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 created CDF from the skeleton table. 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

`cacheSizeD` - The number of buffers to be used for the CDF's dotCDF file. Pass 0 to use the default.

`cacheSizeS` - The number of buffers to be used for the CDF's staging file. Pass 0 to use the default.

### Note:

When running an application that use this static method, make sure this **`cdf.base`** system property is defined (to the cdf installation). For example,  
`java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp`

### Throws:

`java.io.IOException`  
`java.lang.InterruptedExpection`

## 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 cacheSizeD,
        int cacheSizeS,
        int cacheSizeC)
throws java.io.IOException,
        java.lang.InterruptedException

```

skeletonCDF produces a CDF file from a skeleton table. A skeleton table is a text file which can be made through a text editor, or by SkeletonCDF program from an existing CDF.

### Parameters:

`skeletonName` - is the pathname of the skeleton table to be used to create a CDF. (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 created CDF from the skeleton table. 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

`cacheSizeD` - The number of buffers to be used for the CDF's dotCDF file. Pass 0 to use the default.

`cacheSizeS` - The number of buffers to be used for the CDF's staging file. Pass 0 to use the default.

`cacheSizeC` - The number of buffers to be used for the CDF's compression scratch file. Pass 0 to use the default.

### Note:

When running an application that use this static method, make sure this **`cdf.base`** system property is defined (to the cdf installation). For example,

```
java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp
```

### 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,  
                                java.lang.String cacheSize)  
    throws java.io.IOException,  
           java.lang.InterruptedException
```

`skeletonCDF` produces a CDF file from a skeleton table. A skeleton table is a text file which can be made through a text editor, or by `SkeletonCDF` program from an existng CDF.

### Parameters:

`skeletonName` - is the pathname of the skeleton table to be used to create a CDF. (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 created CDF from the skeleton table. 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 buffers to be used for the CDF's dotCDF file, staging file, and compression scratch file. This field used only in the CDF access process will not change the contents of the CDF. Large number(s) will likely reduce physical I/Os if variable data are involved. If this field is null, 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.

### Note:

When running an application that use this static method, make sure this **cdf.base** system property is defined (to the cdf installation). For example,

```
java -Dcdf.base=/home/cdf/cdf34_1-dist MyApp
```

**Throws:**

```
java.io.IOException
```

```
java.lang.InterruptedException
```

---

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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.

### Version:

1.0, 2.0 03/18/05 Selection of current CDF, attribute and entry are done as part of operations passed to JNI. JNI call is synchronized so only one process is allowed in a JVM, due to multi-thread safety. The select method will never be called.

### 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [CDF\\_MAJORITY](#), [CDF\\_MAX\\_DIMS](#),  
[CDF\\_MAX\\_PARAMS](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [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 EPOCH16 PADVALUE , DEFAULT FLOAT PADVALUE ,  
DEFAULT INT1 PADVALUE , DEFAULT INT2 PADVALUE , DEFAULT INT4 PADVALUE ,  
DEFAULT INT8 PADVALUE , DEFAULT REAL4 PADVALUE ,  
DEFAULT REAL8 PADVALUE , DEFAULT TT2000 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 , EPOCH4 STRING LEN ,  
EPOCH4 STRING LEN EXTEND , EPOCHx FORMAT MAX , EPOCHx STRING MAX ,  
FILLED TT2000 VALUE , FORCED PARAMETER , gENTRY , gENTRY DATA ,  
gENTRY DATASPEC , gENTRY DATATYPE , gENTRY EXISTENCE ,  
gENTRY NUMELEMS , GET , GETCDFCHECKSUM , GETCDFFILEBACKWARD ,  
GETCDFVALIDATE , GETLEAPSECONDSENVVAR , 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 , ILLEGAL TT2000 VALUE , IS A NETCDF ,  
LIB COPYRIGHT , LIB INCREMENT , LIB RELEASE , LIB subINCREMENT ,  
LIB VERSION , MAC DECODING , MAC ENCODING , MD5 CHECKSUM , 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 CHECKSUM , 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 , NONE CHECKSUM , NOT A CDF ,  
NOT A CDF OR NOT SUPPORTED , NOVARY , NULL , OPEN ,  
OPTIMAL ENCODING TREES , OTHER CHECKSUM , PAD SPARSERECORDS ,

[PPC\\_DECODING](#), [PPC\\_ENCODING](#), [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\\_RECORDS\\_RENUMBER](#), [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](#), [TT2000\\_0\\_STRING\\_LEN](#),  
[TT2000\\_1\\_STRING\\_LEN](#), [TT2000\\_2\\_STRING\\_LEN](#), [TT2000\\_3\\_STRING\\_LEN](#),  
[TT2000\\_CDF\\_MAYNEEDUPDATE](#), [TT2000\\_TIME\\_ERROR](#),  
[TT2000\\_USED\\_OUTDATED\\_TABLE](#), [UNABLE\\_TO\\_PROCESS\\_CDF](#),  
[UNKNOWN\\_COMPRESSION](#), [UNKNOWN\\_SPARSENESS](#), [UNSUPPORTED\\_OPERATION](#),  
[VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR\\_ALREADY\\_CLOSED](#),  
[VAR\\_CLOSE\\_ERROR](#), [VAR\\_CREATE\\_ERROR](#), [VAR\\_DELETE\\_ERROR](#), [VAR\\_EXISTS](#),  
[VAR\\_NAME\\_TRUNC](#), [VAR\\_OPEN\\_ERROR](#), [VAR\\_READ\\_ERROR](#), [VAR\\_SAVE\\_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](#),  
[ZLIB\\_COMPRESS\\_ERROR](#), [ZLIB\\_UNCOMPRESS\\_ERROR](#), [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](#) ,  
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[zVAR\\_NUMDIMS](#) , [zVAR\\_NUMELEMS](#) , [zVAR\\_NUMRECS](#) , [zVAR\\_PADVALUE](#) ,  
[zVAR\\_RECCOUNT](#) , [zVAR\\_RECINTERVAL](#) , [zVAR\\_RECNUMBER](#) , [zVAR\\_RECORDS](#) ,  
[zVAR\\_RECORDS\\_RENUMBER](#) , [zVAR\\_RECVAR](#) , [zVAR\\_RESERVEPERCENT](#) ,  
[zVAR\\_SEQDATA](#) , [zVAR\\_SEQPOS](#) , [zVAR\\_SPARSEARRAYS](#) ,  
[zVAR\\_SPASERECORDS](#) , [zVARs\\_CACHESIZE](#) , [zVARs\\_MAXREC](#) ,  
[zVARs\\_RECDATA](#) , [zVARs\\_RECNUMBER](#)

## Method Summary

static <a href="#">Entry</a>	<a href="#">create</a> ( <a href="#">Attribute</a> myAttribute, long id, long dataType, java.lang.Object data) Creates a new global or variable attribute entry.
void	<a href="#">delete</a> () Deletes this entry.
java.lang.Object	<a href="#">getData</a> () Gets the data for this entry.
long	<a href="#">getDataType</a> () Gets the CDF data type of this entry.
long	<a href="#">getID</a> () Gets the ID of this entry.
java.lang.String	<a href="#">getName</a> () Gets the name of this entry.
long	<a href="#">getNumElements</a> () Gets the number of elements in this entry.
void	<a href="#">putData</a> (long dataType, java.lang.Object data) Put the entry data into the CDF.
void	<a href="#">rename</a> (java.lang.String name) This method is here as a placeholder since the Entry class implements the CDFObject interface that includes "rename".
void	<a href="#">updateDataSpec</a> (long dataType, long numElements) Update the data specification (data type and number of elements) of the entry.

## Methods inherited from class java.lang.Object

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

## Method Detail

### 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_UINT2` - 2-byte, unsigned integer
- `CDF_INT4` - 4-byte, signed integer
- `CDF_UINT4` - 4-byte, unsigned integer
- `CDF_INT8` - 8-byte, signed 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
- `CDF_TIME_TT2000` - 8-byte, signed integer

`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()  
    throws CDFException
```

Gets the data for this entry.

**Returns:**

the data for this entry

**Throws:**

[CDFException](#)

---

## 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](#)

---

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[PREV CLASS](#) [NEXT CLASS](#)

[FRAMES](#) [NO FRAMES](#) [All Classes](#)

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

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

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

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

---

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`.

### Version:

1.0, 2.0 03/18/05 Selection of current CDF and variable are done as part of operations passed to JNI. JNI call is synchronized so only one process is allowed in a JVM, due to multi-thread safety. The select method will never be called.

### 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](#), [BACKWARD](#), [BACKWARDFILEoff](#), [BACKWARDFILEon](#),  
[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\\_CHECKSUM](#), [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\\_INSERT\\_RECORDS](#),  
[CANNOT\\_SPARSEARRAYS](#), [CANNOT\\_SPARSERECORDS](#), [CDF](#), [CDF\\_ACCESS](#),  
[CDF\\_ATTR\\_NAME\\_LEN](#), [CDF\\_ATTR\\_NAME\\_LEN256](#), [CDF\\_BYTE](#), [CDF\\_CACHESIZE](#),  
[CDF\\_CHAR](#), [CDF\\_CHECKSUM](#), [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\\_INT8](#), [CDF\\_INTERNAL\\_ERROR](#),  
[CDF\\_LEAPSECONDLASTUPDATED](#), [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\\_SAVE\\_ERROR](#), [CDF\\_SCRATCHDIR](#),  
[CDF\\_STATUS](#), [CDF\\_STATUSTEXT\\_LEN](#), [CDF\\_TIME\\_TT2000](#), [CDF\\_UCHAR](#),  
[CDF\\_UINT1](#), [CDF\\_UINT2](#), [CDF\\_UINT4](#), [CDF\\_VAR\\_NAME\\_LEN](#),  
[CDF\\_VAR\\_NAME\\_LEN256](#), [CDF\\_VERSION](#), [CDF\\_WARN](#), [CDF\\_WRITE\\_ERROR](#),  
[CDF\\_zMODE](#), [CDFwithSTATS](#), [CHECKSUM](#), [CHECKSUM\\_ERROR](#),  
[CHECKSUM\\_NOT\\_ALLOWED](#), [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\\_EPOCH16\\_PADVALUE](#) , [DEFAULT\\_FLOAT\\_PADVALUE](#) ,  
[DEFAULT\\_INT1\\_PADVALUE](#) , [DEFAULT\\_INT2\\_PADVALUE](#) , [DEFAULT\\_INT4\\_PADVALUE](#) ,  
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[DEFAULT\\_UINT2\\_PADVALUE](#) , [DEFAULT\\_UINT4\\_PADVALUE](#) , [DELETE](#) ,  
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[EPOCH\\_STRING\\_LEN](#) , [EPOCH\\_STRING\\_LEN\\_EXTEND](#) , [EPOCH1\\_STRING\\_LEN](#) ,  
[EPOCH1\\_STRING\\_LEN\\_EXTEND](#) , [EPOCH2\\_STRING\\_LEN](#) ,  
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[EPOCH3\\_STRING\\_LEN\\_EXTEND](#) , [EPOCH4\\_STRING\\_LEN](#) ,  
[EPOCH4\\_STRING\\_LEN\\_EXTEND](#) , [EPOCHx\\_FORMAT\\_MAX](#) , [EPOCHx\\_STRING\\_MAX](#) ,  
[FILLED\\_TT2000\\_VALUE](#) , [FORCED\\_PARAMETER](#) , [gENTRY](#) , [gENTRY\\_DATA](#) ,  
[gENTRY\\_DATASPEC](#) , [gENTRY\\_DATATYPE](#) , [gENTRY\\_EXISTENCE](#) ,  
[gENTRY\\_NUMELEMS](#) , [GET](#) , [GETCDFCHECKSUM](#) , [GETCDFFILEBACKWARD](#) ,  
[GETCDFVALIDATE](#) , [GETLEAPSECONDSENVVAR](#) , [GLOBAL\\_SCOPE](#) ,  
[GZIP\\_COMPRESSION](#) , [HOST\\_DECODING](#) , [HOST\\_ENCODING](#) , [HP\\_DECODING](#) ,  
[HP\\_ENCODING](#) , [HUFF\\_COMPRESSION](#) , [IBM\\_PC\\_OVERFLOW](#) , [IBMPC\\_DECODING](#) ,  
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[ILLEGAL\\_EPOCH\\_VALUE](#) , [ILLEGAL\\_FOR\\_SCOPE](#) , [ILLEGAL\\_IN\\_zMODE](#) ,  
[ILLEGAL\\_ON\\_V1\\_CDF](#) , [ILLEGAL\\_TT2000\\_VALUE](#) , [IS\\_A\\_NETCDF](#) ,  
[LIB\\_COPYRIGHT](#) , [LIB\\_INCREMENT](#) , [LIB\\_RELEASE](#) , [LIB\\_subINCREMENT](#) ,  
[LIB\\_VERSION](#) , [MAC\\_DECODING](#) , [MAC\\_ENCODING](#) , [MD5\\_CHECKSUM](#) , [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\\_CHECKSUM](#) , [NO\\_COMPRESSION](#) , [NO\\_DELETE\\_ACCESS](#) , [NO\\_ENTRY\\_SELECTED](#) ,  
[NO\\_MORE\\_ACCESS](#) , [NO\\_PADVALUE\\_SPECIFIED](#) , [NO\\_SPARSEARRAYS](#) ,  
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[NO\\_SUCH\\_ENTRY](#) , [NO\\_SUCH\\_RECORD](#) , [NO\\_SUCH\\_VAR](#) , [NO\\_VAR\\_SELECTED](#) ,  
[NO\\_VARS\\_IN\\_CDF](#) , [NO\\_WRITE\\_ACCESS](#) , [NONE\\_CHECKSUM](#) , [NOT\\_A\\_CDF](#) ,  
[NOT\\_A\\_CDF\\_OR\\_NOT\\_SUPPORTED](#) , [NOVARY](#) , [NULL](#) , [OPEN](#) ,  
[OPTIMAL\\_ENCODING\\_TREES](#) , [OTHER\\_CHECKSUM](#) , [PAD\\_SPARSERECORDS](#) ,  
[PPC\\_DECODING](#) , [PPC\\_ENCODING](#) , [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 RECORDS RENUMBER](#), [rVAR REC VARY](#),  
[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](#), [TT2000 0 STRING LEN](#),  
[TT2000 1 STRING LEN](#), [TT2000 2 STRING LEN](#), [TT2000 3 STRING LEN](#),  
[TT2000 CDF MAYNEEDUPDATE](#), [TT2000 TIME ERROR](#),  
[TT2000 USED OUTDATED TABLE](#), [UNABLE TO PROCESS CDF](#),  
[UNKNOWN COMPRESSION](#), [UNKNOWN SPARSENESS](#), [UNSUPPORTED OPERATION](#),  
[VALIDATE](#), [VALIDATEFILEoff](#), [VALIDATEFILEon](#), [VAR ALREADY CLOSED](#),  
[VAR CLOSE ERROR](#), [VAR CREATE ERROR](#), [VAR DELETE ERROR](#), [VAR EXISTS](#),  
[VAR NAME TRUNC](#), [VAR OPEN ERROR](#), [VAR READ ERROR](#), [VAR SAVE 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](#),  
[ZLIB COMPRESS ERROR](#), [ZLIB UNCOMPRESS ERROR](#), [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 RECORDS RENUMBER](#) , [zVAR RECVARY](#) , [zVAR RESERVEPERCENT](#) ,  
[zVAR SEQDATA](#) , [zVAR SEQPOS](#) , [zVAR SPARSEARRAYS](#) ,  
[zVAR SPARSERECORDS](#) , [zVARs CACHESIZE](#) , [zVARs MAXREC](#) ,  
[zVARs RECDATA](#) , [zVARs RECNUMBER](#)

## Method Summary

void	<a href="#">allocateBlock</a> (long firstRec, long lastRec) Allocates a range of records for this variable.
void	<a href="#">allocateRecords</a> (long num0toRecords) Allocates a number of records, starting from record number 0.
boolean	<a href="#">checkPadValueExistence</a> () Checks if the pad value has been defined for this variable.
void	<a href="#">concatenateDataRecords</a> ( <a href="#">Variable</a> destVar) Concatenates this variable's data records to the destination variable.
long	<a href="#">confirmCacheSize</a> () Gets the number of 512-byte cache buffers defined for this variable.
long	<a href="#">confirmPadValue</a> () Checks the existence of an explicitly specified pad value for the current z variable.
long	<a href="#">confirmReservePercent</a> () Gets the reserve percentage set for this variable.
<a href="#">Variable</a>	<a href="#">copy</a> ( <a href="#">CDF</a> destCDF, java.lang.String varName) Copies this variable into a new variable and puts it into the designated CDF file.
<a href="#">Variable</a>	<a href="#">copy</a> (java.lang.String varName) Copies this variable to a new variable.
void	<a href="#">copyDataRecords</a> ( <a href="#">Variable</a> destVar) Copies this variable's data to the destination variable.



static <a href="#">Variable</a>	<a href="#">create</a> (CDF myCDF, java.lang.String varName, long dataType, long numElements, long numDims, long [] dimSizes, long recVary, long[] dimVarys) Creates a variable.
void	<a href="#">delete</a> () Deletes this variable.
void	<a href="#">deleteRecords</a> (long firstRec, long lastRec) Deletes a range of records from this variable.
void	<a href="#">deleteRecordsRenumber</a> (long firstRec, long lastRec) Deletes a range of records from this variable.
<a href="#">Variable</a>	<a href="#">duplicate</a> (CDF destCDF, java.lang.String varName) Duplicates this variable and put it into the designated CDF file.
<a href="#">Variable</a>	<a href="#">duplicate</a> (java.lang.String varName) Duplicates this variable to a new variable.
long	<a href="#">getAllocatedFrom</a> (long recNum) Inquires the next allocated record at or after a given record for this variable.
long	<a href="#">getAllocatedTo</a> (long firstRec) Inquires the last allocated record (before the next unallocated record) at or after a given record for this variable.
java.util. Vector	<a href="#">getAttributes</a> () Returns the variable attributes that are associated with this variable.
long	<a href="#">getBlockingFactor</a> () Gets the blocking factor for this variable.
java.lang. String	<a href="#">getCompression</a> () Gets the string representation of the compression type and parameters set for this variable.
long[]	<a href="#">getCompressionParms</a> () Sets the compression parameters of this variable.
long	<a href="#">getCompressionPct</a> () Gets the compression percentage rate of this variable.
long	<a href="#">getCompressionType</a> () Gets the compression type of this variable.

long	<a href="#"><u>getDataType</u></a> ( ) Gets the CDF data type of this variable.
long[]	<a href="#"><u>getDimSizes</u></a> ( ) Gets the dimensions size of this variable.
long[]	<a href="#"><u>getDimVariances</u></a> ( ) Gets the dimension variances for this variable.
java.lang. Object	<a href="#"><u>getEntryData</u></a> (java.lang.String attrName) Gets the attribute entry data for this variable.
java.lang. Object	<a href="#"><u>getHyperData</u></a> (long recNum, long recCount, long recInterval, long[] dimIndices, long [] dimCounts, long[] dimIntervals) Reads one or more values from the current z variable.
<a href="#"><u>CDFData</u></a>	<a href="#"><u>getHyperDataObject</u></a> (long recNum, long recCount, long recInterval, long[] dimIndices, long [] dimCounts, long[] dimIntervals) Reads one or more values from the current z variable.
long	<a href="#"><u>getID</u></a> ( ) Gets the ID of this variable.
long	<a href="#"><u>getMaxAllocatedRecord</u></a> ( ) Gets the maximum allocated record number for this variable.
long	<a href="#"><u>getMaxWrittenRecord</u></a> ( ) Gets the last written record number, beginning with 0.
<a href="#"><u>CDF</u></a>	<a href="#"><u>getMyCDF</u></a> ( ) Gets the CDF object to which this variable belongs.
java.lang. String	<a href="#"><u>getName</u></a> ( ) Gets the name of this variable.
long	<a href="#"><u>getNumAllocatedRecords</u></a> ( ) Gets the number of records allocated for this variable.
long	<a href="#"><u>getNumDims</u></a> ( ) Gets the number of dimensions for this variable.
long	<a href="#"><u>getNumElements</u></a> ( ) Gets the number of elements for this variable.

long	<a href="#">getNumWrittenRecords</a> ( ) Gets the number of records physically written (not allocated) for this variable.
java.lang. Object	<a href="#">getPadValue</a> ( ) Gets the pad value for this variable.
java.lang. Object	<a href="#">getRecord</a> (long recNum) Gets a single record from this variable.
<a href="#">CDFData</a>	<a href="#">getRecordObject</a> (long recNum) Get a single record of data from this variable.
<a href="#">CDFData</a>	<a href="#">getRecordsObject</a> (long recNum, long numRecs) Get a number of records of data from this variable.
boolean	<a href="#">getRecVariance</a> ( ) Gets the value of record variance.
java.lang. Object	<a href="#">getScalarData</a> ( ) Gets the scalar data from a non-record varying 0-dimensional variable.
java.lang. Object	<a href="#">getScalarData</a> (long recNum) Get the scalar data from a record varying 0-dimensional variable.
<a href="#">CDFData</a>	<a href="#">getScalarDataObject</a> ( ) Get the scalar data from a non-record varying 0-dimensional variable.
<a href="#">CDFData</a>	<a href="#">getScalarDataObject</a> (long recNum) Get the scalar data from this record varying 0-dimensional variable.
java.lang. Object	<a href="#">getSingleData</a> (long recNum, long[] indices) Gets a single data value.
<a href="#">CDFData</a>	<a href="#">getSingleDataObject</a> (long recNum, long[] indices) Gets a single data object from this variable.
long	<a href="#">getSparseRecords</a> ( ) Gets the sparse record type for this variable.
void	<a href="#">putEntry</a> ( <a href="#">Attribute</a> attr, long dataType, java.lang. Object data) Creates an attribute entry for this variable.
void	<a href="#">putEntry</a> (java.lang.String attrName, long dataType, java.lang.Object data) Creates an attribute entry for this variable.

<a href="#">CDFData</a>	<a href="#">putHyperData</a> (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.
<a href="#">CDFData</a>	<a href="#">putRecord</a> (long recNum, java.lang.Object data) Adds a single record to a record-varying variable.
<a href="#">CDFData</a>	<a href="#">putRecord</a> (java.lang.Object data) Adds a single record to a non-record-varying variable.
<a href="#">CDFData</a>	<a href="#">putScalarData</a> (long recNum, java.lang.Object data) Adds a scalar data to this variable (of 0 dimensional).
<a href="#">CDFData</a>	<a href="#">putScalarData</a> (java.lang.Object data) Adds a scalar data to this variable (of 0 dimensional).
<a href="#">CDFData</a>	<a href="#">putSingleData</a> (long recNum, long[] indices, java.lang.Object data) Adds a single data value to this variable.
void	<a href="#">rename</a> (java.lang.String newName) Renames the current variable.
void	<a href="#">selectCacheSize</a> (long cacheSize) Sets the number of 512-byte cache buffers to be used.
void	<a href="#">selectReservePercent</a> (long reservePercent) Sets the reserve percentage to be used for this variable.
void	<a href="#">setBlockingFactor</a> (long blockingFactor) Sets the blocking factor for this variable.
void	<a href="#">setCompression</a> (long cType, long[] cParms) Sets the compression type and parameters for this variable.
void	<a href="#">setDimVariances</a> (long[] dimVariances) Sets the dimension variances for this variable.
void	<a href="#">setInitialRecords</a> (long nRecords) Sets the number of records to be written initially for this variable.
void	<a href="#">setPadValue</a> (java.lang.Object padValue) Sets the pad value for this variable.
void	<a href="#">setRecVariance</a> (long recVariance) Sets the record variance for this variable.

void	<a href="#">setSparseRecords</a> (long sparseRecords) Sets the sparse record type for this variable.
java.lang. String	<a href="#">toString</a> () Gets the name of this variable.
void	<a href="#">updateDataSpec</a> (long dataType, long numElements) Update the data specification (data type and number of elements) of the variable.

### Methods inherited from class java.lang.Object

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

## Method Detail

### 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\_UINT2 - 2-byte, unsigned integer
- CDF\_INT4 - 4-byte, signed integer
- CDF\_UINT4 - 4-byte, unsigned integer
- CDF\_INT8 - 8-byte, signed 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
- CDF\_TIME\_TT2000 - 8-byte, signed integer

`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 an entire record (containing 6 elements) from the first record from a variable of data type `CDF_INT4`:

```
Variable var = cdf.getVariable("TestData");
int[][] data = (int [][]) var.getRecord(0L);
```

However, if a dimensional variable with all indices being invariant, e.g., 2-dimensional (1x1), the retrieved object will be different. (Since the variable has only one data value per record, it is preferred to be defined as an 0-dim, rather.). The object is not an array, instead, a single Java class item, e.g., `Integer`, `Double`, `Short`, etc. The following example extracts an record from the first record of a variable, 2-dim (1x1), with data type `CDF_INT2`:

```
Variable var = cdf.getVariable("TestVar");
short data = ((Short) var.getRecord(0L)).shortValue();
```

**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 entire record from the first record:

```
Variable var = cdf.getVariable("TestData");
int[][] data = (int [][]) var.getHyperData (0L, 1L, 1L,
new long[] {0,
0},
new long[] {3,
2},
new long[] {1,
1});
```

Note: it returns a 2-dimensional object as only one record is involved. 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.putHyperData (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.putHyperData (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

## 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.

**Overrides:**

`toString` in class `java.lang.Object`

**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. While non-sparse variable records after the last deleted record will be renumbered, the sparse variable records will not.

**Parameters:**

`firstRec` - the first record to be deleted

`lastRec` - the last record to be deleted

**Throws:**

[CDFException](#) - if a problem occurs deleting records

---

## deleteRecordsRenumber

```
public void deleteRecordsRenumber(long firstRec,  
                                   long lastRec)  
    throws CDFException
```

Deletes a range of records from this variable. All records after the last deleted record are renumbered for both the sparse or non-sparse variable after the deletion.

**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.

**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.

**Throws:**

[CDFException](#) - if a problem occurs checking the existence of the pad value Note: The `getPadValue()` method will return a pad value, whether it is the user defined or the default.

---

## getPadValue

```
public java.lang.Object getPadValue()  
    throws CDFException
```

Gets the pad value for this variable.

**Returns:**

the pad value set for this variable

**Throws:**

[CDFException](#) - if a problem occurs reading the pad value

---

## 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. Note: for NO\_PADVALUE\_SPECIFIED, getPadValue method will return the default 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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public static final long	<a href="#">BAD_MALLOC</a>	-2026L
public static final long	<a href="#">BAD_NEGtoPOSfp0_MODE</a>	-2081L
public static final long	<a href="#">BAD_NUM_DIMS</a>	-2008L
public static final long	<a href="#">BAD_NUM_ELEMS</a>	-2011L
public static final long	<a href="#">BAD_NUM_VARS</a>	-2036L
public static final long	<a href="#">BAD_READONLY_MODE</a>	-2073L
public static final long	<a href="#">BAD_REC_COUNT</a>	-2037L
public static final long	<a href="#">BAD_REC_INTERVAL</a>	-2038L
public static final long	<a href="#">BAD_REC_NUM</a>	-2009L
public static final long	<a href="#">BAD_SCOPE</a>	-2010L
public static final long	<a href="#">BAD_SCRATCH_DIR</a>	-2111L
public static final long	<a href="#">BAD_SPARSEARRAYS_PARM</a>	-2110L
public static final long	<a href="#">BAD_VAR_NAME</a>	-2045L
public static final long	<a href="#">BAD_VAR_NUM</a>	-2041L
public static final long	<a href="#">BAD_zMODE</a>	-2072L
public static final long	<a href="#">CANNOT_ALLOCATE_RECORDS</a>	-2103L
public static final long	<a href="#">CANNOT_CHANGE</a>	-2051L
public static final long	<a href="#">CANNOT_COMPRESS</a>	-2091L
public static final long	<a href="#">CANNOT_COPY</a>	-2104L
public static final long	<a href="#">CANNOT_INSERT_RECORDS</a>	-2233L
public static final long	<a href="#">CANNOT_SPARSEARRAYS</a>	-2100L
public static final long	<a href="#">CANNOT_SPARSERECORDS</a>	-2099L
public static final long	<a href="#">CDF_</a>	1L
public static final long	<a href="#">CDF_ACCESS_</a>	201L
public static final long	<a href="#">CDF_ATTR_NAME_LEN</a>	64L
public static final long	<a href="#">CDF_ATTR_NAME_LEN256</a>	256L
public static final long	<a href="#">CDF_BYTE</a>	41L

public static final long	<a href="#">CDF_CACHESIZE</a>	117L
public static final long	<a href="#">CDF_CHAR</a>	51L
public static final long	<a href="#">CDF_CHECKSUM</a>	156L
public static final long	<a href="#">CDF_CLOSE_ERROR</a>	-2055L
public static final long	<a href="#">CDF_COMPRESSION</a>	130L
public static final long	<a href="#">CDF_COPYRIGHT</a>	7L
public static final long	<a href="#">CDF_COPYRIGHT_LEN</a>	256L
public static final long	<a href="#">CDF_CREATE_ERROR</a>	-2066L
public static final long	<a href="#">CDF_DECODING</a>	4L
public static final long	<a href="#">CDF_DELETE_ERROR</a>	-2088L
public static final long	<a href="#">CDF_DOUBLE</a>	45L
public static final long	<a href="#">CDF_ENCODING</a>	3L
public static final long	<a href="#">CDF_EPOCH</a>	31L
public static final long	<a href="#">CDF_EPOCH16</a>	32L
public static final long	<a href="#">CDF_EXISTS</a>	-2013L
public static final long	<a href="#">CDF_FLOAT</a>	44L
public static final long	<a href="#">CDF_FORMAT</a>	6L
public static final long	<a href="#">CDF_INCREMENT</a>	15L
public static final long	<a href="#">CDF_INFO</a>	129L
public static final long	<a href="#">CDF_INT1</a>	1L
public static final long	<a href="#">CDF_INT2</a>	2L
public static final long	<a href="#">CDF_INT4</a>	4L
public static final long	<a href="#">CDF_INT8</a>	8L
public static final long	<a href="#">CDF_INTERNAL_ERROR</a>	-2035L
public static final long	<a href="#">CDF_LEAPSECONDLASTUPDATED</a>	159L
public static final long	<a href="#">CDF_MAJORITY</a>	5L
public static final long	<a href="#">CDF_MAX_DIMS</a>	10L
public static final long	<a href="#">CDF_MAX_PARMS</a>	5L
public static final long	<a href="#">CDF_MIN_DIMS</a>	0L

public static final long	<a href="#">CDF_NAME</a>	2L
public static final long	<a href="#">CDF_NAME_TRUNC</a>	-1002L
public static final long	<a href="#">CDF_NEGtoPOSfp0_MODE</a>	19L
public static final long	<a href="#">CDF_NUMATTRS</a>	10L
public static final long	<a href="#">CDF_NUMgATTRS</a>	11L
public static final long	<a href="#">CDF_NUMrVARS</a>	8L
public static final long	<a href="#">CDF_NUMvATTRS</a>	12L
public static final long	<a href="#">CDF_NUMzVARS</a>	9L
public static final long	<a href="#">CDF_OK</a>	0L
public static final long	<a href="#">CDF_OPEN_ERROR</a>	-2012L
public static final long	<a href="#">CDF_PATHNAME_LEN</a>	512L
public static final long	<a href="#">CDF_READ_ERROR</a>	-2074L
public static final long	<a href="#">CDF_READONLY_MODE</a>	17L
public static final long	<a href="#">CDF_REAL4</a>	21L
public static final long	<a href="#">CDF_REAL8</a>	22L
public static final long	<a href="#">CDF_RELEASE</a>	14L
public static final long	<a href="#">CDF_SAVE_ERROR</a>	-2083L
public static final long	<a href="#">CDF_SCRATCHDIR</a>	149L
public static final long	<a href="#">CDF_STATUS</a>	16L
public static final long	<a href="#">CDF_STATUSTEXT_LEN</a>	80L
public static final long	<a href="#">CDF_TIME_TT2000</a>	33L
public static final long	<a href="#">CDF_UCHAR</a>	52L
public static final long	<a href="#">CDF_UINT1</a>	11L
public static final long	<a href="#">CDF_UINT2</a>	12L
public static final long	<a href="#">CDF_UINT4</a>	14L
public static final long	<a href="#">CDF_VAR_NAME_LEN</a>	64L
public static final long	<a href="#">CDF_VAR_NAME_LEN256</a>	256L
public static final long	<a href="#">CDF_VERSION</a>	13L
public static final long	<a href="#">CDF_WARN</a>	-2000L



public static final long	<a href="#">CDF_WRITE_ERROR</a>	-2075L
public static final long	<a href="#">CDF_zMODE</a>	18L
public static final long	<a href="#">CDFwithSTATS</a>	200L
public static final long	<a href="#">CHECKSUM</a>	1012L
public static final long	<a href="#">CHECKSUM_ERROR</a>	-2226L
public static final long	<a href="#">CHECKSUM_NOT_ALLOWED</a>	-2227L
public static final long	<a href="#">CLOSE</a>	1004L
public static final long	<a href="#">COLUMN_MAJOR</a>	2L
public static final long	<a href="#">COMPRESS_CACHESIZE</a>	155L
public static final long	<a href="#">COMPRESSION_ERROR</a>	-2093L
public static final long	<a href="#">CONFIRM</a>	1006L
public static final long	<a href="#">CORRUPTED_V2_CDF</a>	-2028L
public static final long	<a href="#">CORRUPTED_V3_CDF</a>	-2223L
public static final long	<a href="#">CREATE</a>	1001L
public static final long	<a href="#">CURgENTRY_EXISTENCE</a>	126L
public static final long	<a href="#">CURrENTRY_EXISTENCE</a>	127L
public static final long	<a href="#">CURzENTRY_EXISTENCE</a>	128L
public static final long	<a href="#">DATATYPE_MISMATCH</a>	-2112L
public static final long	<a href="#">DATATYPE_SIZE</a>	125L
public static final long	<a href="#">DECOMPRESSION_ERROR</a>	-2092L
public static final long	<a href="#">DECSTATION_DECODING</a>	4L
public static final long	<a href="#">DECSTATION_ENCODING</a>	4L
public static final byte	<a href="#">DEFAULT_BYTE_PADVALUE</a>	-127
public static final char	<a href="#">DEFAULT_CHAR_PADVALUE</a>	32
public static final double	<a href="#">DEFAULT_DOUBLE_PADVALUE</a>	-1.0E30
public static final double	<a href="#">DEFAULT_EPOCH_PADVALUE</a>	0.0
public static final double	<a href="#">DEFAULT_EPOCH16_PADVALUE</a>	0.0
public static final float	<a href="#">DEFAULT_FLOAT_PADVALUE</a>	- 1.0000000150474662E30f
public static final byte	<a href="#">DEFAULT_INT1_PADVALUE</a>	-127

public static final short	<a href="#">DEFAULT_INT2_PADVALUE</a>	-32767
public static final int	<a href="#">DEFAULT_INT4_PADVALUE</a>	-2147483647
public static final long	<a href="#">DEFAULT_INT8_PADVALUE</a>	-9223372036854775807L
public static final float	<a href="#">DEFAULT_REAL4_PADVALUE</a>	- 1.0000000150474662E30f
public static final double	<a href="#">DEFAULT_REAL8_PADVALUE</a>	-1.0E30
public static final long	<a href="#">DEFAULT_TT2000_PADVALUE</a>	-9223372036854775807L
public static final char	<a href="#">DEFAULT_UCHAR_PADVALUE</a>	32
public static final short	<a href="#">DEFAULT_UINT1_PADVALUE</a>	254
public static final int	<a href="#">DEFAULT_UINT2_PADVALUE</a>	65534
public static final long	<a href="#">DEFAULT_UINT4_PADVALUE</a>	4294967294L
public static final long	<a href="#">DELETE</a>	1003L
public static final long	<a href="#">DID_NOT_COMPRESS</a>	1002L
public static final long	<a href="#">EMPTY_COMPRESSED_CDF</a>	-2096L
public static final long	<a href="#">END_OF_VAR</a>	-2032L
public static final long	<a href="#">EPOCH_STRING_LEN</a>	24L
public static final long	<a href="#">EPOCH_STRING_LEN_EXTEND</a>	36L
public static final long	<a href="#">EPOCH1_STRING_LEN</a>	16L
public static final long	<a href="#">EPOCH1_STRING_LEN_EXTEND</a>	24L
public static final long	<a href="#">EPOCH2_STRING_LEN</a>	14L
public static final long	<a href="#">EPOCH2_STRING_LEN_EXTEND</a>	14L
public static final long	<a href="#">EPOCH3_STRING_LEN</a>	24L
public static final long	<a href="#">EPOCH3_STRING_LEN_EXTEND</a>	36L
public static final long	<a href="#">EPOCH4_STRING_LEN</a>	23L
public static final long	<a href="#">EPOCH4_STRING_LEN_EXTEND</a>	32L
public static final long	<a href="#">EPOCHx_FORMAT_MAX</a>	68L
public static final long	<a href="#">EPOCHx_STRING_MAX</a>	50L
public static final long	<a href="#">FILLED_TT2000_VALUE</a>	-9223372036854775808L
public static final long	<a href="#">FORCED_PARAMETER</a>	-1006L
public static final long	<a href="#">gENTRY</a>	96L

public static final long	<a href="#">gENTRY_DATA</a>	101L
public static final long	<a href="#">gENTRY_DATASPEC</a>	100L
public static final long	<a href="#">gENTRY_DATATYPE</a>	98L
public static final long	<a href="#">gENTRY_EXISTENCE</a>	97L
public static final long	<a href="#">gENTRY_NUMELEMS</a>	99L
public static final long	<a href="#">GET</a>	1007L
public static final long	<a href="#">GETCDFCHECKSUM</a>	1013L
public static final long	<a href="#">GETCDFFILEBACKWARD</a>	1011L
public static final long	<a href="#">GETCDFVALIDATE</a>	1015L
public static final long	<a href="#">GETLEAPSECONDSENVVAR</a>	1016L
public static final long	<a href="#">GLOBAL_SCOPE</a>	1L
public static final long	<a href="#">GZIP_COMPRESSION</a>	5L
public static final long	<a href="#">HOST_DECODING</a>	8L
public static final long	<a href="#">HOST_ENCODING</a>	8L
public static final long	<a href="#">HP_DECODING</a>	11L
public static final long	<a href="#">HP_ENCODING</a>	11L
public static final long	<a href="#">HUFF_COMPRESSION</a>	2L
public static final long	<a href="#">IBM_PC_OVERFLOW</a>	-2023L
public static final long	<a href="#">IBMPC_DECODING</a>	6L
public static final long	<a href="#">IBMPC_ENCODING</a>	6L
public static final long	<a href="#">IBMRS_DECODING</a>	7L
public static final long	<a href="#">IBMRS_ENCODING</a>	7L
public static final long	<a href="#">ILLEGAL_EPOCH_FIELD</a>	-2224L
public static final double	<a href="#">ILLEGAL_EPOCH_VALUE</a>	-1.0
public static final long	<a href="#">ILLEGAL_FOR_SCOPE</a>	-2076L
public static final long	<a href="#">ILLEGAL_IN_zMODE</a>	-2071L
public static final long	<a href="#">ILLEGAL_ON_V1_CDF</a>	-2060L
public static final long	<a href="#">ILLEGAL TT2000 VALUE</a>	-9223372036854775805L
public static final long	<a href="#">IS_A_NETCDF</a>	-2228L

public static final long	<a href="#">LIB_COPYRIGHT</a>	20L
public static final long	<a href="#">LIB_INCREMENT</a>	23L
public static final long	<a href="#">LIB_RELEASE</a>	22L
public static final long	<a href="#">LIB_subINCREMENT</a>	24L
public static final long	<a href="#">LIB_VERSION</a>	21L
public static final long	<a href="#">MAC_DECODING</a>	9L
public static final long	<a href="#">MAC_ENCODING</a>	9L
public static final long	<a href="#">MD5_CHECKSUM</a>	1L
public static final long	<a href="#">MULTI_FILE</a>	2L
public static final long	<a href="#">MULTI_FILE_FORMAT</a>	1007L
public static final long	<a href="#">NA_FOR_VARIABLE</a>	-1007L
public static final long	<a href="#">NEGATIVE_FP_ZERO</a>	-1004L
public static final long	<a href="#">NEGtoPOSfp0off</a>	0L
public static final long	<a href="#">NEGtoPOSfp0on</a>	-1L
public static final long	<a href="#">NETWORK_DECODING</a>	1L
public static final long	<a href="#">NETWORK_ENCODING</a>	1L
public static final long	<a href="#">NeXT_DECODING</a>	12L
public static final long	<a href="#">NeXT_ENCODING</a>	12L
public static final long	<a href="#">NO_ATTR_SELECTED</a>	-2046L
public static final long	<a href="#">NO_CDF_SELECTED</a>	-2053L
public static final long	<a href="#">NO_CHECKSUM</a>	0L
public static final long	<a href="#">NO_COMPRESSION</a>	0L
public static final long	<a href="#">NO_DELETE_ACCESS</a>	-2087L
public static final long	<a href="#">NO_ENTRY_SELECTED</a>	-2047L
public static final long	<a href="#">NO_MORE_ACCESS</a>	-2077L
public static final long	<a href="#">NO_PADVALUE_SPECIFIED</a>	1005L
public static final long	<a href="#">NO_SPARSEARRAYS</a>	0L
public static final long	<a href="#">NO_SPARSERECORDS</a>	0L
public static final long	<a href="#">NO_STATUS_SELECTED</a>	-2052L

public static final long	<a href="#">NO_SUCH_ATTR</a>	-2017L
public static final long	<a href="#">NO_SUCH_CDF</a>	-2067L
public static final long	<a href="#">NO_SUCH_ENTRY</a>	-2018L
public static final long	<a href="#">NO_SUCH_RECORD</a>	-2102L
public static final long	<a href="#">NO_SUCH_VAR</a>	-2019L
public static final long	<a href="#">NO_VAR_SELECTED</a>	-2048L
public static final long	<a href="#">NO_VARS_IN_CDF</a>	1006L
public static final long	<a href="#">NO_WRITE_ACCESS</a>	-2086L
public static final long	<a href="#">NONE_CHECKSUM</a>	0L
public static final long	<a href="#">NOT_A_CDF</a>	-2027L
public static final long	<a href="#">NOT_A_CDF_OR_NOT_SUPPORTED</a>	-2113L
public static final long	<a href="#">NOVARY</a>	0L
public static final long	<a href="#">NULL_</a>	1000L
public static final long	<a href="#">OPEN_</a>	1002L
public static final long	<a href="#">OPTIMAL_ENCODING_TREES</a>	0L
public static final long	<a href="#">OTHER_CHECKSUM</a>	2L
public static final long	<a href="#">PAD_SPARSERECORDS</a>	1L
public static final long	<a href="#">PPC_DECODING</a>	9L
public static final long	<a href="#">PPC_ENCODING</a>	9L
public static final long	<a href="#">PRECEEDING_RECORDS_ALLOCATED</a>	1009L
public static final long	<a href="#">PREV_SPARSERECORDS</a>	2L
public static final long	<a href="#">PUT_</a>	1008L
public static final long	<a href="#">READ_ONLY_DISTRIBUTION</a>	-2054L
public static final long	<a href="#">READ_ONLY_MODE</a>	-2070L
public static final long	<a href="#">READONLYoff</a>	0L
public static final long	<a href="#">READONLYon</a>	-1L
public static final long	<a href="#">rENTRY_</a>	102L
public static final long	<a href="#">rENTRY_DATA_</a>	108L
public static final long	<a href="#">rENTRY_DATASPEC_</a>	107L

public static final long	<a href="#"><u>rENTRY_DATATYPE</u></a>	105L
public static final long	<a href="#"><u>rENTRY_EXISTENCE</u></a>	104L
public static final long	<a href="#"><u>rENTRY_NAME</u></a>	103L
public static final long	<a href="#"><u>rENTRY_NUMELEMS</u></a>	106L
public static final long	<a href="#"><u>RLE_COMPRESSION</u></a>	1L
public static final long	<a href="#"><u>RLE_OF_ZEROS</u></a>	0L
public static final long	<a href="#"><u>ROW_MAJOR</u></a>	1L
public static final long	<a href="#"><u>rVAR</u></a>	35L
public static final long	<a href="#"><u>rVAR_ALLOCATEBLOCK</u></a>	140L
public static final long	<a href="#"><u>rVAR_ALLOCATEDFROM</u></a>	143L
public static final long	<a href="#"><u>rVAR_ALLOCATEDTO</u></a>	144L
public static final long	<a href="#"><u>rVAR_ALLOCATERECS</u></a>	123L
public static final long	<a href="#"><u>rVAR_BLOCKINGFACTOR</u></a>	51L
public static final long	<a href="#"><u>rVAR_CACHESIZE</u></a>	120L
public static final long	<a href="#"><u>rVAR_COMPRESSION</u></a>	137L
public static final long	<a href="#"><u>rVAR_DATA</u></a>	42L
public static final long	<a href="#"><u>rVAR_DATASPEC</u></a>	48L
public static final long	<a href="#"><u>rVAR_DATATYPE</u></a>	37L
public static final long	<a href="#"><u>rVAR_DIMVARYS</u></a>	40L
public static final long	<a href="#"><u>rVAR_EXISTENCE</u></a>	54L
public static final long	<a href="#"><u>rVAR_HYPERDATA</u></a>	43L
public static final long	<a href="#"><u>rVAR_INITIALRECS</u></a>	50L
public static final long	<a href="#"><u>rVAR_MAXallocREC</u></a>	47L
public static final long	<a href="#"><u>rVAR_MAXREC</u></a>	46L
public static final long	<a href="#"><u>rVAR_NAME</u></a>	36L
public static final long	<a href="#"><u>rVAR_nINDEXENTRIES</u></a>	53L
public static final long	<a href="#"><u>rVAR_nINDEXLEVELS</u></a>	148L
public static final long	<a href="#"><u>rVAR_nINDEXRECORDS</u></a>	52L
public static final long	<a href="#"><u>rVAR_NUMallocRECS</u></a>	142L

public static final long	<a href="#"><u>rVAR_NUMBER</u></a>	41L
public static final long	<a href="#"><u>rVAR_NUMELEMS</u></a>	38L
public static final long	<a href="#"><u>rVAR_NUMRECS</u></a>	141L
public static final long	<a href="#"><u>rVAR_PADVALUE</u></a>	49L
public static final long	<a href="#"><u>rVAR_RECORDS</u></a>	152L
public static final long	<a href="#"><u>rVAR_RECORDS_RENUMBER</u></a>	157L
public static final long	<a href="#"><u>rVAR_RECvary</u></a>	39L
public static final long	<a href="#"><u>rVAR_RESERVEPERCENT</u></a>	150L
public static final long	<a href="#"><u>rVAR_SEQDATA</u></a>	44L
public static final long	<a href="#"><u>rVAR_SEQPOS</u></a>	45L
public static final long	<a href="#"><u>rVAR_SPARSEARRAYS</u></a>	139L
public static final long	<a href="#"><u>rVAR_SPARSERECORDS</u></a>	138L
public static final long	<a href="#"><u>rVARs_CACHESIZE</u></a>	118L
public static final long	<a href="#"><u>rVARs_DIMCOUNTS</u></a>	33L
public static final long	<a href="#"><u>rVARs_DIMINDICES</u></a>	32L
public static final long	<a href="#"><u>rVARs_DIMINTERVALS</u></a>	34L
public static final long	<a href="#"><u>rVARs_DIMSIZES</u></a>	26L
public static final long	<a href="#"><u>rVARs_MAXREC</u></a>	27L
public static final long	<a href="#"><u>rVARs_NUMDIMS</u></a>	25L
public static final long	<a href="#"><u>rVARs_RECCOUNT</u></a>	30L
public static final long	<a href="#"><u>rVARs_RECdata</u></a>	28L
public static final long	<a href="#"><u>rVARs_RECINTERVAL</u></a>	31L
public static final long	<a href="#"><u>rVARs_RECNUMBER</u></a>	29L
public static final long	<a href="#"><u>SAVE</u></a>	1009L
public static final long	<a href="#"><u>SCRATCH_CREATE_ERROR</u></a>	-2107L
public static final long	<a href="#"><u>SCRATCH_DELETE_ERROR</u></a>	-2106L
public static final long	<a href="#"><u>SCRATCH_READ_ERROR</u></a>	-2108L
public static final long	<a href="#"><u>SCRATCH_WRITE_ERROR</u></a>	-2109L
public static final long	<a href="#"><u>SELECT</u></a>	1005L

public static final long	<a href="#">SGi_DECODING</a>	5L
public static final long	<a href="#">SGi_ENCODING</a>	5L
public static final long	<a href="#">SINGLE_FILE</a>	1L
public static final long	<a href="#">SINGLE_FILE_FORMAT</a>	1004L
public static final long	<a href="#">SOME_ALREADY_ALLOCATED</a>	1008L
public static final long	<a href="#">STAGE_CACHESIZE</a>	154L
public static final long	<a href="#">STATUS_TEXT</a>	116L
public static final long	<a href="#">SUN_DECODING</a>	2L
public static final long	<a href="#">SUN_ENCODING</a>	2L
public static final long	<a href="#">TOO_MANY_PARMS</a>	-2101L
public static final long	<a href="#">TOO_MANY_VARS</a>	-2024L
public static final long	<a href="#">TT2000_0_STRING_LEN</a>	30L
public static final long	<a href="#">TT2000_1_STRING_LEN</a>	19L
public static final long	<a href="#">TT2000_2_STRING_LEN</a>	14L
public static final long	<a href="#">TT2000_3_STRING_LEN</a>	29L
public static final long	<a href="#">TT2000_CDF_MAYNEEDUPDATE</a>	1010L
public static final long	<a href="#">TT2000_TIME_ERROR</a>	-2229L
public static final long	<a href="#">TT2000_USED_OUTDATED_TABLE</a>	-2234L
public static final long	<a href="#">UNABLE_TO_PROCESS_CDF</a>	-2230L
public static final long	<a href="#">UNKNOWN_COMPRESSION</a>	-2090L
public static final long	<a href="#">UNKNOWN_SPARSENESS</a>	-2098L
public static final long	<a href="#">UNSUPPORTED_OPERATION</a>	-2082L
public static final long	<a href="#">VALIDATE</a>	1014L
public static final long	<a href="#">VALIDATEFILEoff</a>	0L
public static final long	<a href="#">VALIDATEFILEon</a>	-1L
public static final long	<a href="#">VAR_ALREADY_CLOSED</a>	1003L
public static final long	<a href="#">VAR_CLOSE_ERROR</a>	-2056L
public static final long	<a href="#">VAR_CREATE_ERROR</a>	-2068L
public static final long	<a href="#">VAR_DELETE_ERROR</a>	-2089L



public static final long	<a href="#">VAR_EXISTS</a>	-2025L
public static final long	<a href="#">VAR_NAME_TRUNC</a>	-1003L
public static final long	<a href="#">VAR_OPEN_ERROR</a>	-2029L
public static final long	<a href="#">VAR_READ_ERROR</a>	-2020L
public static final long	<a href="#">VAR_SAVE_ERROR</a>	-2084L
public static final long	<a href="#">VAR_WRITE_ERROR</a>	-2021L
public static final long	<a href="#">VARIABLE_SCOPE</a>	2L
public static final long	<a href="#">VARY</a>	-1L
public static final long	<a href="#">VAX_DECODING</a>	3L
public static final long	<a href="#">VAX_ENCODING</a>	3L
public static final long	<a href="#">VIRTUAL_RECORD_DATA</a>	1001L
public static final long	<a href="#">zENTRY</a>	109L
public static final long	<a href="#">zENTRY_DATA</a>	115L
public static final long	<a href="#">zENTRY_DATASPEC</a>	114L
public static final long	<a href="#">zENTRY_DATATYPE</a>	112L
public static final long	<a href="#">zENTRY_EXISTENCE</a>	111L
public static final long	<a href="#">zENTRY_NAME</a>	110L
public static final long	<a href="#">zENTRY_NUMELEMS</a>	113L
public static final long	<a href="#">ZLIB_COMPRESS_ERROR</a>	-2231L
public static final long	<a href="#">ZLIB_UNCOMPRESS_ERROR</a>	-2232L
public static final long	<a href="#">zMODEoff</a>	0L
public static final long	<a href="#">zMODEon1</a>	1L
public static final long	<a href="#">zMODEon2</a>	2L
public static final long	<a href="#">zVAR</a>	57L
public static final long	<a href="#">zVAR_ALLOCATEBLOCK</a>	134L
public static final long	<a href="#">zVAR_ALLOCATEDFROM</a>	145L
public static final long	<a href="#">zVAR_ALLOCATEDTO</a>	146L
public static final long	<a href="#">zVAR_ALLOCATERECS</a>	124L
public static final long	<a href="#">zVAR_BLOCKINGFACTOR</a>	75L

public static final long	<a href="#">zVAR_CACHESIZE_</a>	121L
public static final long	<a href="#">zVAR_COMPRESSION_</a>	131L
public static final long	<a href="#">zVAR_DATA_</a>	66L
public static final long	<a href="#">zVAR_DATASPEC_</a>	72L
public static final long	<a href="#">zVAR_DATATYPE_</a>	59L
public static final long	<a href="#">zVAR_DIMCOUNTS_</a>	83L
public static final long	<a href="#">zVAR_DIMINDICES_</a>	82L
public static final long	<a href="#">zVAR_DIMINTERVALS_</a>	84L
public static final long	<a href="#">zVAR_DIMSIZES_</a>	62L
public static final long	<a href="#">zVAR_DIMVARYS_</a>	64L
public static final long	<a href="#">zVAR_EXISTENCE_</a>	78L
public static final long	<a href="#">zVAR_HYPERDATA_</a>	67L
public static final long	<a href="#">zVAR_INITIALRECS_</a>	74L
public static final long	<a href="#">zVAR_MAXallocREC_</a>	71L
public static final long	<a href="#">zVAR_MAXREC_</a>	70L
public static final long	<a href="#">zVAR_NAME_</a>	58L
public static final long	<a href="#">zVAR_nINDEXENTRIES_</a>	77L
public static final long	<a href="#">zVAR_nINDEXLEVELS_</a>	147L
public static final long	<a href="#">zVAR_nINDEXRECORDS_</a>	76L
public static final long	<a href="#">zVAR_NUMallocRECS_</a>	136L
public static final long	<a href="#">zVAR_NUMBER_</a>	65L
public static final long	<a href="#">zVAR_NUMDIMS_</a>	61L
public static final long	<a href="#">zVAR_NUMELEMS_</a>	60L
public static final long	<a href="#">zVAR_NUMRECS_</a>	135L
public static final long	<a href="#">zVAR_PADVALUE_</a>	73L
public static final long	<a href="#">zVAR_RECCOUNT_</a>	80L
public static final long	<a href="#">zVAR_RECINTERVAL_</a>	81L
public static final long	<a href="#">zVAR_RECNUMBER_</a>	79L
public static final long	<a href="#">zVAR_RECORDS_</a>	153L

public static final long	<a href="#">zVAR_RECORDS_RENUMBER_</a>	158L
public static final long	<a href="#">zVAR_RECVAR_</a>	63L
public static final long	<a href="#">zVAR_RESERVEPERCENT_</a>	151L
public static final long	<a href="#">zVAR_SEQDATA_</a>	68L
public static final long	<a href="#">zVAR_SEQPOS_</a>	69L
public static final long	<a href="#">zVAR_SPARSEARRAYS_</a>	133L
public static final long	<a href="#">zVAR_SPASERECORDS_</a>	132L
public static final long	<a href="#">zVARs_CACHESIZE_</a>	119L
public static final long	<a href="#">zVARs_MAXREC_</a>	55L
public static final long	<a href="#">zVARs_RECDATA_</a>	56L
public static final long	<a href="#">zVARs_RECNUMBER_</a>	122L

<b>gsfc.nssdc.cdf.CDFTools</b>		
public static final int	<a href="#">ALL_VALUES</a>	3
public static final int	<a href="#">NAMED_VALUES</a>	4
public static final int	<a href="#">NO_REPORTS</a>	0
public static final int	<a href="#">NO_VALUES</a>	0
public static final int	<a href="#">NRV_VALUES</a>	1
public static final int	<a href="#">REPORT_ERRORS</a>	1
public static final int	<a href="#">REPORT_INFORMATION</a>	4
public static final int	<a href="#">REPORT_WARNINGS</a>	2
public static final int	<a href="#">RV_VALUES</a>	2

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## Serialized Form

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### Package `gsfc.nssdc.cdf`

Class [gsfc.nssdc.cdf.CDFException](#) extends `java.lang.Exception`  
implements `Serializable`

### Serialized Fields

#### `myStatus`

long `myStatus`

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