CFXMLNode Reference

Core Foundation

2006-02-07

Apple Inc.
1 Infinite Loop
Cupertino, CA 95014
408-996-1010

Simultaneously published in the United States and Canada.

Contents

CFXMLNode Reference 5

Overview 5
Functions 5
- CFXMLNodeCreate 5
- CFXMLNodeCreateCopy 6
- CFXMLNodeGetInfoPtr 7
- CFXMLNodeGetString 7
- CFXMLNodeGetTypeCode 8
- CFXMLNodeGetTypeID 8
- CFXMLNodeGetVersion 8

Data Types 9
- CFXMLAttributeDeclarationInfo 9
- CFXMLAttributeListDeclarationInfo 9
- CFXMLDocumentInfo 10
- CFXMLDocumentTypeInfo 10
- CFXMLElementInfo 11
- CFXMLElementTypeDeclarationInfo 11
- CFXMLEntityInfo 12
- CFXMLEntityReferenceInfo 12
- CFXMLExternalID 13
- CFXMLNodeRef 13
- CFXMLNotationInfo 14
- CFXMLProcessingInstructionInfo 14

Constants 15
- Entity Type Code 15
- Node Current Version 15
- Node Type Code 16

Document Revision History 19

Index 21

CFXMLNode Reference

Derived From:	CFType
Framework:	CoreFoundation/CoreFoundation.h
Companion guide	XML Programming Topics for Core Foundation
Declared in	CFXMLNode.h

Overview

A CFXMLNode object describes an individual XML construct—like a tag, or a comment, or a string of character data. CFXMLNode is intended to be used with the CFXMLParser and CFXMLTree opaque types.

Each CFXMLNode object contains three main pieces of information—the node's type, the data string, and a pointer to an additional information data structure. A CFXMLNode object's type is one of the enumerations described in Node Type Code (page 16). The data string is always a CFString object; the meaning of the string is dependent on the node's type. The format of the additional data is also dependent on the node's type; in general, there is a custom structure for each type that requires additional data. See Node Type Code (page 16) for the mapping from a node type to meaning of the data string, and structure of the additional information. Note that these structures are versioned and may change as the parser changes. The current version can always be identified by the `kCFXMLNodeCurrentVersion` (page 16) constant; earlier versions can be identified and used by passing earlier values for the version number (although the older structures would have been removed from the header).

You create a CFXMLNode object using one of the create or copy functions. Use the `CFXMLNodeGetTypeCode` (page 8), `CFXMLNodeGetString` (page 7), and `CFXMLNodeGetInfoPtr` (page 7) functions to get the node type, data string, and additional information respectively. Use the `CFXMLNodeGetVersion` (page 8) function to get a node's version number.

Functions

CFXMLNodeCreate

Creates a new CFXMLNode.

```
CFXMLNodeRef CFXMLNodeCreate (
   CFAllocatorRef alloc,
   CFXMLNodeTypeCode xmlType,
   CFStringRef dataString,
   const void *additionalInfoPtr,
   CFIndex version
);
```

Parameters

alloc

The allocator to use to allocate memory for the new object. Pass `NULL` or `kCFAllocatorDefault` to use the current default allocator.

xmlType

Type identifier code for the XML structure you want this node to describe.

dataString

The XML data.

additionalInfoPtr

A pointer to a structure containing additional information about the XML data.

version

The version number of the CFXMLNode object you want to create. Pass one of the pre-defined constants, typically `kCFXMLNodeCurrentVersion` (page 16).

Return Value

A new CFXMLNode object. Ownership follows the Create Rule.

Availability

Available in CarbonLib v1.1 and later.

Available in Mac OS X v10.0 and later.

Declared In

`CFXMLNode.h`

CFXMLNodeCreateCopy

Creates a copy of a CFXMLNode object.

```
CFXMLNodeRef CFXMLNodeCreateCopy (
   CFAllocatorRef alloc,
   CFXMLNodeRef origNode
);
```

Parameters

alloc

The allocator to use to allocate memory for the new object. Pass `NULL` or `kCFAllocatorDefault` to use the current default allocator.

origNode

The node to copy. Do not pass `NULL`.

Return Value

A new CFXMLNode object. Ownership follows the Create Rule.

Availability

Available in CarbonLib v1.1 and later.

Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

CFXMLNodeGetInfoPtr

Returns the additional information pointer of a CFXMLNode object.

```
const void * CFXMLNodeGetInfoPtr (
   CFXMLNodeRef node
);
```

Parameters

node

The CFXMLNode object to examine.

Return Value
A pointer to a structure containing additional information. The CFXMLNode version together with the node's type determines the expected structure. See Node Type Code (page 16) for information about the possible structures returned. If the returned value is a Core Foundation object, ownership follows the Get Rule.

Availability
Available in CarbonLib v1.1 and later.
Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

CFXMLNodeGetString

Returns the data string from a CFXMLNode.

```
CFStringRef CFXMLNodeGetString (
   CFXMLNodeRef node
);
```

Parameters

node

The CFXMLNode object to examine.

Return Value
The data string from *node*. Ownership follows the Get Rule.

Availability
Available in CarbonLib v1.1 and later.
Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

CFXMLNodeGetTypeCode

Returns the XML structure type code for a CFXMLNode object.

```
CFXMLNodeTypeCode CFXMLNodeGetTypeCode (
   CFXMLNodeRef node
);
```

Parameters

node

The CFXMLNode object to examine.

Return Value

The type code for *node*.

Availability

Available in CarbonLib v1.1 and later.

Available in Mac OS X v10.0 and later.

Declared In

CFXMLNode.h

CFXMLNodeGetTypeID

Returns the type identifier code for the CFXMLNode opaque type.

```
CFTypeID CFXMLNodeGetTypeID (
   void
);
```

Return Value

The type identifier for the CFXMLNode opaque type.

Availability

Available in CarbonLib v1.1 and later.

Available in Mac OS X v10.0 and later.

Declared In

CFXMLNode.h

CFXMLNodeGetVersion

Returns the version number for a CFXMLNode object.

```
CFIndex CFXMLNodeGetVersion (
   CFXMLNodeRef node
);
```

Parameters

node

The CFXMLNode object to examine.

Return Value

The version number of *node*.

Availability
Available in CarbonLib v1.1 and later.
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

Data Types

CFXMLAttributeDeclarationInfo

Contains information about an element attribute definition.

```
struct CFXMLAttributeDeclarationInfo {
    CFStringRef attributeName;
    CFStringRef typeString;
    CFStringRef defaultString;
};
typedef struct CFXMLAttributeDeclarationInfo CFXMLAttributeDeclarationInfo;
```

Fields

`attributeName`
The name of the attribute.

`typeString`
Describes the declaration of a single attribute.

`defaultString`
The attribute's default value.

Discussion
This structure is part of the definition of the `CFXMLAttributeListDeclarationInfo` (page 9) structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLAttributeListDeclarationInfo

Contains a list of the attributes associated with an element.

```
struct CFXMLAttributeListDeclarationInfo {
    CFIndex numberOfAttributes;
    CFXMLAttributeDeclarationInfo *attributes;
};
typedef struct CFXMLAttributeListDeclarationInfo  CFXMLAttributeListDeclarationInfo;
```

Fields

`numberOfAttributes`
The number of attributes in the array.

`attributes`
A C array of attributes.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters an attribute declaration in the DTD. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain the pointer to this structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLDocumentInfo

Contains the source URL and text encoding information for the XML document.

```
struct CFXMLDocumentInfo {
    CFURLRef sourceURL;
    CFStringEncoding encoding;
};
typedef struct CFXMLDocumentInfo CFXMLDocumentInfo;
```

Fields
`sourceURL`
The source URL of the XML document.

`encoding`
The text encoding of the XML document.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters the XML declaration. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain the pointer.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLDocumentTypeInfo

Contains the external ID of the DTD.

```
struct CFXMLDocumentTypeInfo {
    CFXMLExternalID externalID;
};
typedef struct CFXMLDocumentTypeInfo CFXMLDocumentTypeInfo;
```

Fields
`externalID`
The external ID of the DTD.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters the beginning of the DTD. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain a pointer to this structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLElementInfo

Contains a list of element attributes packaged as CFDictionary key/value pairs.

```
struct CFXMLElementInfo {
    CFDictionaryRef attributes;
    CFArrayRef attributeOrder;
    Boolean isEmpty;
};
typedef struct CFXMLElementInfo CFXMLElementInfo;
```

Fields

`attributes`
The dictionary of attribute values.

`attributeOrder`
An array specifying the order in which the attributes appeared in the XML document.

`isEmpty`
A flag indicating whether the element was expressed in closed form.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters an element containing attributes. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain the pointer.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLElementTypeDeclarationInfo

Contains a description of the element type.

```
struct CFXMLElementTypeDeclarationInfo {
    CFStringRef contentDescription;
};
typedef struct CFXMLElementTypeDeclarationInfo CFXMLElementTypeDeclarationInfo;
```

Fields

`contentDescription`
A textual description of the element type.

Discussion
A pointer to this structure is included in the CFXMLNode passed to your application when the parser encounters and element type declaration. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain a pointer to this structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLEntityInfo

Contains information describing an XML entity.

```
struct CFXMLEntityInfo {
    CFXMLEntityTypeCode entityType;
    CFStringRef replacementText;
    CFXMLExternalID entityID;
    CFStringRef notationName;
};
typedef struct CFXMLEntityInfo CFXMLEntityInfo;
```

Fields

`entityType`
The entity type code.

`replacementText`
`NULL` if `entityType` is external or unparsed, otherwise the text that the entity should be replaced with.

`entityID`
`entityID.systemID` will be `NULL` if `entityType` is internal.

`notationName`
`NULL` if `entityType` is parsed.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters an entity declaration. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain a pointer to this structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`CFXMLNode.h`

CFXMLEntityReferenceInfo

Contains information describing an XML entity reference.

```
struct CFXMLEntityReferenceInfo {
    CFXMLEntityTypeCode entityType;
};
typedef struct CFXMLEntityReferenceInfo CFXMLEntityReferenceInfo;
```

Fields

`entityType`

The entity type code.

Discussion

A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters an entity reference. Use the `CFXMLNodeGetInfoPtr` (page 7) function to obtain the pointer.

Availability

Available in Mac OS X v10.0 and later.

Declared In

`CFXMLNode.h`

CFXMLExternalID

Contains the system and public IDs for an external entity reference.

```
struct CFXMLExternalID {
    CFURLRef systemID;
    CFStringRef publicID;
};
typedef struct CFXMLExternalID CFXMLExternalID;
```

Fields

`systemID`

The systemID URL.

`publicID`

The publicID string.

Discussion

This structure is part of the definition of the `CFXMLDocumentTypeInfo` (page 10), `CFXMLNotationInfo` (page 14), and `CFXMLEntityInfo` (page 12) structures.

Availability

Available in Mac OS X v10.0 and later.

Declared In

`CFXMLNode.h`

CFXMLNodeRef

A reference to a CFXMLNode object.

```
typedef const struct __CFXMLNode *CFXMLNodeRef;
```

Availability

Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

CFXMLNotationInfo

Contains the external ID of the notation.

```
struct CFXMLNotationInfo {
    CFXMLExternalID externalID;
};
typedef struct CFXMLNotationInfo CFXMLNotationInfo;
```

Fields
externalID
The external ID of the notation.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters a notation element. Use the CFXMLNodeGetInfoPtr (page 7) function to obtain a pointer to this structure.

Availability
Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

CFXMLProcessingInstructionInfo

Contains the text of the processing instruction.

```
struct CFXMLProcessingInstructionInfo {
    CFStringRef dataString;
};
typedef struct CFXMLProcessingInstructionInfo CFXMLProcessingInstructionInfo;
```

Fields
dataString
The text of the processing instruction.

Discussion
A pointer to this structure is included in the CFXMLNode object passed to your application when the parser encounters a processing instruction. Use the CFXMLNodeGetInfoPtr (page 7) function to obtain the pointer.

Availability
Available in Mac OS X v10.0 and later.

Declared In
CFXMLNode.h

Constants

Entity Type Code

The entity type identification codes that the parser uses to describe XML entities.

```
enum CFXMLEntityTypeCode {
    kCFXMLEntityTypeParameter = 0,
    kCFXMLEntityTypeParsedInternal = 1,
    kCFXMLEntityTypeParsedExternal = 2,
    kCFXMLEntityTypeUnparsed = 3,
    kCFXMLEntityTypeCharacter = 4
};
typedef enum CFXMLEntityTypeCode CFXMLEntityTypeCode;
```

Constants

`kCFXMLEntityTypeParameter`
Implies a parsed, internal entity.
Available in Mac OS X v10.0 and later.
Declared in `CFXMLNode.h`.

`kCFXMLEntityTypeParsedInternal`
Indicates a parsed, internal entity.
Available in Mac OS X v10.0 and later.
Declared in `CFXMLNode.h`.

`kCFXMLEntityTypeParsedExternal`
Indicates a parsed, external entity.
Available in Mac OS X v10.0 and later.
Declared in `CFXMLNode.h`.

`kCFXMLEntityTypeUnparsed`
Indicates an unparsed entity.
Available in Mac OS X v10.0 and later.
Declared in `CFXMLNode.h`.

`kCFXMLEntityTypeCharacter`
Indicates a character entity type.
Available in Mac OS X v10.0 and later.
Declared in `CFXMLNode.h`.

Discussion

These codes are used with the `CFXMLEntityInfo` (page 12) and `CFXMLEntityReferenceInfo` (page 12) structures.

Node Current Version

The version of a CFXMLNode object.

```
enum {
    kCFXMLNodeCurrentVersion = 1
};
```

Constants

`kCFXMLNodeCurrentVersion`

The current version of CFXMLNode objects.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

Node Type Code

The various XML data type identification codes that the parser uses to describe XML structures.

```
enum CFXMLNodeTypeCode {
    kCFXMLNodeTypeDocument = 1,
    kCFXMLNodeTypeElement = 2,
    kCFXMLNodeTypeAttribute = 3,
    kCFXMLNodeTypeProcessingInstruction = 4,
    kCFXMLNodeTypeComment = 5,
    kCFXMLNodeTypeText = 6,
    kCFXMLNodeTypeCDATASection = 7,
    kCFXMLNodeTypeDocumentFragment = 8,
    kCFXMLNodeTypeEntity = 9,
    kCFXMLNodeTypeEntityReference = 10,
    kCFXMLNodeTypeDocumentType = 11,
    kCFXMLNodeTypeWhitespace = 12,
    kCFXMLNodeTypeNotation = 13,
    kCFXMLNodeTypeElementTypeDeclaration = 14,
    kCFXMLNodeTypeAttributeListDeclaration = 15
};
typedef enum CFXMLNodeTypeCode CFXMLNodeTypeCode;
```

Constants

`kCFXMLNodeTypeDocument`

Indicates a document where the data string is `NULL` and the additional information is a pointer to a `CFXMLDocumentInfo` (page 10) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeElement`

Indicates an element where the data string is the name of the tag and the additional information is a pointer to a `CFXMLElementInfo` (page 11) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeAttribute`

Currently not used.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeProcessingInstruction`
Indicates a processing instruction where the data string is the name of the target and the additional information is a pointer to a `CFXMLProcessingInstructionInfo` (page 14) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeComment`
Indicates a comment section where the data string is the text of the comment and the additional information is `NULL`.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeText`
Indicates a text section where the data string is the text's contents and the additional information is `NULL`.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeCDATASection`
Indicates a CDATA section where the data string is the text of the CDATA and the additional information is `NULL`.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeDocumentFragment`
Currently not used.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeEntity`
Indicates an entity where the data string is the name of the entity and the additional information is a pointer to a `CFXMLEntityInfo` (page 12) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeEntityReference`
Indicates an entity reference where the data string is the name of the referenced entity and the additional information is a pointer to a `CFXMLEntityReferenceInfo` (page 12) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeDocumentType`
Indicates a document type where the data string is the name given to the top-level element and the additional information is a pointer to a `CFXMLDocumentTypeInfo` (page 10) structure.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeWhitespace`
Indicates white space where the data string is the text of the white space and the additional information is `NULL`.

Available in Mac OS X v10.0 and later.

Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeNotation`
: Indicates a notation where the data string is the notation name and the additional information is a pointer to a `CFXMLNotationInfo` (page 14) structure.

  Available in Mac OS X v10.0 and later.

  Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeElementTypeDeclaration`
: Indicates an element type declaration where the data string is the tag name and the additional information is a pointer to a `CFXMLElementTypeDeclarationInfo` (page 11) structure.

  Available in Mac OS X v10.0 and later.

  Declared in `CFXMLNode.h`.

`kCFXMLNodeTypeAttributeListDeclaration`
: Indicates an attribute list declaration where the data string is the tag name and the additional information is a pointer to a `CFXMLAttributeListDeclarationInfo` (page 9) structure.

  Available in Mac OS X v10.0 and later.

  Declared in `CFXMLNode.h`.

Discussion
When the parser encounters a new XML structure, its data type and contents are placed in a CFXMLNode object.

Document Revision History

This table describes the changes to *CFXMLNode Reference*.

Date	Notes
2006-02-07	Made formatting changes.
2005-08-11	Cosmetic changes to conform to documentation guidelines.
2003-01-01	First version of this document.

Document Revision History

Index

C

CFXMLAttributeDeclarationInfo structure 9
CFXMLAttributeListDeclarationInfo structure 9
CFXMLDocumentInfo structure 10
CFXMLDocumentTypeInfo structure 10
CFXMLElementInfo structure 11
CFXMLElementTypeDeclarationInfo structure 11
CFXMLEntityInfo structure 12
CFXMLEntityReferenceInfo structure 12
CFXMLExternalID structure 13
CFXMLNodeCreate function 5
CFXMLNodeCreateCopy function 6
CFXMLNodeGetInfoPtr function 7
CFXMLNodeGetString function 7
CFXMLNodeGetTypeCode function 8
CFXMLNodeGetTypeID function 8
CFXMLNodeGetVersion function 8
CFXMLNodeRef data type 13
CFXMLNotationInfo structure 14
CFXMLProcessingInstructionInfo structure 14

E

Entity Type Code 15

K

kCFXMLEntityTypeCharacter constant 15
kCFXMLEntityTypeParameter constant 15
kCFXMLEntityTypeParsedExternal constant 15
kCFXMLEntityTypeParsedInternal constant 15
kCFXMLEntityTypeUnparsed constant 15
kCFXMLNodeCurrentVersion constant 16
kCFXMLNodeTypeAttribute constant 16
kCFXMLNodeTypeAttributeListDeclaration constant 18
kCFXMLNodeTypeCDATASection constant 17
kCFXMLNodeTypeComment constant 17
kCFXMLNodeTypeDocument constant 16
kCFXMLNodeTypeDocumentFragment constant 17
kCFXMLNodeTypeDocumentType constant 17
kCFXMLNodeTypeElement constant 16
kCFXMLNodeTypeElementTypeDeclaration constant 18
kCFXMLNodeTypeEntity constant 17
kCFXMLNodeTypeEntityReference constant 17
kCFXMLNodeTypeNotation constant 18
kCFXMLNodeTypeProcessingInstruction constant 17
kCFXMLNodeTypeText constant 17
kCFXMLNodeTypeWhitespace constant 17

N

Node Current Version 15
Node Type Code 16