Freescale Semiconductor, Inc.

# CodeWarrior™ Development Tools

# IDE 5.1 SDK API Reference

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# 1

# Introduction

Welcome to the CodeWarrior™ *IDE 5.1 SDK API Reference*.

This book documents the various APIs that you can use to extend or replace the features of the CodeWarrior IDE.

This book consists of two sections:

- Section 1: Plug-in API
- Section 2: COM API

# Section 1: Plug-in API

This section includes the following chapters:

- Introduction to the Plug-in API
- Plug-in API Reference
- Compiler and Linker Plug-in Reference
- Browser Reference
- Settings Panel Plug-in API Reference
- Version Control System Plug-in API
- PowerPC Object Code (Mac OS)

# 2

# Introduction to the Plug-in API

The plug-in API lets you extend the CodeWarrior IDE to include new features or to replace existing features. For example, you can write a plug-in to create a new preference panel. You can also write a plug-in that links the IDE to a different compiler or linker.

The IDE itself uses plug-ins to provide most of its services. For example, the IDE's standard compiler consists of a compiler plug-in with a small number of panel plug-ins to let users control its settings.

# 3

# Plug-in API Reference

This chapter describes the part of the plug-in SDK that all plug-ins can use. Later chapters describe the parts of the SDK that relate to specific kinds of plug-ins (such as compiler plug-ins).

This chapter covers the following topics:

- Routines for Plug-ins
- Plug-In Entry Points
- Data Structures for Plug-ins
- Constants for Plug-ins
- Result Codes for Plug-ins

## Routines for Plug-ins

This section documents the SDK methods that all plug-ins can use.

### Plug-in Context

All the routines provided by the CodeWarrior IDE require a value of type `CWPluginContext` to be passed as the first parameter. See "CWPluginContext" on page 108 and "Main Entry Point context Parameter" in the *IDE SDK Developer's Guide* for more information.

### Alphabetical Routine Index

This section lists all common plug-in routines alphabetically.

- `CWAddProjectEntry`
- `CWAlert`
- `CWAllocateMemory`
- `CWAllocMemHandle`

- CWCreateNewTextDocument
- CWDonePluginRequest
- CWFindAndLoadFile
- CWFreeMemHandle
- CWFreeMemory
- CWGetAccessPathInfo
- CWGetAccessPathListInfo
- CWGetAccessPathSubdirectory
- CWGetAPIVersion
- CWGetCallbackOSError
- CWGetCOMApplicationInterface
- CWGetCOMProjectInterface
- CWGetCOMDesignInterface
- CWGetCOMTargetInterface
- CWGetFileInfo
- CWGetFileText
- CWGetFrameworkCount
- CWGetFrameworkInfo
- CWGetFrameworkSharedLibrary
- CWGetIDEInfo
- CWGetMemHandleSize
- CWGetNamedPreferences
- CWGetOutputFileDirectory
- CWGetOverlay1FileInfo
- CWGetOverlay1GroupsCount
- CWGetOverlay1GroupInfo
- CWGetOverlay1Info
- CWGetPluginData
- CWGetPluginRequest
- CWGetProjectFile
- CWGetProjectFileCount

- CWGetSegmentInfo
- CWGetTargetDataDirectory
- CWGetTargetName
- CWLockMemHandle
- CWMacOSErrToCWResult
- CWPostDialog
- CWPostFileAction
- CWPreFileAction
- CWPreDialog
- CWReleaseFileText
- CWRemoveProjectEntry
- CWReportMessage
- CWResizeMemHandle
- CWResolveRelativePath
- CWSetModDate
- CWSetPluginOSError
- CWShowStatus
- CWStorePluginData
- CWUnlockMemHandle
- CWUserBreak

## Functional Routine Index

This section lists all common plug-in routines grouped by function.

### Request Handling

- CWDonePluginRequest
- CWGetPluginRequest

### Memory Management

- CWAllocateMemory
- CWAllocMemHandle
- CWFreeMemHandle

- CWFreeMemory
- CWGetMemHandleSize
- CWLockMemHandle
- CWResizeMemHandle
- CWUnlockMemHandle

### Plug-in Data

- CWGetPluginData
- CWStorePluginData

### Preference Data

- CWGetNamedPreferences

### File Management

- CWFindAndLoadFile
- CWGetFileInfo
- CWGetFileText
- CWPostFileAction
- CWPreFileAction
- CWReleaseFileText
- CWSetModDate

### Directory Information

- CWGetAccessPathInfo
- CWGetAccessPathListInfo
- CWGetAccessPathSubdirectory
- CWResolveRelativePath

### Project File Information

- CWAddProjectEntry
- CWGetProjectFile
- CWGetProjectFileCount

### Target Information

- CWGetTargetDataDirectory
- CWGetTargetName
- CWGetOutputFileDirectory

### Overlay Information

- CWGetOverlay1FileInfo
- CWGetOverlay1GroupInfo
- CWGetOverlay1GroupsCount
- CWGetOverlay1Info

### Segment Information

- CWGetSegmentInfo

### IDE Information

- CWGetAPIVersion
- CWGetIDEInfo

### User Interaction

- CWAlert
- CWCreateNewTextDocument
- CWPostDialog
- CWPreDialog
- CWReportMessage
- CWShowStatus
- CWUserBreak

### Error Handling

- CWGetCallbackOSError
- CWMacOSErrToCWResult
- CWSetPluginOSError

### COM Object Interfaces

- CWGetCOMApplicationInterface

- `CWGetCOMProjectInterface`
- `CWGetCOMDesignInterface`
- `CWGetCOMTargetInterface`

**NOTE** The COM routines are for use by COM plug-ins. COM routines do not work within compiler, linker, preference panel, or VCS plug-ins. See Section 2 of this book for more information.

## CWAddProjectEntry

Description — Adds a file to a project.

Prototype

```
#include <"DropinCompilerLinker.h">
CW_CALLBACK CWAddProjectEntry(
   CWPluginContext              context,
   const CWFileSpec*            fileSpec,
   Boolean                      isGenerated,
   const CWNewProjectEntryInfo* projectEntryInfo,
   long*                        whichfile);
```

Parameters — The parameters for this Method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filespec` | Specifies the file to add to the project. |
| `isGenerated` | When true, specifies that the file has been created for the current request. For example, a compiler that generates a C source code file and adds it to the project would pass true in `isGenerated`. |

| | |
|---|---|
| projectEntryInfo | Specifies where to add the new file. Contains fields for flat, segmented, and overlayed linkers. The appropriate fields should be set for whichever model is used by the current linker. All position indexes are zero-based. If the pointer to this struct is NULL, the IDE will use default values for positioning the new file. |
| whichfile | Returns the index at which the file was added, in current target link order. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks If a plug-in calls `CWAddProjectEntry` during a make operation that is in progress, the IDE will restart the build operation.

See Also "Adding a File to a Project" in the *IDE SDK Developer's Guide*

"CWFileSpec" on page 98

"CWNewProjectEntryInfo" on page 103

"CWSetModDate" on page 78

"CWRemoveProjectEntry" on page 75

## CWAlert

Description Displays a message in the IDE's message window.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWAlert(
   CWPluginContext  context,
   const char*      msg1,
   const char*      msg2,
   const char*      msg3,
   const char*      msg4);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `msg1, msg2, msg3, msg4` | Specifies the alert text, as C character strings. All four strings are concatenated in suffix order before display. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — To create a message in a modal dialog box, use `CWReportMessage` instead.

See Also — "CWReportMessage" on page 75

## CWAllocateMemory

Description — Allocates a block of memory referred to by a pointer.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWAllocateMemory(
   CWPluginContext  context,
   long             size,
   Boolean          isPermanent,
   void**           ptr);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `size` | Specifies the size of the block to allocate, in bytes. |
| `isPermanent` | Specifies the life of the allocation. If `isPermanent` is true, the IDE preserves the memory between requests to the plug-in and even after the plug-in is unloaded from memory. Memory allocated with `isPermanent` set to true must be explicitly freed by the plug-in itself. If `isPermanent` is false, the IDE frees the memory when the plug-in finishes handling the current request. |
| `ptr` | Returns a pointer to the allocated memory. The pointer is valid only if `CWAllocateMemory` returns `cwNoErr`. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks The pointer returned by this routine should be disposed of by calling `CWFreeMemory`.

The only reliable way to manage permanently allocated memory is to allocate it when the IDE makes a `reqTargetLoaded` call to the plug-in and to dispose of it during a `reqTargetUnloaded` call.

See Also “Managing Target Storage” in the *IDE SDK Developer’s Guide*

“CWFreeMemory” on page 48

“reqTargetLoaded” on page 219

“reqTargetUnloaded” on page 220

## CWAllocMemHandle

Description Allocates a `CWMemHandle`, which refers to an indirectly referenced, resizable block of memory.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWAllocMemHandle(
   CWPluginContext  context,
   long             size,
   Boolean          useTempMemory,
   CWMemHandle*     handle);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `size` | Specifies the size of the block to allocate, in bytes. |
| `useTempMemory` | Specifies whether the memory allocation should be from the temporary (process manager) heap or the application heap. Set this parameter to true to use temporary memory. This flag only affects Mac OS-hosted plug-ins. |
| `handle` | Returns the allocated memory in a `CWMemHandle`. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks The handle returned by this routine should be disposed of by calling `CWFreeMemHandle`. Memory allocated by this routine can only be referenced indirectly, by first calling `CWLockMemHandle`. When access to a handle is no longer required, it should be unlocked using `CWUnlockMemHandle`.

The IDE frees any memory allocated with `CWAllocMemHandle` when the plug-in finishes servicing a request. To allocate memory that persists between calls made by the IDE, use `CWAllocateMemory`.

See Also “CWAllocateMemory” on page 42

“CWFreeMemHandle” on page 47

“CWGetMemHandleSize” on page 60

“CWLockMemHandle” on page 70

“CWMemHandle” on page 102

“CWResizeMemHandle” on page 77

“CWUnlockMemHandle” on page 82

## CWCreateNewTextDocument

Description Opens a new text editor window containing specified text.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWCreateNewTextDocument(
   CWPluginContext              context,
   const CWNewTextDocumentInfo* docinfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| docinfo | Specifies the name and contents of the new editor window. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks Use `CWCreateNewTextDocument` to open a text editor window in which to present the textual result of an operation. A compiler or linker typically uses this routine to show disassembly and preprocessor text.

See Also "CWNewTextDocumentInfo" on page 105

## CWDonePluginRequest

Description Tells the IDE that a plug-in has finished handling a request.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWDonePluginRequest(
   CWPluginContext   context,
   CWResult          resultCode);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `resultCode` | A value indicating whether the plug-in was able to handle a request successfully. Use `cwNoErr` if the plug-in handled the request successfully. Use `cwErrRequestFailed` if the plug-in was not able to complete the request successfully. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks When a plug-in has finished servicing a request, a plug-in must call `CWDonePluginRequest` to indicate success or failure to the IDE. In addition, the plug-in should pass the result code returned from `CWDonePluginRequest` back to the IDE when returning from its `main()` function.

See Also "cwNoErr" on page 133

"cwErrRequestFailed" on page 131

## CWFindAndLoadFile

Description Locates and optionally loads the contents of a file and specifies a file dependency.

Prototype
```
#include "DropinCompilerLinker.h"
```

```
CW_CALLBACK CWFindAndLoadFile(
   CWPluginContext  context,
   const char*      filename,
   CWFileInfo*      fileinfo);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filename` | Specifies the name of the file to search for and load. The IDE searches within the project and the access paths specified by the project. If more than one file has the same name, the IDE loads the first file found. |
| `fileinfo` | Specifies the file to load and any dependency information. On return, contains information about the file loaded. |

Return

See "Result Codes for Plug-ins" on page 129.

Remarks

Use `CWFindAndLoadFile` to search for a file in one of the access paths listed in the **Access Paths** panel of the current target. Use this method to load header and interface files that are not necessarily in the project. If `CWFindAndLoadFile` successfully finds the file and optionally loads it into memory, it returns `cwNoErr`.

The `fileinfo` object has a `suppressload` parameter, which is a boolean value that controls whether the IDE tries to load the file into memory. If `suppressload` is true, the IDE does not load the file into memory, regardless of its type. If `supressload` is false, `CWFindAndLoadFile` attempts to load the requested file into memory. `CWFindAndLoadFile` loads a file into memory only if it is a text file or a cached and precompiled header file.

When `CWFindAndLoadFile` finds a file and loads it into memory, it sets the following fields in `fileinfo`:

| | |
|---|---|
| `filespec` | The specification for the file |
| `filedata` | A pointer to the file's contents in memory. NULL if the file is not loaded into memory. |

| | |
|---|---|
| `filedatalength` | The size of the file's contents, in bytes. 0 if the file is not loaded into memory. |
| `filedatatype` | `cwFileTypeText` if the file contains text, `cwFileTypePrecompiledHeader` if the file is a cached and precompiled header, or `cwFileTypeUnknown` for any other kind of file. |

**NOTE** Every call to `CWFindAndLoadFile` that returns (non-`NULL`) `filedata` must be balanced by a single call to `CWReleaseFileText`.

The `isdependentoffile` and `dependencyType` fields of the `CWFileInfo` structure specify a source file dependency. If `dependencyType` is set to `cwNormalDependency` or `cwInterfaceDependency`, the IDE recompiles the file specified in the `isdependentoffile` parameter when the interface or content of the file specified by `filespec` changes. If `dependencyType` is set to `cwNoDependency`, the IDE assumes no dependency exists.

`isdependentoffile` specifies which file depends upon the file being searched for, by index. You can set the value of `isdependentoffile` to `kCurrentCompiledFile` to specify that the file currently being compiled is the dependent file.

See Also "CWFileInfo" on page 95

"CWDependencyType" on page 93

"CWGetFileText" on page 56

"CWCachePrecompiledHeader" on page 138

"CWReleaseFileText" on page 74

## CWFreeMemHandle

Description Releases handles allocated with `CWAllocMemHandle`.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWFreeMemHandle(
```

```
   CWPluginContext   context,
   CWMemHandle       handle);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `handle` | The `CWMemHandle` to deallocate. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks To free a `CWMemHandle` allocated with `CWAllocMemHandle`, use `CWFreeMemHandle`. A plug-in should free a handle only once. Do not use `CWFreeMemHandle` to free blocks that are not handles.

**NOTE** All handles are automatically freed when a plug-in returns to the IDE. However, you can increase performance by freeing large memory blocks as soon as you can.

See Also "CWAllocMemHandle" on page 43

"CWGetMemHandleSize" on page 60

"CWLockMemHandle" on page 70

"CWMemHandle" on page 102

"CWResizeMemHandle" on page 77

"CWUnlockMemHandle" on page 82

## CWFreeMemory

Description Releases a pointer created by `CWAllocateMemory`.

Prototype
```
#include "DropinCompilerLinker.h"
   CW_CALLBACK CWFreeMemory(
   CWPluginContext   context,
   void*             ptr,
   Boolean           isPermanent);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| ptr | The pointer block to deallocate. |
| isPermanent | The value passed must match the value used when allocating the pointer with CWAllocateMemory. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — A plug-in should free a pointer only once. Do not use CWFreeMemory to free objects that are not pointers.

**NOTE** A plug-in should balance every call to CWAllocateMemory with a single corresponding call to CWFreeMemory for the same pointer.

See Also — "Allocating and Releasing Handles" in the *IDE SDK Developer's Guide*

"CWAllocateMemory" on page 42

## CWGetAccessPathInfo

Description — Returns information about a single access path specified for the current project target.

Prototype
```
#include "CWPlugins.h"
CW_CALLBACK CWGetAccessPathInfo(
   CWPluginContext     context,
   CWAccessPathType    pathType,
   long                whichPath,
   CWAccessPathInfo*   pathInfo);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| pathType | Set to one of cwSystemPath or cwUserPath. Specifies whether to return a user path or system path. |
| whichPath | A zero-based index for the path to be returned. |
| pathInfo | Returns information about the specified path. |

Returns — See "Result Codes for Plug-ins" on page 129.

Remarks — Plug-ins use `CWGetAccessPathInfo` to obtain information about the access paths specified in the **Access Paths** panel. Plug-ins can use `CWGetAccessPathListInfo` to get the number of user or system paths in the project . By using an index that ranges from 0 to `systemPathCount - 1` or `userPathCount - 1`, plug-ins can iterate all system or user paths in the current project.

The information returned in `pathinfo` includes the `CWFileSpec` for the access path, as well as a count of subdirectories and a flag indicating whether the IDE searches subdirectories of the path for project files or just the access path itself. If subdirectory searching is disabled, `CWGetAccessPathInfo` returns 0 for the subdirectory count, regardless of how many subdirectories actually exist in the access path.

To obtain information about the subdirectories of project access paths, use `CWGetAccessPathSubdirectory`.

See Also — "CWFileSpec" on page 98

"CWGetAccessPathListInfo" on page 50

"CWGetAccessPathSubdirectory" on page 51

"CWAccessPathInfo" on page 89

## CWGetAccessPathListInfo

Description — Returns information about the access paths specified for the current project.

Prototype —

```
#include "CWPlugins.h"
CW_CALLBACK CWGetAccessPathListInfo(
   CWPluginContext        context,
   CWAccessPathListInfo*  pathListInfo);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| pathListInfo | Returns information about the access paths specified for the current project target, including the number of user and system paths. |

Returns — See "Result Codes for Plug-ins" on page 129.

Remarks — Plug-ins can determine the number of user and system paths in the current project target by calling `CWGetAccessPathListInfo`.

See Also — "CWAccessPathListInfo" on page 90

## CWGetAccessPathSubdirectory

Description — Returns information about a subdirectory of a project path.

Prototype

```
#include "CWPlugins.h"
CW_CALLBACK CWGetAccessPathSubdirectory(
   CWPluginContext context,
   CWAccessPathType pathType,
   long whichPath,
   long whichSubdirectory,
   CWFileSpec* subdirectory);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| pathType | Set to one of `cwSystemPath` or `cwUserPath`. Specifies whether to return information about a subdirectory within a user path or a system path. |
| whichPath | A zero-based index specifying a path of type `pathType` in the current target. |
| whichSubdirectory | A zero-based index specifying a subdirectory of `whichPath`. |
| subdirectory | Returns a file specification object for the requested access path subdirectory. |

Returns — See "Result Codes for Plug-ins" on page 129.

Remarks

Use `CWGetAccessPathSubdirectory` to obtain the subdirectories of any project path for which recursive project path searching is enabled. Plug-ins can use this method to create a list of search paths to pass to command line tools.

**NOTE**

`CWGetAccessPathSubdirectory` does not return subdirectories for access paths for which recursive path searching is disabled, regardless of how many actual subdirectories may exist. See the *IDE User's Guide* for how to change the recursive search setting.

To determine the range of valid indexes for `whichPath`, use `CWGetAccessPathListInfo`. To determine the range of indexes for `whichSubdirectory`, use `CWGetAccessPathInfo`.

See Also

"CWGetAccessPathInfo" on page 49

"CWGetAccessPathListInfo" on page 50

## CWGetAPIVersion

Description

Returns the version of the plug-in API that the IDE uses interact with the plug-in.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetAPIVersion(
   CWPluginContext   context,
   long*             version);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `version` | Returns the version number of the API the IDE uses interact with the plug-in. |

Returns

See "Result Codes for Plug-ins" on page 129.

Remarks

Plug-ins can use `CWGetAPIVersion` at runtime to get the version of the plug-in API that the IDE uses to communicate with the plug-in.

**NOTE**

The IDE does not always use the latest version of the API. The IDE uses an older version when the plug-in requires an earlier API

version. The plug-in tells the IDE that the plug-in needs an earlier version of the API by setting the value of the `newestAPIVersion` parameter in the `CWPlugin_GetDropInFlags` entry point.

See Also "CWGetIDEInfo" on page 59

"DROPINCOMPILERLINKERAPIVERSION" on page 196

## CWGetCallbackOSError

Description Returns the error the host operating system returned to the IDE the last time the plug-in called the IDE.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetCallbackOSError(
   CWPluginContext  context,
   CWOSResult*      error);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `error` | Returns the last error code reported by the host operating system during a call to the IDE by the plug-in. |

Return `cwNoErr`

Remarks Use this routine to get the error that the host operating system returned to the IDE when the IDE was last called by the plug-in. This lets a plug-in discover the nature of the error when the IDE reports a result of `cwErrOSError`.

See Also "CWMacOSErrToCWResult" on page 71

## CWGetCOMApplicationInterface

Description Returns a reference to a COM interface for the IDE as an application object.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetCOMApplicationInterface(
   CWPluginContext          context,
   struct ICodeWarriorApp   **app);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| app | Returns a reference to the CodeWarrior IDE application's COM interface, which can be used to obtain other properties and services of the IDE. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Compilers, linkers, settings panels, or version control plug-ins cannot use this method.

## CWGetCOMProjectInterface

Description Returns a reference to a COM interface for the current project.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetCOMProjectInterface(
   CWPluginContext              context,
   struct ICodeWarriorProject  **project);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| project | Returns a reference to the current project's COM interface, which can be used to obtain properties and services of the current project. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Compilers, linkers, settings panels, or version control plug-ins cannot use this method.

## CWGetCOMDesignInterface

Description Returns a reference to a COM interface for the design associated with the current target.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetCOMDesignInterface(
   CWPluginContext            context,
   struct ICodeWarriorDesign  **design);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| design | Returns a reference to the current target design's COM interface, which can be used to manipulate user interface controls. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Compilers, linkers, settings panels, or version control plug-ins cannot use this method.

## CWGetCOMTargetInterface

Description Returns a reference to a COM interface for the current project target.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetCOMTargetInterface(
   CWPluginContext            context,
   struct ICodeWarriorTarget  **target);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| target | Returns a reference to the current target's COM interface, which can be used to obtain properties and services of the current target. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Compilers, linkers, settings panels, or version control plug-ins cannot use this method.

## CWGetFileInfo

Description Returns information about a file in the active project.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetFileInfo(
   CWPluginContext    context,
   long               whichfile,
   Boolean            checkFileLocation,
   CWProjectFileInfo* fileinfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | The number of the file in the active target for which to get information. |
| `checkFileLocation` | `true` to request that the IDE verify the location of the file returned in `fileinfo`. `false` to request the most recently cached location for the file. |
| `fileinfo` | Returns information about the file. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetFileInfo` to get information about a file in the active project, such as the file's file specification and modification date. This method also returns a value indicating how the IDE processes the file during build operations.

The `whichfile` argument specifies the index (starting at 0) of the file for which to return information, in the link order of the active project target.

`checkFileLocation` is typically used when iterating over all the files in a project multiple times. Setting this flag to `true` tells the IDE to use cached locations for files, rather than verifying a file's location with the host operating system. In some cases, this may improve performance. Usually, plug-ins set this parameter to `false`, which tells the IDE to verify a file's true location on disk each time `CWGetFileInfo` is called.

**NOTE** The definition of the `fileinfo` structure returned by `CWGetFileInfo` varies by platform.

See Also "CWProjectFileInfo" on page 109

"CWGetProjectFileCount" on page 67

## CWGetFileText

Description Loads the contents of a file.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetFileText(
   CWPluginContext   context,
   const CWFileSpec* filespec,
   const char**      text,
   long*             textLength,
   short*            filedatatype);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filespec` | The file specification of the file to load. |
| `text` | Returns a pointer to the contents of the file. |
| `textLength` | Returns the length of the file's contents in bytes. |
| filedatatype | Returns the file's type. The possible values for this argument include `cwFileTypePrecompiledHeader`, `cwFileTypeText`, and `cwFileTypeUnknown` |

Return

See "Result Codes for Plug-ins" on page 129.

Remarks

Use `CWGetFileText` to retrieve the contents of a file. If the file is a text file that is opened in an editor window, the IDE returns a pointer in `text` to the contents of the open editor window. If the file is on disk and is not open in an editor window, the IDE loads the contents of the file and returns a pointer to that data in `text`.

**NOTE**

Every call to `CWGetFileText` that returns (non-`NULL`) `text` must be balanced by a single call to `CWReleaseFileText`.

`CWGetFileText` returns the text file as a constant. Plug-ins should not modify the text data returned in the text parameter.

See Also

"CWFindAndLoadFile" on page 45

"CWReleaseFileText" on page 74

## CWGetFrameworkCount

Description — Gets the number of frameworks.

Prototype

```
CW_CALLBACK CWGetFrameworkCount(
    CWPluginContext context,
    long* frameworkCount);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `frameworkCount` | Returns the number of frameworks. |

Return — See "Result Codes for Plug-ins" on page 129.

See Also — "CWGetFrameworkInfo" on page 58

"CWGetFrameworkSharedLibrary" on page 59

## CWGetFrameworkInfo

Description — Gets information about a framework, as a CWFrameworkInfo structure.

Prototype

```
CW_CALLBACK CWGetFrameworkInfo(
    CWPluginContext context,
    long whichFramework,
    CWFrameworkInfo* frameworkInfo);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichFramework` | The framework about which to get information. |
| `frameworkInfo` | Returns the framework information. |

Return — See "Result Codes for Plug-ins" on page 129.

See Also — "CWGetFrameworkCount" on page 58

"CWGetFrameworkSharedLibrary" on page 59

"CWFrameworkInfo" on page 100

## CWGetFrameworkSharedLibrary

Description — Gets the shared library for a framework.

Prototype

```
CW_CALLBACK CWGetFrameworkSharedLibrary(
    CWPluginContext context,
    long whichFramework,
    CWFileSpec* frameworkSharedLibrary);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichFramework` | The framework about which to get information. |
| `frameworkSharedLibrary` | Returns the shared library used by the framwork. |

Return — See "Result Codes for Plug-ins" on page 129.

See Also — "CWGetFrameworkCount" on page 58

"CWGetFrameworkInfo" on page 58

## CWGetIDEInfo

Description — This returns version information about the IDE and which version of the dropin API it implements.

Prototype

```
#include "CWPlugins.h"
   CW_CALLBACK CWGetIDEInfo(
   CWPluginContext context,
   CWIDEInfo* info);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| info | Returns information about the IDE, including major, minor, bug fix, and build version numbers, as well as the highest API version supported by the IDE. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks Note that the version of the dropin API returned by this call may be different from the one returned by `CWGetAPIVersion`. `CWGetAPIVersion` returns the version of the API that the IDE is providing to a particular plug-in. This can be less than the IDE's latest supported dropin API version (reported by this call) if a plug-in is written to use an older API.

See Also "CWGetAPIVersion" on page 52

"CWIDEInfo" on page 101

## CWGetMemHandleSize

Description Returns the size of a `CWMemHandle`.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetMemHandleSize(
   CWPluginContext   context,
   CWMemHandle       handle,
   long*             size);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `handle` | The handle whose size is to be determined. |
| `size` | Returns the size of the handle, in bytes. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks To get the size of a block of memory allocated with `CWAllocMemHandle` or resized by `CWResizeMemHandle`, use `CWGetMemHandleSize`.

See Also "CWAllocMemHandle" on page 43

"CWFreeMemHandle" on page 47

"CWResizeMemHandle" on page 77

"CWLockMemHandle" on page 70

"CWUnlockMemHandle" on page 82

## CWGetNamedPreferences

Description — Returns the settings data of a settings panel.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetNamedPreferences(
   CWPluginContext  context,
   const char*      prefsname,
   CWMemHandle*     prefsdata);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `prefsname` | The name of the settings panel whose preferences are to be loaded, specified as a C character string. |
| `prefsdata` | Returns the preference data in a handle. |

Return — See “Result Codes for Plug-ins” on page 129.

Remarks — The IDE returns a `CWMemHandle` in the `prefsdata` parameter. This handle refers to the settings data for the settings panel specified in `prefsname` parameter.

The IDE cannot see the contents and format of the preference data. Only the plug-in and any associated settings panel plug-ins manage and interpret the contents of the settings data.

The returned handle becomes the plug-in’s property. Prior to accessing the handle’s contents, the plug-in should lock the handle with `CWLockMemHandle`. When the handle is no longer needed, the plug-in should free it with `CWFreeMemHandle`.

See Also — “CWMemHandle” on page 102

“CWFreeMemHandle” on page 47

“CWLockMemHandle” on page 70

## CWGetOutputFileDirectory

Description — Returns the folder specified in the **Output Directory** field of the **Target Settings** panel.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetOutputFileDirectory(
   CWPluginContext  context,
   CWFileSpec*      outputFileDirectory);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| outputFileDirectory | Returns the file specification of the output directory. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks Use `CWGetOutputFileDirectory` to determine the location where linker output should be stored, as specified by the user in the **Target Settings** panel.

See Also “CWGetProjectFile” on page 67

## CWGetOverlay1FileInfo

Description Returns information about a file in an overlay.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetOverlay1FileInfo(
   CWPluginContext     context,
   long                whichgroup,
   long                whichoverlay,
   long                whichoverlayfile,
   CWOverlay1FileInfo* fileinfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| whichgroup | Specifies the overlay group number. |
| whichoverlay | Specifies the overlay number. |
| whichoverlayfile | Specifies the overlay file number. |
| fileinfo | Returns information about the file in the overlay. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks Use `CWGetOverlay1FileInfo` to get an overlay file's position within a project. Each of the `whichgroup`, `whichoverlay`, and `whichoverlayfile` indexes is zero based and specifies the overlay component for which to return information. The `fileinfo` result specifies the position in the file list of the current target file.

**NOTE** Overlays are only used for certain embedded targets.

See Also "Getting Information About Overlays and Segments" in the *IDE SDK Developer's Guide*

"Specifying Project Components" in the *IDE SDK Developer's Guide*

"Project Structure" in the *IDE SDK Developer's Guide*

"CWGetOverlay1Info" on page 64

## CWGetOverlay1GroupInfo

Description Returns information about an overlay group in the project.

Prototype
```
#include "DropinCompilerLinker.h"
   CW_CALLBACK CWGetOverlay1GroupInfo(
   CWPluginContext      context,
   long                 whichgroup,
   CWOverlay1GroupInfo* groupinfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichgroup` | The overlay group to get information for. |
| `groupinfo` | Returns information about the overlay group. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetOverlay1GroupInfo` to get the name, the address, and the number of overlays in an overlay group.

Overlay groups are specified by index. The index of the first overlay group is 0. The index of the last is `CWGetOverlay1GroupsCount - 1`.

See Also "CWOverlay1GroupInfo" on page 107

## CWGetOverlay1GroupsCount

Description — Returns the number of overlay groups.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetOverlay1GroupsCount(
   CWPluginContext  context,
   long*            count);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `count` | Returns the number of overlay groups in the project. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Use `CWGetOverlay1GroupsCount` to get the number of overlay groups in the active project.

See Also — "CWGetOverlay1GroupInfo" on page 63

## CWGetOverlay1Info

Description — Returns information about an overlay in a group.

Prototype

```
#include "DropinCompilerLinker.h"
   CW_CALLBACK CWGetOverlay1Info(
   CWPluginContext  context,
   long             whichgroup,
   long             whichoverlay,
   CWOverlay1Info*  overlayinfo);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichgroup` | The overlay group number. |
| `whichoverlay` | The overlay number. |
| overlayinfo | Returns information about the overlay. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetOverlay1Info` to get the name and number of files in an overlay.

The IDE indexes overlays, from 0 to `numoverlays - 1`, where `numoverlays` is the value returned by CWGetOverlay1GroupInfo.

See Also "CWGetOverlay1FileInfo" on page 62

"CWGetOverlay1GroupInfo" on page 63

## CWGetPluginData

Description Returns the plug-in data associated with a file in the active project.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetPluginData(
   CWPluginContext  context,
   long             whichfile,
   CWDataType       type,
   CWMemHandle*     pluginData);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the file to retrieve data for. To obtain global data (that is, data for the target, not a specific target file), specify `kTargetGlobalPluginData`. |
| `type` | Specifies which kind of data to retrieve. |
| `pluginData` | Returns a `CWMemHandle` containing the data associated with the file. Returns `NULL` if no data of type `type` exists. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks `CWGetPluginData` retrieves data in the project for a file. The `whichfile` parameter specifies the file name. The `type` parameter specifies the type of the file. The plug-in must maintain the format of this data, because the IDE never uses this data.

The IDE stores plug-in data until one of the following events occurs:

- The user chooses **Remove Object Code** from the **Project** menu.

- The file is removed from the target.
- The user manually deletes the target data folder.

The returned handle becomes the plug-in's property. Prior to accessing the handle's contents, the plug-in should lock the handle with `CWLockMemHandle`. When the handle is no longer needed, the plug-in should free it with `CWFreeMemHandle`.

See Also "Storing and Retrieving Plug-in Data" in the *IDE SDK Developer's Guide*

"CWFreeMemHandle" on page 47

"CWGetTargetStorage" on page 154

"CWLockMemHandle" on page 70

"CWSetTargetStorage" on page 164

"CWStorePluginData" on page 81

## CWGetPluginRequest

Description Returns a value indicating the task the IDE is currently asking the plug-in to perform.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetPluginRequest(
   CWPluginContext  context,
   long*            request);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `request` | Returns a request code indicating the service the IDE is requesting from the plug-in. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks When called by the IDE, a plug-in should call `CWGetPluginRequest` to determine what the IDE is asking the plug-in to do.

See Also "Basic Request Handling" in the *IDE SDK Developer's Guide*

"Handling Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"Settings Panel Requests" in the *IDE SDK Developer's Guide*

"reqInitialize" on page 127

"reqTerminate" on page 128

## CWGetProjectFile

Description — Returns the file specification of the project file.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetProjectFile(
   CWPluginContext  context,
   CWFileSpec*      projectSpec);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `projectSpec` | Returns the file specification for the project. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Use `CWGetProjectFile` to get a file specification for the active project. Plug-ins can use this method to get information such as the volume or folder where the project is stored.

See Also — "CWGetOutputFileDirectory" on page 61

## CWGetProjectFileCount

Description — Returns the number of files in the current project.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetProjectFileCount(
   CWPluginContext  context,
   long*            count);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `count` | Returns the number of files in the active project. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetProjectFileCount` to get the number of files in the active project target.

See Also "CWGetFileInfo" on page 55

## CWGetSegmentInfo

Description Returns information about a segment in the project.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetSegmentInfo(
   CWPluginContext       context,
   long                  whichsegment,
   CWProjectSegmentInfo* segmentinfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichsegment` | Specifies a segment by index. Indexes are zero based, and match the order specified in the Segments tab of a project. |
| `segmentinfo` | Returns information about the specified segment. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetSegmentInfo` to get information about a segment in the active project. The returned information specifies the segment name and the segment's resource attributes.

**NOTE** Only Mac OS 68K targets use segments.

See Also "CWProjectSegmentInfo" on page 113

## CWGetTargetDataDirectory

Description Returns the directory where files in the current target are stored.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetTargetDataDirectory(
   CWPluginContext  context,
```

```
   CWFileSpec*       targetDataDirectorySpec);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| targetDataDirectorySpec | Returns the directory where data for the current target should be stored. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks `CWGetTargetDataDirectory` returns the target data directory for the current target. If the plug-in needs to store temporary data files with the target, the plug-in should put the files in this folder.

Plug-ins that implement interfaces to command-line utilities generally use this method to store settings and data for the utility. Most plug-ins should use `CWGetTargetStorage` and `CWSetTargetStorage` to store per-target data.

**NOTE** The IDE deletes the files in this directory when the user chooses **Remove Object Code** from the **Project** menu.

See Also "CWGetProjectFile" on page 67

## CWGetTargetName

Description Returns the name of the active target in the active project.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWGetTargetName(
   CWPluginContext  context,
   char*            name,
   short            maxLength);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| name | Returns the target's name as a C string. |
| maxLength | Specifies the space available in the `name` parameter for storing the target name, in bytes. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWGetTargetName` to get the name of the active target in the current project.

See Also "CWGetProjectFile" on page 67

## CWLockMemHandle

Description Gets a pointer to a memory handle that was allocated with `CWMemHandle`.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWLockMemHandle(
   CWPluginContext  context,
   CWMemHandle      handle,
   Boolean          moveHi,
   void**           ptr);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `handle` | The handle for which to get a pointer. |
| `moveHi` | Specifies whether to move the handle to the top of the heap before locking it. If `moveHi` is true, the allocated memory is moved to the top of the heap, potentially reducing heap fragmentation. This flag works only on the Mac OS. |
| `ptr` | Returns a pointer to the handle's memory. The pointer is valid only as long as the handle remains locked. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks To access the memory described by a `CWMemHandle` allocated with `CWAllocMemHandle` or resized with `CWResizeMemHandle`, use `CWLockMemHandle`.

When finished accessing a handle block, a plug-in should call `CWUnlockMemHandle`. On some platforms, locked handles may adversely affect memory management. Unlock handles as soon as possible.

Calls to `CWLockMemHandle` and `CWUnlockMemHandle` are counted. A handle remains locked as long as its lock count is greater

than zero. When initially allocated, handles are unlocked. `CWLockMemHandle` increases a handle's lock count, and `CWUnlockMemHandle` decreases its lock count.

See Also

"CWAllocMemHandle" on page 43

"CWFreeMemHandle" on page 47

"CWGetMemHandleSize" on page 60

"CWResizeMemHandle" on page 77

"CWUnlockMemHandle" on page 82

## CWMacOSErrToCWResult

Description

Converts a Mac OS error code to a `CWResult` error code.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWMacOSErrToCWResult(
   CWPluginContext  context,
   OSErr            err);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `err` | Specifies the Mac OS error code to convert to an IDE error code. |

Return

See "Result Codes for Plug-ins" on page 129.

Remarks

This method converts a Mac OS error code to an IDE error code. This routine always succeeds. The result contains the IDE error code equivalent to the Mac OS error code passed in the `err` parameter.

**NOTE** Because this method can return error codes that do not fit the situation, you should write your own code to convert OS errors to IDE errors.

See Also

"Result Codes for Plug-ins" on page 129

## CWPostDialog

Description — Informs the IDE that a plug-in has finished displaying a dialog box.

Prototype

```
#include "CWPlugins.h"
CW_CALLBACK CWPostDialog(CWPluginContext context);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |

Returns — See "Result Codes for Plug-ins" on page 129.

Remarks — Call `CWPostDialog` after displaying your own dialog box. This routine lets the IDE's internal window manager operate properly with your dialogs. Call `CWPreDialog` before displaying the dialog.

See Also — "Displaying Plug-in Dialog Boxes" in the *IDE SDK Developer's Guide*

"CWPreDialog" on page 73

## CWPostFileAction

Description — Tells the IDE that a plug-in has relinquished access to a file, allowing the IDE to reopen and reload the file, if necessary.

Prototype

```
#include "CWPlugins.h"
CW_CALLBACK CWPostFileAction (
   CWPluginContext   context,
   const CWFileSpec  *theFile);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `theFile` | Specifies the file the plug-in has finished accessing. |

Returns — See "Result Codes for Plug-ins" on page 129.

Remarks — A plug-in should call `CWPostFileAction` after opening, reading, writing, or otherwise modifying any file in the current project for which `CWPreFileAction` was previously called. This routine tells the IDE that the plug-in has relinquished control over the file and that the IDE can reopen the file if the user has the file open in the IDE. A plug-in should call `CWPreFileAction` before accessing the

file. Plug-ins need to use these methods only when accessing files directly, rather than through the plug-in API.

**NOTE** Only version control plug-ins can use this method.

See Also "CWPreFileAction" on page 73

## CWPreDialog

Description Informs the IDE that a plug-in is about to display a dialog box.

Prototype
```
#include "CWPlugins.h"
CW_CALLBACK CWPreDialog (CWPluginContext context);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks Call `CWPreDialog` prior to display your own dialog in a plug-in. This routine lets the IDE's internal window manager operate properly with your dialogs. Be sure to call CWPostDialog after displaying the dialog box.

See Also "Displaying Plug-in Dialog Boxes" in the *IDE SDK Developer's Guide*

"CWPostDialog" on page 72

## CWPreFileAction

Description Informs the IDE that a plug-in needs access to a file that the IDE may have open.

Prototype
```
#include "CWPlugins.h"
CW_CALLBACK CWPreFileAction
   (CWPluginContext context, const CWFileSpec
   *theFile);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| theFile | Specifies the file the plug-in would like to access. |

Returns See "Result Codes for Plug-ins" on page 129.

Remarks A plug-in should call `CWPreFileAction` when it needs to read or write to the file specified by `theFile`. This tells the IDE that the plug-in needs access to the specified file, and that it should be closed. A plug-in should also call `CWPostFileAction` after acessing the file.

**NOTE** Currently, this routine is only available to version control plug-ins. This may change in the future.

See Also "CWPostFileAction" on page 72

## CWReleaseFileText

Description Releases the contents of a file retrieved with `CWGetFileText` or `CWFindAndLoadFile`.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWReleaseFileText(
   CWPluginContext  context,
   const char* text);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `text` | A pointer to the contents of a file previously loaded by `CWGetFileText` or `CWFindAndLoadFile`. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks Use `CWReleaseFileText` to free the contents of a file retrieved using `CWGetFileText` or `CWFindAndLoadFile`.

**NOTE** Every call to `CWGetFileText` or `CWFindAndLoadFile` that returns a non-`NULL` `text` or `filedata` pointer must be balanced by a corresponding call to `CWReleaseFileText`.

See Also "CWGetFileText" on page 56

"CWFindAndLoadFile" on page 45

## CWRemoveProjectEntry

Description — Removes a file from the current target.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWRemoveProjectEntry(
   CWPluginContext context,
   const CWFileSpec* fileSpec)
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| fileSpec | The file that needs to be removed. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Use `CWRemoveProjectEntry` to remove a file from the project.

**NOTE** If a plug-in calls `CWRemoveProjectEntry` during a make operation, the IDE restarts the build operation.

See Also — "Removing a File from a Project" in the *IDE SDK Developer's Guide*

"CWFileSpec" on page 98

## CWReportMessage

Description — Displays an error, warning, or informational message in the IDE's errors and warnings window (a modal dialog box).

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWReportMessage(
   CWPluginContext     context,
   const CWMessageRef* msgRef,
   const char *        line1,
   const char *        line2,
   short               errorlevel,
   long                errorNumber);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `msgRef` | Specifies the source text that generated the message. Use `NULL` for informational messages. |
| `line1`, `line2` | Message text, specified as C character strings. Each string appears on a separate line in the message window. |
| `errorlevel` | Specifies the kind of message. Valid values are `messagetypeInfo`, `messagetypeWarning`, and `messagetypeError`. |
| `errorNumber` | Reserved value. Use NULL. |

Return

See "Result Codes for Plug-ins" on page 129.

Remarks

To display an informational message using `CWReportMessage`, specify `messagetypeInfo` for `errorlevel` and pass `NULL` for `msgRef`. If you instead pass a pointer to a `CWMessageRef`, the message appears as a warning. The contents of `line1` and `line2` appear on separate lines.

To display an error or warning using `CWReportMessage`, specify `messagetypeError` or `messagetypeWarning` respectively, and fill in `msgRef`. Generally, `line1` contains an error description , and `line2` contains a portion of the source code that caused the error.

To have a message appear in the IDE's message bar, use `CWAlert` instead.

See Also

"CWAlert" on page 41

"CWShowStatus" on page 80

## CWResizeMemHandle

Description — Changes the size of a `CWMemHandle`.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWResizeMemHandle(
   CWPluginContext  context,
   CWMemHandle      handle,
   long             newSize);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `handle` | Specifies the handle to resize. |
| `newSize` | Specifies the new handle size, in bytes. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Use `CWResizeMemHandle` to change the size of a handle created with `CWAllocMemHandle`. `CWResizeMemHandle` supports resizing a handle to a smaller or larger size. Zero is a valid handle size.

See Also — "CWAllocMemHandle" on page 43

"CWFreeMemHandle" on page 47

"CWGetMemHandleSize" on page 60

"CWLockMemHandle" on page 70

"CWUnlockMemHandle" on page 82

## CWResolveRelativePath

Description — Determines the absolute location of a path specified relative to another.

Prototype

```
#include "CWPlugins.h"
CW_CALLBACK CWResolveRelativePath(
   CWPluginContext        context,
   const CWRelativePath*  relativePath,
   CWFileSpec*            fileSpec,
   Boolean                create);
```

Parameters The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| relativePath | A pointer to a `CWRelativePath` structure specifying the relative path to resolve. |
| fileSpec | Returns a `CWFileSpec` specifying the absolute location described by the relative path. |
| create | If the relative path specified by `relativePath` is not found, and this parameter is set to true, the path will be created. |

Return See “Result Codes for Plug-ins” on page 129.

Remarks Use `CWResolveRelativePath` to resolve a relative path to a full path. Plug-ins use this method to determine the absolute path of a relative path stored in project preferences. Plug-ins can use CWPanelChooseRelativePath to get the relative path.

See Also “CWRelativePath” on page 113

“CWPanelChooseRelativePath” on page 272

## CWSetModDate

Description Sets the internal modification date of a file.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWSetModDate(
   CWPluginContext   context,
   const CWFileSpec* filespec,
   CWFileTime*       moddate,
   Boolean           isGenerated);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filespec` | Specifies which file’s modification date to set. |

| | |
|---|---|
| `moddate` | Specifies the date and time that the file was modified. |
| `isGenerated` | Pass true in this argument to tell the IDE that the file has been created during the current request. For example, a compiler that generates a C source code as its output would pass true in `isGenerated`. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Plug-ins should call `CWSetModDate` after modifying a file in the current project. This informs the IDE that a file has changed and allows it to update its internal dependency tracking information. `CWSetModDate` does not change a file's modification date but rather changes the IDE's internal understanding of when a file was modified.

Generally, plug-ins should set the `isGenerated` flag to true. The flag should be set if the plug-in generated the contents of the file. `isGenerated` should be set false for a file used by the project but not generated by the plug-in.

See Also — "Adding a File to a Project" in the *IDE SDK Developer's Guide*

"CWAddProjectEntry" on page 40

"CWFileSpec" on page 98

"CWFileTime" on page 100

"CWGetProjectFile" on page 67

## CWSetPluginOSError

Description — Informs the IDE of an OS error code generated during the current plug-in request.

Prototype —

```
#include "DropinCompilerLinker.h"
   CW_CALLBACK CWSetPluginOSError(
   CWPluginContext  context,
   CWOSResult       result);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `result` | The error code generated by the host operating system. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — If a plug-in fails to act on a request because of an error returned by the host operating system, the plug-in may pass the error along to the IDE through `CWSetPluginOSError`.

See Also — "CWMacOSErrToCWResult" on page 71

## CWShowStatus

Description — Presents progress information during a build operation.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWShowStatus(
   CWPluginContext  context,
   const char*      line1,
   const char*      line2);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `line1`, `line2` | Pass text describing plug-in status in these arguments as C character strings. |

Return — See "Result Codes for Plug-ins" on page 129.

Remarks — Use `CWShowStatus` to display status information during a long operation. The IDE displays `line1` and `line2` in the linker status window.

**NOTE** This method works only for linkers.

See Also — "CWReportMessage" on page 75

"CWAlert" on page 41

## CWStorePluginData

Description — Associates arbitrary, persistently stored plug-in data with a file in the active target.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWStorePluginData(
   CWPluginContext  context,
   long             whichfile,
   CWDataType       type,
   CWMemHandle      pluginData);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the project file with which to associate the data. To specify data for the entire target and not a specific file, use `kTargetGlobalPluginData`. |
| `type` | Specifies the kind of data. The plug-in assigns a four-character code for this value. |
| `pluginData` | A `CWMemHandle` containing the data to be stored with the file. |

Return — See “Result Codes for Plug-ins” on page 129.

Remarks — The plug-in must maintain the format of this data, because the IDE never uses this data. Plug-ins may store any data they choose and can assign the data any unique four-character type code.

**NOTE** Metrowerks reserves lower-case type codes. Use a mixed-case or upper-case value.

By requesting the same type of data for the same file, a plug-in can retrieve data stored by another plug-in.

In the `whichfile` parameter specifies, use the index number of a file in the current target. The index number comes from the target’s link order.File numbers range from `0` to the count returned by `CWGetProjectFileCount - 1`. To store data with the current target (rather than a specific file), use `kTargetGlobalPluginData` in the `whichfile` parameter.

The data to be stored must reside in a `CWMemHandle` allocated by `CWAllocMemHandle`. The handle becomes the property of the IDE.

By using different data types in the `type` parameter, a plug-in can store more than one kind of data for a file in the project. Calling `CWStorePluginData` with a type of data that has already been stored will replace the original data.

Plug-in data associated with a file is kept in the project's target data file and thus persists across invocations of the plug-in and the IDE. The IDE stores plug-in data until one of the following events occurs:

- the user chooses **Remove Object Code** from the **Project** menu
- the file is removed from the target
- the user manually deletes the target data folder

See Also "CWGetPluginData" on page 65

"CWAllocMemHandle" on page 43

## CWUnlockMemHandle

Description Tells the IDE that a plug-in no longer needs access to a `CWMemHandle`.

Prototype
```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWUnlockMemHandle(
   CWPluginContext  context,
   CWMemHandle      handle);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `handle` | The handle to unlock. |

Return See "Result Codes for Plug-ins" on page 129.

Remarks After using a handle that has been locked and when finished using any pointers to the data contained in the handle, plug-ins should call `CWUnlockMemHandle` to unlock the handle.

The IDE does not guarantee that a handle's address remains valid after it has been unlocked. For this reason, plug-ins should not use a

pointer to a memory handle after calling `CWUnlockMemHandle` on the handle.

The IDE counts calls to `CWLockMemHandle` and `CWUnlockMemHandle`. A handle remains locked as long as its lock count remains greater than zero. When initially allocated, handles are unlocked. `CWLockMemHandle` increases a handle's lock count, and `CWUnlockMemHandle` decreases its lock count.

See Also

"CWAllocMemHandle" on page 43

"CWFreeMemHandle" on page 47

"CWGetMemHandleSize" on page 60

"CWResizeMemHandle" on page 77

"CWLockMemHandle" on page 70

## CWUserBreak

Description

Checks to see if the user has cancelled the current operation.

Prototype

```
#include "DropinCompilerLinker.h"
CW_CALLBACK CWUserBreak(
   CWPluginContext  context);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |

Return

See "Result Codes for Plug-ins" on page 129.

Remarks

Call this routine regularly while acting on a request that requires more than a few seconds of processing time.

If `CWUserBreak` returns `cwErrUserCanceled`, the plug-in should stop processing, save its files, free its pointers and handles, and return to the IDE as quickly as possible.

See Also

"CWReportMessage" on page 75

# Plug-In Entry Points

This section describes entry points common to all plug-ins:

- Main Plug-in Entry Point
- CWPlugin_GetDropInFlags Entry Point
- CWPlugin_GetDropInName Entry Point
- CWPlugin_GetDisplayName Entry Point
- CWPlugin_GetPluginInfo

## Main Plug-in Entry Point

Description — Provides the main plug-in entry point for servicing requests from the IDE.

Prototype

```
CWPlugin_ENTRY (main) (CWPluginContext context)
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| `CWPluginContext` | Private, opaque IDE state. |

Return — See “Result Codes for Plug-ins” on page 129.

Remarks — The IDE uses to request services from the plug-in. All plug-ins must implement this method.

To determine what service is being requested by the IDE, plug-ins call `CWGetPluginRequest`, which returns a value indicating the service to perform.

Prior to returning from its main entry point, a plug-in calls `CWDonePluginRequest` with an error code of type `CWResult`. Use `cwNoErr` if no error occurred or `cwErrRequestFailed` if the plug-in could not handle request. `CWDonePluginRequest` then returns an error code to the plug-in, which the plug-in should return to the IDE as its `main` function result.

The IDE passes the main entry point a single parameter of type `CWPluginContext`. This value holds the IDE’s private state value for the plug-in. This state assists the IDE in providing services to the plug-in. The plug-in must return the context value to the IDE in all calls.

See Also

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

"CWPluginContext" on page 108

"reqInitialize" on page 127

"reqTerminate" on page 128

## CWPlugin_GetDropInFlags Entry Point

Description

Provides an informational entry point to the IDE that the IDE calls to learn about plug-in features.

Prototype

```
#include <CWPlugins.h>
CWPlugin_ENTRY (CWPlugin_GetDropInFlags)
   (const DropInFlags**, long* flagsSize);
```

Parameters

The parameters for this entry point include:

| | |
|---|---|
| `flags` | Returns a `DropInFlags` structure to the IDE. The structure specifies information about the plug-in's features. |
| `flagsSize` | Specifies the size (in bytes) of the structure returned in `flags`. |

Return

Unless the plug-in could not process the request, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks

This entry point returns information about a plug-in to the IDE, by filling in a `DropInFlags` structure. Plug-ins usually implement this method by returning a pointer to a constant `DropInFlags` structure.

The `flagsSize` parameter should be set to the size of the structure being returned (normally obtained by applying the C `sizeof` operator to the `DropInFlags` type).

**NOTE** COM-only plug-ins do not need to specify flags. All other plug-ins must do so.

Mac OS — On Mac OS, this routine is optional. In its place, a plug-in may provide a `'Flag'` resource, specifying the same information.

See Also — "Specifying Plug-In Capabilities" in the *IDE SDK Developer's Guide*

"Compiler and Linker Drop-In Flags" in the *IDE SDK Developer's Guide*

"DropInFlags" on page 117

## CWPlugin_GetDropInName Entry Point

Description — Provides an informational entry point that the IDE uses to determine the plug-in's dropin name.

Prototype

```
#include <CWPlugins.h>
CWPlugin_ENTRY (CWPlugin_GetDropInName)
   (const char** dropinName)
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| dropinName | Returns a C string containing the drop-in name of the plug-in to the IDE. |

Return — Usually, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks — This entry point is used by the IDE to determine the plug-in's dropin name, which is used to keep track of plug-ins in the project file. All plug-ins must implement this entry point.

**NOTE** The CWPlugin_GetDropInName entry is deprecated in favor of the new CWPlugin_GetPluginInfo entry. GetDropInName will be called if the dropin name is not set by CWPlugin_GetPluginInfo.

See Also — "Result Codes for Plug-ins" on page 129

## CWPlugin_GetDisplayName Entry Point

Description — Provides an informational entry point that the IDE uses to determine the plug-in's display name.

Prototype

```
#include <CWPlugins.h>
CWPlugin_ENTRY (CWPlugin_GetDisplayName)
```

```
(const char** displayName);
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| displayName | Returns a C string containing the display name of the plug-in to the IDE. |

Return — Usually, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks — This entry point is used by the IDE to determine the plug-in's display name, which is used when displaying the name of the plug-in to the user (when selecting a compiler or linker in **Target Settings**, for example).

**NOTE** — The CWPlugin_GetDisplayName entry is deprecated in favor of the new CWPlugin_GetPluginInfo entry. GetDropInName will be called if the dropin name is not set by CWPlugin_GetPluginInfo.

Mac OS — On Mac OS, this routine is optional. In its place, a plug-in may provide a `'STR '` resource, specifying the same information.

See Also — "Result Codes for Plug-ins" on page 129

## CWPlugin_GetPluginInfo

Description — Provides an informational entry point that the IDE uses to determine the plug-in's display name.

Prototype —

```
#include <CWPlugins.h>
CWPLUGIN_ENTRY (CWPlugin_GetPluginInfo)(const
CWPluginInfo** pluginInfo);
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| CWPluginInfo | A CWPluginInfo object containing information about the plug-in. |

Return — Usually, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks — Use this function to get information about the plug-in, including the dropin name and the display name.

**NOTE** The compiler checks for information from the CWPlugin_GetPluginInfo function. Then it looks for information from the CWPlugin_GetDropInName Entry Point and CWPlugin_GetDisplayName Entry Point functions. Finally, it looks for a resource file. For this reason, using CWPlugin_GetPluginInfo is more efficient than the other two ways of providing this information.

The CWPlugin_GetPluginInfo function supercedes the CWPlugin_GetDropInName Entry Point and CWPlugin_GetDisplayName Entry Point functions.

Mac OS On Mac OS, this routine is optional. In its place, a plug-in may provide a `'STR '` resource, specifying the same information.

See Also "Result Codes for Plug-ins" on page 129

# Data Structures for Plug-ins

This section describes the data structures and data types available to all plug-ins.

The plug-in API's data structures are:

- `CWAccessPathInfo`
- `CWAccessPathListInfo`
- `CWAccessPathType`
- `CWAddr64`
- `CWDataType`
- `CWDependencyType`
- `CWFileInfo`
- `CWFileName`
- `CWFileSpec`
- `CWFileTime`
- `CWFrameworkInfo`
- `CWIDEInfo`
- `CWMemHandle`
- `CWMessageRef`

- CWNewProjectEntryInfo
- CWNewTextDocumentInfo
- CWOSResult
- CWOverlay1FileInfo
- CWOverlay1GroupInfo
- CWOverlay1Info
- CWPluginContext
- CWPluginInfo
- CWProjectFileInfo
- CWProjectSegmentInfo
- CWRelativePath
- CWRelativePathFormat
- CWRelativePathTypes
- CWResult
- DropInFlags

## CWAccessPathInfo

Description Returns information about a single access path.

Definition
```
#include <CWPlugins.h>
typedef struct CWAccessPathInfo
{
   CWFileSpec pathSpec;
   Boolean    recursive;
   long       subdirectoryCount;
} CWAccessPathInfo;
```

Fields The fields in CWAccessPathInfo include:

| | |
|---|---|
| pathSpec | Specifies a project path (directory). |

| | |
|---|---|
| recursive | Indicates whether the IDE examines subdirectories of `pathSpec` to find project files. If true, the IDE searches subdirectories. |
| subdirectoryCount | Returns the count of subdirectories in `pathSpec`. This field will be zero if `recursive` is false. |

Remarks `CWGetAccessPathInfo` returns this structure to describe a file access path in the current project. `pathSpec` indicates the location of the access path. If `recursive` is true, the plug-in can get the subdirectories by calling `CWGetAccessPathSubdirectory`. If `recursive` is true, `subdirectoryCount` contains the number of subdirectories, which have an index ranging from 0 to `subdirectoryCount` - 1.

See Also "CWGetAccessPathInfo" on page 49

"CWGetAccessPathSubdirectory" on page 51

## CWAccessPathListInfo

Description Returns properties and counts of the access paths in the current target.

Definition
```
#include <CWPlugins.h>
typedef struct CWAccessPathListInfo
{
   long     systemPathCount;
   long     userPathCount;
   Boolean  alwaysSearchUserPaths;
   Boolean  convertPaths;
} CWAccessPathListInfo;
```

Fields The fields in `CWAccessPathListInfo` are:

| | |
|---|---|
| `systemPathCount` | Returns the number of system paths specified in **Edit > Target Settings**, in the **Access Paths** panel. |
| `userPathCount` | Returns the number of user paths specified in **Edit > Target Settings**, in the **Access Paths** panel. |
| `alwaysSearchUserPaths` | Returns `true` if the IDE has been configured to always search for files in the user access paths (regardless of `#include` syntax). |
| `convertPaths` | On the Mac OS, indicates that the IDE attempts to interpret special characters appearing in file specifications (such as '\' and '/') as if they were DOS and Unix path separators. Not used on other host platforms. |

Remarks

`CWGetAccessPathListInfo` returns a `CWAccessPathListInfo` structure containing information about the access paths specified for the current target. `systemPathCount` and `userPathCount` indicate the total number of system and user access paths. Plug-ins typically call `CWGetAccessPathListInfo` to determine the number of user and system paths, prior to enumerating them with `CWGetAccessPathInfo`.

`alwaysSearchUserPaths` indicates whether the IDE searches user paths when looking for "system includes." When set to `true`, the following statements have the same effect:

```
#include <headerfile.h>
#include "headerfile.h"
```

When `alwaysSearchUserPaths` is true, plug-ins interfacing with command line tools should include all user search paths on the command line as system search paths.

Mac OS

`convertPaths` indicates whether a Mac OS hosted IDE will attempt to interpret file specifications, such as include file paths, as if they were DOS or Unix paths.

See Also "CWGetAccessPathListInfo" on page 50

"CWGetAccessPathInfo" on page 49

## CWAccessPathType

Description Specifies a kind of access path (user or system).

Definition
```
#include <CWPlugins.h>
typedef enum CWAccessPathType
{
   cwSystemPath,
   cwUserPath
} CWAccessPathType;
```

Fields The members of `CWAccessPathType` are:

| | |
|---|---|
| cwSystemPath | Specifies a system access path. |
| cwUserPath | Specifies a user access path. |

Remarks `CWAccessPathType` defines the values used to specify user or system paths when calling CWGetAccessPathInfo and CWGetAccessPathListInfo.

See Also "CWGetAccessPathInfo" on page 49

"CWGetAccessPathListInfo" on page 50

## CWAddr64

Description Stores a 64-bit address.

Definition
```
#include <CWPlugins.h>
typedef struct CWAddr64
{
   long   lo;
   long   hi;
} CWAddr64;
```

Fields The fields in `CWAddr64` are:

| | |
|---|---|
| `lo` | Holds the lower 32 bits of a 64-bit address. |
| `hi` | Holds the upper 32 bits of a 64-bit address. |

Remarks Use the `CWAddr64` data structure to hold a 64-bit memory address. The `CWOverlay1GroupInfo` data structure incorporates this data structure.

See Also "CWOverlay1GroupInfo" on page 107

## CWDataType

Description Uniquely identifies a category or type of data. Also used for specifying unique identifiers.

Definition
```
#include <CWPlugins.h>
typedef unsigned long CWDataType;
```

Remarks Used to identify the type of custom data associated by a plug-in with a project file or a target as a whole. Must be a four-character constant. This type is also used to hold unique, mnemonic 4-character identifiers or descriptors.

**NOTE** Metrowerks reserves lower-case type codes. Use a mixed-case or upper-case value.

See Also "CWStorePluginData" on page 81

"CWGetPluginData" on page 65

## CWDependencyType

Description Specifies how one source file relies on the contents of another.

Definition
```
#include <CWPlugins.h>
typedef enum CWDependencyType {
   cwNoDependency,
   cwNormalDependency,
   cwInterfaceDependency
} CWDependencyType;
```

Remarks `CWFileInfo` uses this data type to indicate the type of source dependency to establish between files.

`cwNoDependency` specifies that whatever method uses this data type should not establish a dependency. When using

`CWFindAndLoadFile`, you can use this value to load a file without establishing a dependency.

`cwNormalDependency` specifies that a dependent file depends upon the entire contents of the file. Whenever the depended-upon file is modified, the IDE marks the dependent file as dirty. A C/C++ compiler uses this type of dependency to specify dependencies on header files.

`cwInterfaceDependency` specifies that the dependent file depends on the external interface of the file. With this type of dependency, the IDE does not mark the dependent files as dirty when the depended-upon file has been modified. TheIDE marks the dependent files as dirty only when the depended-upon file is compiled and the compiler indicates that the interface has changed. The compiler indicates that an interface has changed by setting the `interfaceChanged` flag in the `CWObjectData` data structure. The compiler must set the `interfaceChanged` flag before calling `CWStoreObjectData`. The plug-in determines what is exported through the external interface and when it has changed.

For `cwInterfaceDependency`, the plug-in usually generates the data describing the external interface and saves it using `CWStorePluginData`. On subsequent compilations, the compiler recomputes the interface data, retrieves the interface data from the last time the data was compiled, and checks to see if the interface data has changed. The compiler uses `CWGetPluginData` to determine when the plug-in data last changed. If the data has change, the compiler stores the new interface data and sets the `interfaceChanged` flag when it calls `CWStoreObjectData`.

See Also

"CWFileInfo" on page 95

"CWFindAndLoadFile" on page 45

"CWStorePluginData" on page 81

"CWGetPluginData" on page 65

"CWStoreObjectData" on page 165

## CWFileInfo

Description — Holds information returned by `CWFindAndLoadFile`.

Definition

```
#include <CWPlugins.h>
typedef struct CWFileInfo {
   Boolean       fullsearch;
   char          dependencyType;
   long          isdependentoffile;
   Boolean       suppressload;
   Boolean       padding;
   const char*   filedata;
   long          filedatalength;
   short         filedatatype;
   short         fileID;
   CWFileSpec    filespec;
   Boolean       alreadyincluded;
   Boolean       recordbrowseinfo;
} CWFileInfo;
```

Fields — The fields in `CWFileInfo` are:

| | |
|---|---|
| `fullsearch` | `true` causes the IDE to search the user access paths and then the system paths for the file. `false` causes the IDE to search only the system paths. |
| `dependencyType` | Set this field to a value from `CWDependencyType` to specify the dependency between the file for which to search and the file specified in the `isdependentoffile` field. |
| `isdependentoffile` | Specifies the project file (by index) that depends on the file for which to search (specified by the `filename` parameter in a call to `CWFindAndLoadFile`). To specify the file that the plug-in is currently processing, set this value to `kCurrentCompiledFile`. |

| | |
|---|---|
| `suppressload` | `true` causes the IDE to find a file without loading it into memory. `false` causes the IDE to load the file into memory. The IDE only loads text files or precompiled header files. |
| `padding` | Reserved for use by the IDE. Do not modify the contents of this field. |
| `filedata` | Returns a pointer to the file data. The IDE returns `NULL` if it could not find the file or could not load the file into memory. If the file was found but not loaded into memory, the IDE stores a specification for the file in the `filespec` field. |
| `filedatalength` | Returns the size of the file data, in bytes, if the file was loaded into memory. Returns 0 if the file was not loaded into memory. |
| `filedatatype` | Returns the kind of data in the file, if found. Possible values for this field include `cwFileTypePrecompiledHeader`, `cwFileTypeText`, or `cwFileTypeUnknown` |
| `fileID` | Returns a unique number for the file, if the IDE found the file. This field is only valid when used by compiler plug-ins. |
| `filespec` | Returns the file specification of the file for which the IDE searched. The IDE stores a file specification in this field whether or not it loads the file's contents into memory. Only compiler plug-ins use this field. |

| | |
|---|---|
| `alreadyincluded` | On return, the IDE sets this value to `true` if the file has already been searched for in the current operation or `false` if not. Only compiler plug-ins use this field. |
| `recordbrowseinfo` | On return, the IDE sets this value to `true` to tell the plug-in to generate browser data for the file. Only compiler plug-ins use this field. |

Remarks Plug-ins use this structure to specify how the IDE should search for files when using `CWFindAndLoadFile`.

See Also "CWDependencyType" on page 93

"CWFindAndLoadFile" on page 45

"cwFileTypePrecompiledHeader" on page 122

"cwFileTypeText" on page 123

"cwFileTypeUnknown" on page 123

"kCurrentCompiledFile" on page 124

## CWFileName

Description Specifies the name of a file.

Definition
```
#include <CWPlugins.h>
#if CWPlugin_API == CWPlugin_API_MACOS
    typedef char            CWFileName[32];
#elif CWPlugin_API == CWPlugin_API_WIN32
    typedef char            CWFileName[65];
#endif
```

Remarks Use this type to specify the name of a file. For example, `CWProjectFileInfo` uses this type to specify a file name.

**NOTE** The definition of this type varies by platform.

See Also "CWProjectFileInfo" on page 109

## CWFileSpec

Description — Represents the data type used by the host operating system to specify a file.

Definition

```
#include <CWPlugins.h>
   #if CWPLUGIN_API == CWPLUGIN_API_MACOS

     #if CWPLUGIN_LONG_FILENAME_SUPPORT

       #define CWPLUGIN_FILENAME_LEN 256
       typedef struct CWFileSpec
       {
         FSRef        parentDirRef; /* parent
directory  */
        HFSUniStr255 filename;     /* unicode file
name */
       } CWFileSpec;

       typedef char
CWFileName[CWPLUGIN_FILENAME_LEN];

     #else

       #define CWPLUGIN_FILENAME_LEN 32
       typedef FSSpec CWFileSpec;
       typedef char
CWFileName[CWPLUGIN_FILENAME_LEN];

     #endif

     typedef unsigned long CWFileTime;
     typedef OSErr         CWOSResult;

   #elif CWPLUGIN_API == CWPLUGIN_API_WIN32

     typedef unsigned char   Boolean;
     typedef struct CWFileSpec { char
path[MAX_PATH]; } CWFileSpec;

     #if CWPLUGIN_LONG_FILENAME_SUPPORT

       #define CWPLUGIN_FILENAME_LEN 256
```

```
    typedef char
CWFileName[CWPLUGIN_FILENAME_LEN];

  #else

    #define CWPLUGIN_FILENAME_LEN 65
    typedef char
CWFileName[CWPLUGIN_FILENAME_LEN];

  #endif

  typedef FILETIME CWFileTime;
  typedef DWORD    CWOSResult;

#elif CWPLUGIN_API == CWPLUGIN_API_UNIX

  #define MAX_PATH              MAXPATHLEN
  #define CWPLUGIN_FILENAME_LEN 65
  #ifndef __MACTYPES__
    typedef unsigned char Boolean;
  #endif

  #ifndef FALSE
    #define FALSE 0
  #endif

  #ifndef TRUE
    #define TRUE 1
  #endif

  typedef struct CWFileSpec { char
path[MAX_PATH]; } CWFileSpec;
  typedef char
CWFileName[CWPLUGIN_FILENAME_LEN];
  typedef time_t            CWFileTime;
  typedef int               CWOSResult;

#endif
```

Remarks The plug-in API defines this data type to be equivalent to the data type used by the host operating system to specify a file. On Windows, this is a full path. On Mac OS, this is a `FileSpec`.

**NOTE** The definition of this type varies by platform.

See Also "CWFileInfo" on page 95

"CWGetProjectFile" on page 67

## CWFileTime

Description Specifies the modification date and time of a file.

Definition
```
#include <CWPlugins.h>
#if CWPlugin_API == CWPlugin_API_MACOS
    typedef unsigned long   CWFileTime;
#elif CWPlugin_API == CWPlugin_API_WIN32
    typedef FILETIME        CWFileTime;
#endif
```

Remarks The plug-in API defines this data type to be equivalent to the data type used by the host operating system to represent a date and time value.

**NOTE** The definition of this type varies by platform.

See Also "CWProjectFileInfo" on page 109

"CWSetModDate" on page 78

## CWFrameworkInfo

Description Holds information about a framework.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWFrameworkInfo {
   CWFileSpec  fileSpec;
   char        version[256];
} CWFrameworkInfo;
```

Fields The fields in CWIDEInfo include:

| | |
|---|---|
| `fileSpec` | Location of ".framework" directory |
| `version[256]` | Which version directory to use |

Remarks If the version string is empty, the IDE uses the current symbolic link.

See Also "CWGetFrameworkInfo" on page 58

## CWIDEInfo

Description Holds information about the IDE.

Definition
```
#include <CWPlugins.h>
typedef struct CWIDEInfo
{
   unsigned short    majorVersion;
   unsigned short    minorVersion;
   unsigned short    bugFixVersion;
   unsigned short    buildVersion;
   unsigned short    dropinAPIVersion;
} CWIDEInfo;
```

Fields The fields in CWIDEInfo are:

| | |
|---|---|
| `majorVersion` | Major IDE version number. |
| `minorVersion` | Minor IDE version number. |
| `bugFixVersion` | Revision number of the IDE. |
| `buildVersion` | Build number of the IDE. |
| `dropinAPIVersion` | Latest plug-in API version available with this IDE. |

Remarks The IDE returns this structure in response to a CWGetIDEInfo call. It provides detailed IDE version information and the plug-in API version.

**NOTE** This structure contains the latest API version rather than the version the IDE uses to run the current plug-in. Use CWGetAPIVersion to get the version of the plug-in API the IDE uses for the current plug in.

See Also "CWGetIDEInfo" on page 59

"CWGetAPIVersion" on page 52

## CWMemHandle

Description — Maintains a resizable memory block by indirect reference.

Definition

```
#include <CWPlugins.h>
typedef struct
   CWMemHandlePrivateStruct* CWMemHandle;
```

Remarks — Variables of type `CWMemHandle` store blocks of memory allocated, freed, and referenced through methods exposed by the plug-in API.

However, plug-ins cannot access the contents of `CWMemHandles` directly. Instead, plug-ins must call `CWLockMemHandle` to obtain a pointer to a handle's contents. When finished accessing a handle, a plug-in should call `CWUnlockMemHandle` as soon as possible, to let the IDE manage memory as efficiently as possible.

Handles can be allocated with `CWAllocMemHandle`, freed with `CWFreeMemHandle`, and resized with `CWResizeMemHandle`. The current size of a handle can be determined with `CWGetMemHandleSize`.

See Also — "Handles" in the *IDE SDK Developer's Guide*

"CWAllocMemHandle" on page 43

"CWFreeMemHandle" on page 47

"CWResizeMemHandle" on page 77

"CWGetMemHandleSize" on page 60

"CWLockMemHandle" on page 70

"CWUnlockMemHandle" on page 82

## CWMessageRef

Description — Specifies the location of the source code that generated a compiler error or warning.

Definition

```
#include <CWPlugins.h>
typedef struct CWMessageRef
{
   CWFileSpec    sourcefile;
```

```
    long          linenumber;
    short         tokenoffset;
    short         tokenlength;
    long          selectionoffset;
    long          selectionlength;
} CWMessageRef;
```

Fields

The fields in `CWMessageRef` are:

| | |
|---|---|
| `sourcefile` | Specifies the source file that caused the error or warning. |
| `linenumber` | Specifies the line of text where the error or warning occurred. |
| `tokenoffset` | Specifies the beginning of the item within the line of source code that caused the error or warning. |
| `tokenlength` | Specifies the length of the offending token. The IDE underlines the token when displaying it. |
| `selectionoffset` | Specifies the beginning of the text to highlight when the user selects an error or warning item in the message window. The offset must be relative to the start of the source file. |
| `selectionlength` | Specifies the length of the text to select when the user selects an error or warning item in the message window. |

Remarks

A `CWMessageRef` structure describes the source file location at which an error or warning occurred. It provides sufficient information for the IDE to locate and display the source code associated with a message. A plug-in passes this structure to the IDE in a call to `CWReportMessage`.

See Also

"CWReportMessage" on page 75

## CWNewProjectEntryInfo

Description

Specifies placement information and file flags for a file added to a project.

Definition

```
typedef struct CWNewProjectEntryInfo
{
  long         position;
  long         segment;
  long         overlayGroup;
  long         overlay;
  const char * groupPath;
  Boolean      mergeintooutput;
  Boolean      weakimport;
  Boolean      initbefore;
} CWNewProjectEntryInfo;
```

Fields: The fields in `CWNewProjectEntryInfo` are:

| | |
|---|---|
| `position` | Specifies the link order position. |
| `segment` | Specifies the segment number. |
| `overlayGroup` | Specifies the overlay group number. |
| `overlay` | Specifies the overlay number. |
| `groupPath` | Specifies the project group to which the file should be added. This C-style string specifyies the full path to a group, using a colon (:) to delimit the groups. If the IDE cannot find the specified group, the IDE creates a new group to match the specification. |
| `mergeintooutput` | Specifies the value for the the “Merge Into Output” setting. Used only in Mac OS projects. |
| `weakimport` | Specifies the value for the the “Import Weak” setting. Used only in Mac OS projects. |
| `initbefore` | Specifies the value for the the “Initialize Before” setting. Used only in Mac OS projects. |

Remarks This structure specifies where a file added to a project using `CWAddProjectEntry` appears in the various project file orderings (link, overlay, and segment). In addition, it provides values for several per-file target settings.

The API provides some optional indexes provided, which the IDE ignores if not relevant. For example, Windows projects do not have segments or overlays. Thus, the IDE ignores the `segment`, `overlayGroup`, and `overlay` fields when running on Windows.

Plug-ins can specify `kDefaultLinkPosition` for any of the `position`, `segment`, `overlayGroup`, and `overlay` fields. This setting tells the IDE to add the file in the default position in the corresponding project ordering.

If the specified file already exists in a project, the IDE ignores the the `mergeintooutput`, `weakimport`, and `initbefore` flags. Also, the IDE ignores these flags if they are not relevant to the file being added to the project. Only projects containing Mac OS targets (which can exist on any platform) use these flags.

See Also "CWAddProjectEntry" on page 40

## CWNewTextDocumentInfo

Description Specifies information about a newly created editor window

Definition
```
#include <CWPlugins.h>
typedef struct CWNewTextDocumentInfo
{
   const char*   documentname;
   CWMemHandle   text;
   Boolean       markDirty;
} CWNewTextDocumentInfo;
```

Fields The fields in `CWNewTextDocumentInfo` are:

| | |
|---|---|
| `documentname` | Specifies the title of the document, as a C string. |
| `text` | Provides the text handle for the document. |
| `markDirty` | Specifies wether the IDE should regard the document as saved. Set this value to `true` to indicate that the document should be saved prior to closing. Set this value to `false` to discard the document's content upon closing. |

Remarks The plug-in uses this structure to specify the title and contents of an editor window created with `CWCreateNewTextDocument`. The

`text` handle becomes the IDE's property. Plug-ins should not dispose of the handle.

See Also "CWCreateNewTextDocument" on page 44

## CWOSResult

Description Represents the data type used by the host operating system to specify an error code.

Definition
```
#include <CWPlugins.h>
```

Remarks The plug-in API defines this data type to be equivalent to the data type used by the host operating system to specify an error condition.

**NOTE** The definition of this type varies by platform.

See Also "CWGetCallbackOSError" on page 53

"CWSetPluginOSError" on page 79

## CWOverlay1FileInfo

Description Describes a file in an overlay.

Definition
```
#include <CWPlugins.h>
typedef struct CWOverlay1FileInfo {
   long          whichfile;
} CWOverlay1FileInfo;
```

Fields The fields in `CWOverlay1FileInfo` are:

| | |
|---|---|
| `whichfile` | On return, this value contains the index of the overlay file in the file list view of the current target. |

Remarks A plug-in can use `CWGetOverlay1FileInfo` to iterate through files. Use `whichfile` in method calls that require a file number, such as `CWLoadObjectData` or `CWGetFileInfo`.

See Also "CWGetOverlay1FileInfo" on page 62

"CWLoadObjectData" on page 161

"CWGetFileInfo" on page 55

## CWOverlay1GroupInfo

Description Describes an overlay group.

Definition
```
#include <CWPlugins.h>
typedef struct CWOverlay1GroupInfo {
   char          name[256];
   CWAddr64      address;
   long          numoverlays;
} CWOverlay1GroupInfo;
```

Fields The fields in `CWOverlay1GroupInfo` are:

| | |
|---|---|
| `name` | Returns the name of the overlay, as a C string. |
| `address` | Returns the 64-bit absolute load address of the overlay. |
| `numoverlays` | Returns the number of overlays in this group. |

Remarks Use `CWGetOverlay1GroupInfo` to iterate through overlay groups.

See Also "CWGetOverlay1GroupInfo" on page 63

## CWOverlay1Info

Description Returns information about one overlay.

Definition
```
#include <CWPlugins.h>
typedef struct CWOverlay1Info {
   char          name[256];
   long          numfiles;
} CWOverlay1Info;
```

Fields The fields in `CWOverlay1Info` are:

| | |
|---|---|
| `name` | Returns the name of the overlay, as a C string. |
| `numfiles` | Returns the number of files compiled into this overlay. |

Remarks Use `CWGetOverlay1Info` to iterate through overlay groups.

See Also "CWGetOverlay1Info" on page 64

## CWPluginContext

Description Opaque reference to IDE state.

Definition
```
#include <CWPlugins.h>
typedef struct
   CWPluginPrivateContext* CWPluginContext;
```

Remarks This data type maintains information for the IDE during calls to a plug-in. This information belongs to the IDE. Plug-ins should never try to modify this information.

The Main Plug-in Entry Point for a plug-in receives a parameter of this type. The plug-in must preserve this value and pass it back to the IDE in the `context` parameter of any services the plug-in uses.

The informational plug-in entry points do not receive such a parameter, because they simply report static information back to the IDE.

For more information, see "Main Entry Point `context` Parameter" in the *IDE SDK Developer's Guide*.

## CWPluginInfo

Description Contains information about a plug-in.

Definition
```
#include <CWPlugins.h>
typedef struct CWPluginInfo
{
   short            version;
   const char*      companyName;
   const char*      pluginName;
   const char*      pluginDisplayName;
   const char*      familyName;
   unsigned short   majorIDEVersion; // Required
   unsigned short   minorIDEVersion;
} CWPluginInfo;
```

Fields

The fields in `CWPluginInfo` are:

| | |
|---|---|
| `version` | Optional. |
| `companyName` | Optional. For example, Metrowerks. |
| `pluginName` | Optional. The name of your plug-in module. If you do not provide this name, the compiler uses Dropin->GetName(). Otherwise, it looks for a resource file. |
| `pluginDisplayName` | The name of your plug-in, as you would like users to see it in the IDE. |
| `familyName` | For example, “Java”. |
| `majorIDEVersion` | This field is required. |
| `minorIDEVersion` | Optional. |

Remarks

The CWPlugin_GetPluginInfo entry point passes CWPluginInfo to the IDE, to let the IDE identify the plug-in.

**NOTE** You can get better performance from the compiler by providing a value in the pluginName field.

## CWProjectFileInfo

Description

Contains information about a file in a project.

Definition

```
#include <CWPlugins.h>
typedef struct CWProjectFileInfo
{
   CWFileSpec    filespec;
   CWFileTime    moddate;
   short         segment;
   Boolean       hasobjectcode;
   Boolean       hasresources;
   Boolean       isresourcefile;
   Boolean       weakimport;
   Boolean       initbefore;
   Boolean       gendebug;
   CWFileTime    objmoddate;
   CWFileName    dropinname;
```

```
   short          fileID;
   Boolean        recordbrowseinfo;
   Boolean        reserved;
#if CWPlugin_HOST == CWPlugin_HOST_MACOS
   OSType         filetype;
   OSType         filecreator;
#endif
   Boolean        hasunitdata;
   Boolean        mergeintooutput;
   unsigned long unitdatadependencytag;
} CWProjectFileInfo;
```

Fields

The fields in `CWProjectFileInfo` include:

| | |
|---|---|
| `filespec` | Returns the file specification for the file. |
| `moddate` | Returns the date and time that the file was last modified. |
| `segment` | Returns the number of the segment that into which the file is linked. |
| `hasobjectcode` | Indicates whether or not the file generates object code (not whether any actually exists). |
| `hasresources` | Indicates whether or not the file generates resource data (not whether any actually exists). |
| `isresourcefile` | Indicates whether or not the file is a binary resource file to link into the final executable. |
| `weakimport` | Indicates whether or not the file's **Import Weak** flag is set. |
| `initbefore` | Indicates whether or not the file's **Init Before** flag is set. |
| `gendebug` | Indicates whether or not debugging information should be generated for the file. |

| | |
|---|---|
| `objmoddate` | Indicates the date and time at which the file's object code was last modified. |
| `dropinname` | Returns the name of the plug-in that the IDE calls on to process the file. |
| `fileID` | Returns a unique number, used in browser records to identify source files. |
| `recordbrowseinfo` | Indicates whether or not browser information should be generated for the file. |
| `reserved` | This field is reserved by the IDE. |
| `filetype` | Returns the Mac OS file type of the file. This field is defined only for Mac OS-hosted plug-ins. |
| `filecreator` | Returns the Mac OS creator signature of the file. This field is defined only for Mac OS-hosted plug-ins. |
| `hasunitdata` | Indicates whether the file has associated unit data (useful only for Pascal compilers). |
| `mergeintooutput` | Returns true if the "Merge Into Output" checkbox is checked in the project inspector. |
| `unitdatadependencytag` | Returns a dependency tag (checksum) of unit data (useful only for Pascal compilers). |

Remarks

`CWGetFileInfo` uses this data structure to describe a file in the active project.

`filespec` returns the file specification for the specified file. The IDE returns the most recent known (cached) file location if the plug-in passes 0 for the `checkFileLocation` parameter when calling `CWGetFileInfo`. Passing 1 tells the IDE to verify the file's current location on disk.

The `hasobjectcode`, `hasresources`, and `isresourcefile` fields have very precise and not entirely intuitive meanings:

- `hasobjectcode` means that the specified file is a source file and that compiling the source produces object data.
- `hasresources` means that the specified file is a source file and that compiling it produces resource data.
- `isresourcefile` means that the file itself is resource data, which should simply be copied into the target binary (this is typically only the case on the Mac OS).

**NOTE** Neither `hasobjectcode` nor `hasresources` imply that such data actually exists for the file. Plug-ins determine whether this data exists by loading the object data with `CWLoadObjectData` and examining the data. The plug-in should call `CWFreeObjectData` when done examining the data.

`dropinname` is the internal "plug-in name" of the plug-in used to process the file, not the plug-in's display name.

Plug-ins use `fileID` when generating browse information. This file ID uniquely identifies a target file. Plug-ins should emit this value in browser record fields that specify the source file for a symbol. See "Browser Reference" on page 229 for more information.

`gendebug` reflects the debug setting in the main project window. Compilers and linkers should only generate debug code for files which have this flag set.

Mac OS The `segment` field applies only to Mac 68K targets, and its value is determined by the assignment of files to segments in the **Segments** tab of the project.

The `weakimport`, `initbefore`, and `mergeintooutput` flags apply only to library files included in Mac OS targets. The values of the flags match the values established in the project inspector window.

The `weakimport` flag indicates whether the corresponding checkbox is set in the project inspector window for this file. When set, the flag indicates that the target application wishes to run even

if it cannot bind to all imported library symbols (variables and routines) at launch time.

`mergeintooutput` indicates that the library should be copied into the final executable. This ensures that the library will be available at runtime (much like statically linking a dynamic library).

See Also "CWGetFileInfo" on page 55

## CWProjectSegmentInfo

Description Contains information about a segment in the active project.

Definition
```
#include <CWPlugins.h>
typedef struct CWProjectSegmentInfo {
   char  name[32];
   short attributes;
} CWProjectSegmentInfo;
```

Fields The fields in `CWProjectFileInfo` include:

| | |
|---|---|
| `name` | The name of the segment |
| `attributes` | The Resource Manager attributes for the segment. |

Remarks `CWGetSegmentInfo` uses this data structure to describe a segment in the current project target, for Mac OS 68K targets only. Segments are blocks of compiled code, stored in '`CODE`' resources in the Mac OS 68K runtime environment. The **Segment** tab of a 68K target specifies which files should be placed in each '`CODE`' resource.

A `CWProjectSegmentInfo` structure specifies the name and resource manager attributes for a segment (any combination of preload, locked, purgeable, protected, system heap).

See Also "CWGetSegmentInfo" on page 68

## CWRelativePath

Description Describes a directory specified relative to another.

Definition
```
#include <CWPlugins.h>
typedef struct CWRelativePath
{
   short          version;
```

```
   unsigned char  pathType;
   unsigned char  pathFormat;
   char           userDefinedTree[256];
   char           pathString[512];
} CWRelativePath;
```

Fields

The fields in `CWRelativePath` include:

| | |
|---|---|
| `version` | Specifies the version of the `CWRelativePath` record. |
| `pathType` | Specifies the reference directory to which the path is relative. This should be one of the `CWRelativePathTypes` enumeration values: `type_Absolute`, `type_Project`, `type_Compiler`, or `type_System`, `type_UserDefined`. |
| `pathFormat` | Specifies the OS path syntax used in `pathString`. This should be one of the `CWRelativePathFormat` enumeration values: `format_Generic`, `format_Mac` or `format_Win`, `format_Unix`. |
| `userDefinedTree` | Specifies the path to the reference directory when `pathType` is `type_UserDefined`. |
| `pathString` | Specifies a directory location, relative to the location specified by `pathType` and, optionally, `userDefinedTree`. |

Remarks

A `CWRelativePath` structure specifies a relative directory location. A relative path specifies a directory location using a sequence of subdirectories starting from another abolute reference location.

The reference location usually, specified by `pathType`, generally refers to a location that typically exists on all IDE hosts. For example, the directory containing the compiler and its support files exists on all IDE hosts.

The partial path string stored in `pathString` may be formatted for any supported platform.

Relative paths are especially useful when the reference path may have a different location on different host systems. Relative paths help to make directory specifications portable. They also eliminate the need to determine the locations of standard directories.

`CWPanelChooseRelativePath` returns `CWRelativePath` structures that may be resolved to full absolute paths with `CWResolveRelativePath`.

See Also

"CWResolveRelativePath" on page 77

"CWPanelChooseRelativePath" on page 272

"CWRelativePathFormat" on page 115

"CWRelativePathTypes" on page 116

## CWRelativePathFormat

Description

Specifies the operating system format of a relative path.

Definition

```
#include <CWPlugins.h>
typedef enum CWRelativePathFormat
{
   format_Generic = 0,
   format_Mac,
   format_Win,
   format_Unix
} CWRelativePathFormat;
```

Values

These constants have the following meanings:

| | |
|---|---|
| `format_Generic` | Indicates a simple file name, without any additional parts, such as drive or path specifiers. |
| `format_Mac` | Indicates Mac OS path syntax. Directory names are separated by colon (':') characters. |
| `format_Win` | Indicates Windows path syntax. Directory names are separated by backslash characters ('\'). |
| `format_Unix` | Indicates Unix path syntax. Directory names are separated by slash characters ('/'). |

Remarks This type specifies the format of a relative path in a `CWRelativePath` structure returned by CWPanelChooseRelativePath.

See Also "CWResolveRelativePath" on page 77

"CWRelativePath" on page 113

"CWRelativePathTypes" on page 116

"CWPanelChooseRelativePath" on page 272

## CWRelativePathTypes

Description Describes an absolute location referred to by a relative path.

Definition
```
#include <CWPlugins.h>
typedef enum CWRelativePathTypes
{
   type_Absolute= 0,
   type_Project,
   type_Compiler,
   type_System,
   type_UserDefined
} CWRelativePathTypes;
```

Values These constants have the following meanings:

| | |
|---|---|
| `type_Absolute` | Indicates that the relative path is not actually relative but instead specifies a fully qualified absolute path. |
| `type_Project` | Indicates that the path is specified relative to the directory containing the project. |
| `type_Compiler` | Indicates that the path is specified relative to the directory containing the compiler. |

| | |
|---|---|
| type_System | Indicates that the path is specified relative to the directory containing the system.<br><br>On Windows, this refers to the Windows\System directory on the boot drive. On Mac OS, this is the System folder on the boot volume. |
| type_UserDefined | Indicates that the relative path refers to a directory specified by the plug-in. |

Remarks This enumeration specifies the starting point for a relative path. Relative paths constructed by `CWPanelChooseRelativePath` return a value of this type in the `pathType` field.

See Also "CWResolveRelativePath" on page 77

"CWRelativePath" on page 113

"CWRelativePathFormat" on page 115

"CWPanelChooseRelativePath" on page 272

## CWResult

Description Specifies a result code returned by a call to the IDE.

Definition
```
#include <CWPlugins.h>
typedef long CWResult;
```

Remarks All routines provided by the plug-in API return a result of type `CWResult`. The IDE directly returns the most common errors. For OS-specific errors, the `CWResult` is `cwErrOSError`, and the OS-specific error can be obtained by calling `CWGetCallbackOSError`.

See Also "cwErrOSError" on page 131

"CWGetCallbackOSError" on page 53

## DropInFlags

Description Describes a plug-in and its capabilities to the IDE.

Definition

```
#include <CWPlugins.h>
typedef struct DropInFlags
{
   short           rsrcversion;
   CWDataType      dropintype;
   unsigned short  earliestCompatibleAPIVersion;
   unsigned long   dropinflags;
   CWDataType      edit_language;
   unsigned short  newestAPIVersion;
} DropInFlags, **DropInFlagsHandle;
```

Fields The fields in `DropInFlags` are:

| | |
|---|---|
| `rsrcversion` | Indicates the version number of the `DropInFlags` structure. Usually, new plug ins use the current version of the structure. Use `kCurrentDropInFlagsVersion` to indicate the latest version. |
| `dropintype` | Specifies the plug-in type. Should be one of `CWDROPINLINKERTYPE`, `CWDROPINCOMPILERTYPE`, `CWDROPINPREFSTYPE`, `CWDROPINVCSTYPE`, or `CWDROPINCOMTYPE`. |
| `earliestCompatibleAPIVersion` | Specifies the earliest API version with which the plug-in can operate properly. |
| `dropinflags` | Contains bit flags indicating plug-in capabilities. Flag meanings vary with each plug-in type. |
| `edit_language` | The source language of files accepted by the plug-in (where relevant). |
| `newestAPIVersion` | Specifies the most recent API version with which the plug-in can operate properly. |

Remarks The `DropInFlags` structure is returned by compiler, linker, and version control plug-ins to the IDE via their `CWPlugin_GetDropInFlags` entry point. This structure provides the IDE with information about the plug-in and its capabilities.

The `dropintype` field consists of bit flags having different meanings for each plug-in type. See "Compiler Capability Flags," "Linker Capability Flags," and "VCS Plug-in Capability Flags" in the *IDE SDK Developer's Guide* and for more information. Preference panels use a similar but different structure to report their capabilities. See "PanelFlags" on page 335 for more information.

The `newestAPIVersion` field should usually be set to `DROPINCOMPILERLINKERAPIVERSION` or `DROPINPANELAPIVERSION`, depending upon the type of the plug-in. Each update of the API headers sets this value to the latest API version.

For most plug-ins, `earliestCompatibleAPIVersion` should be set to the latest version of the API that was in effect when the plug-in was first created. Usually, this should be done using a specific version, rather than one of `DROPINCOMPILERLINKERAPIVERSION` or `DROPINPANELAPIVERSION` (since their values change with API releases, but the earliest API version supported by a plug-in usually does not).

See Also "Specifying Plugin Capabilities" in the *IDE SDK Developer's Guide*

"Compiler Capability Flags" in the *IDE SDK Developer's Guide*

"Linker Capability Flags" in the *IDE SDK Developer's Guide*

"CWPlugin_GetDropInFlags Entry Point" on page 85

# Constants for Plug-ins

This section describes the constants and defined values (created with `#define` statements) used by the CodeWarrior Plug-in API.

The following list shows the constants and defined values available in the Plug-in API:

- `CWDROPINCOMPILERTYPE`
- `CWDROPINLINKERTYPE`
- `CWDROPINPREFSTYPE`
- `CWDROPINPREFSTYPE_1`

- CWDROPINVCSTYPE
- cwFileTypePrecompiledHeader
- cwFileTypeText
- cwFileTypeUnknown
- kCurrentCompiledFile
- kDefaultLinkPosition
- kTargetGlobalPluginData
- messagetypeInfo
- messagetypeWarning
- messagetypeError
- reqAbout
- reqIdle
- reqInitialize
- reqPrefsChange
- reqTerminate

## CWDROPINCOMPILERTYPE

Description — Defines the file type of compiler plug-ins.

Definition

```
#include "DropinCompilerLinker.h"
enum
{
   /* ... */
   CWDROPINCOMPILERTYPE  = 'Comp',
   /* ... */
;
```

Remarks — `Use CWDROPINCOMPILERTYPE` in the `dropintype` field of a `DropInFlags` structure to specify that a plug-in is a compiler.

Mac OS — A plug-in should also use this value for the file type of a compiler plug-in.

## CWDROPINLINKERTYPE

Description — Defines the file type of linker plug-ins.

Definition

```
#include "DropinCompilerLinker.h"
enum
{
   /* ... */
   CWDROPINLINKERTYPE    = 'Link',
   /* ... */
};
```

Remarks `Use CWDROPINLINKERTYPE` in the `dropintype` field of a `DropInFlags` structure to specify that a plug-in is a linker.

Mac OS A plug-in should also use this value for the file type of a linker plug-in.

## CWDROPINPREFSTYPE

Description Defines the file type of settings panel plug-ins.

Definition

```
#include "DropinCompilerLinker.h"
enum
{
   /* ... */
   CWDROPINPREFSTYPE     = 'PanL',
   /* ... */
};
```

Remarks `Use CWDROPINPREFSTYPE` in the `dropintype` field of a `DropInFlags` structure to specify that a plug-in is a preference panel.

Mac OS A plug-in should also use this value for the file type of a preference panel plug-in.

## CWDROPINPREFSTYPE_1

Description Defines the dropin type of settings panel plug-ins created for versions of the IDE before version 2.0.

Definition

```
#include "DropinCompilerLinker.h"
enum
{
   /* ... */
   CWDROPINPREFSTYPE_1   = 'Panl',
   /* ... */
```

```
};
```

Remarks — `CWDROPINPREFSTYPE_1` was used in the `dropintype` field of a `DropInFlags` structure for 1.x versions of the IDE.

Mac OS — This value was also used for the file type of a version 1 preference panel plug-in.

**NOTE** — New plug-ins should not use this type.

## CWDROPINVCSTYPE

Description — Defines the file type of version control system (VCS) plug-ins.

Definition

```
#include "DropinCompilerLinker.h"
enum
{
   /* ... */
   CWDROPINVCSTYPE        = 'VCS '
   /* ... */
};
```

Remarks — `Use CWDROPINVCSTYPE` in the `dropintype` field of a `DropInFlags` structure to specify that a plug-in is a version control system.

Mac OS — A plug-in should also use this value for the file type of a VCS plug-in.

## cwFileTypePrecompiledHeader

Description — Specifies that the IDE has found a cached precompiled header file.

Definition

```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   cwFileTypePrecompiledHeader
   /* ... */
};
```

Remarks — The IDE uses `cwFileTypePrecompiledHeader` in the `filedatatype` field of a `CWFileInfo` data structure to specify that it has found a precompiled header file that has been cached.

See Also "CWFileInfo" on page 95

## cwFileTypeText

Description Specifies that the IDE has found a text file.

Definition
```
#include "DropinCompilerLinker.h"
enum {
    /* ... */
    cwFileTypeText,
    /* ... */
};
```

Remarks The IDE uses `cwFileTypeText` in the `filedatatype` field of a `CWFileInfo` data structure to specify that it has found a precompiled header file that has been cached.

See Also "CWFileInfo" on page 95

## cwFileTypeUnknown

Description Specifies that the IDE has found a binary file.

Definition
```
#include "DropinCompilerLinker.h"
enum {
    /* ... */
    cwFileTypeUnknown,
    /* ... */
};
```

Remarks The IDE uses `cwFileTypeUnknown` in the `filedatatype` field of a `CWFileInfo` data structure to specify that it has found a file that contains unknown binary data.

See Also "CWFileInfo" on page 95

## cwSystemPath

Description Specifies a system path as configured in the **Access Paths** panel.

Definition
```
#include <CWPlugins.h>
```

Remarks Specifies a system path in calls to `CWGetAccessPathInfo` and `CWGetAccessPathSubdirectory`. The IDE searches system after searching user paths.

See Also "CWOverlay1GroupInfo" on page 107

## cwUserPath

Description Specifies a user path as configured in the **Access Paths** panel.

Definition
```
#include <CWPlugins.h>
```

FieldRemarks Specifies a user path in calls to `CWGetAccessPathInfo` and `CWGetAccessPathSubdirectory`. The IDE searches user paths before searching system paths.

See Also "CWOverlay1GroupInfo" on page 107

## kCurrentCompiledFile

Description Specifies that a file is dependent on the file that is currently being compiled by the IDE.

Definition
```
#include "DropinCompilerLinker.h"
#define kCurrentCompiledFile -1L
```

Remarks The IDE uses `kCurrentCompiledFile` in the `isdependentoffile` field of a `CWFileInfo` data structure to specify that a file depends on the file that is currently being compiled.

See Also "CWFileInfo" on page 95

## kDefaultLinkPosition

Description Specifies the default position in an ordering of project files.

Definition
```
#include "DropinCompilerLinker.h"
#define kDefaultLinkPosition -1L
```

Remarks Plug-ins use kDefaultLinkPosition in a `CWNewProjectEntryInfo` structure for any of the `position`, `segment`, `overlayGroup`, and `overlay` fields, to specify that the IDE should insert the new file in the default position with the respective file ordering.

See Also "CWNewProjectEntryInfo" on page 103

## kTargetGlobalPluginData

Description — Specifies data that applies globally to a project's target rather than a single file.

Definition
```
#include "CWPlugins.h"
#define kTargetGlobalPluginData -1L
```

Remarks — A plug-in passes `kTargetGlobalPluginData` in the `whichfile` parameters for `CWStorePluginData` and `CWGetPluginData` to specify that the IDE should store data globally for the active target rather than a single file in the target.

See Also — "CWStorePluginData" on page 81

"CWGetPluginData" on page 65

## messagetypeInfo

Description — Specifies the nature of an item to appear in a message window.

Definition
```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   messagetypeInfo,
   /* ... */
};
```

Remarks — Use this constant in the `errorlevel` argument for `CWReportMessage` to specify that a message provides a piece of information that isn't an error or warning.

See Also — "CWReportMessage" on page 75

## messagetypeWarning

Description — Specifies the nature of an item to appear in a message window.

Definition
```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   messagetypeWarning,
   /* ... */
};
```

Remarks Use this constant in the `errorlevel` argument for `CWReportMessage` to specify that a message is a warning.

See Also "CWReportMessage" on page 75

## messagetypeError

Description Specifies the nature of an item to appear in a message window.

Definition
```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   messagetypeError,
   /* ... */
};
```

Remarks Use this constant in the `errorlevel` argument for `CWReportMessage` to specify that a message is an error.

See Also "CWReportMessage" on page 75

## reqAbout

Description Asks the plug-in to display its about box.

Definition
```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   reqAbout = -101
   /* ... */
};
```

Remarks This request is sent by the IDE to ask a plug-in to display its about box.

**NOTE** Currently, the IDE only sends this request for version control plug ins when the user selects **About** from the version control menu.

See Also "CWGetPluginRequest" on page 66

## reqIdle

Description — Gives the plug-in a chance to perform a low priority background task.

Definition

```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   reqIdle = -100
   /* ... */
};
```

Remarks — The IDE sends this request occasionally (roughly once every two minutes), allowing a plug-in to perform some low priority background task. Plug-ins should avoid making assumptions about the exact frequency of `reqIdle` requests.

**NOTE** Currently, the IDE only sends this request for version control plug ins.

**CAUTION** Plug-ins cannot make any other calls to the IDE when handling this request.

See Also — "CWGetPluginRequest" on page 66

## reqInitialize

Description — Asks the plug-in to set itself to a known initial state.

Definition

```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   reqInitialize = -2
   /* ... */
};
```

Remarks — After the IDE has loaded the plug-in into memory, the IDE uses this request to initialize the plug-in. While handling a `reqInitialize` request, a plug-in can call only `CWGetPluginRequest` and `CWDonePluginRequest`.

See Also — "CWGetPluginRequest" on page 66

"reqInitPanel" on page 361

## reqPrefsChange

Description — Informs the plug-in that its preferences have changed.

Definition

```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   reqInitialize = -102
   /* ... */
};
```

Remarks — This message is sent when the user changes the preferences for a plug-in. Typically, a plug-in may wish to respond by reloading its preference data.

**NOTE** Currently, the IDE sends this request only for version control plug ins.

See Also — "CWGetPluginRequest" on page 66

## reqTerminate

Description — Asks the plug-in to clean up before it is unloaded.

Definition

```
#include "DropinCompilerLinker.h"
enum {
   /* ... */
   reqTerminate  = -1
   /* ... */
};
```

Remarks — The IDE issues this request before unloading the plug-in from memory. While handling a `reqTerminate` request, a plug-in can call only `CWGetPluginRequest` and `CWDonePluginRequest`.

See Also — "CWGetPluginRequest" on page 66

"reqTermPanel" on page 366

# Result Codes for Plug-ins

This section lists error codes that the IDE recognizes. A plug-in should return one of the values described in this section when handling a request from the IDE. The IDE returns a value from this section when a plug-in calls it.

The IDE sends and expects to receive the following result codes:

- `cwErrCantSetAttribute`
- `cwErrFileNotFound`
- `cwErrInvalidCallback`
- `cwErrInvalidMPCallback`
- `cwErrInvalidParameter`
- `cwErrOSError`
- `cwErrOutOfMemory`
- `cwErrRequestFailed`
- `cwErrSilent`
- `cwErrStringBufferOverflow`
- `cwErrUnknownFile`
- `cwErrUserCanceled`
- `cwNoErr`

**NOTE** The literal values listed in this section are for reference only and do not appear in the headers. Always use constants rather than the literal values in plug-in code.

## cwErrCantSetAttribute

Description The plug-in requested inappropriate flags in `CWAddProjectEntry`.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrCantSetAttribute = 11,
```

```
    /* ... */
};
```

## cwErrFileNotFound

Description A file was not found on disk.

Definition
```
#include <CWPluginErrors.h>
enum
{
    /* ... */
    cwErrFileNotFound = 8,
    /* ... */
};
```

## cwErrInvalidCallback

Description The IDE cannot provide a routine for a plug-in.

Definition
```
#include <CWPluginErrors.h>
enum
{
    /* ... */
    cwErrInvalidCallback = 4,
    /* ... */
};
```

Remarks The IDE issues this error code when a plug-in tries to call an IDE routine that is not appropriate for the request the plug-in is acting on or the plug-in's type.

## cwErrInvalidMPCallback

Description The plug-in cannot act on a request while executing as a multiprocessing thread.

Definition
```
#include <CWPluginErrors.h>
enum
{
    /* ... */
    cwErrInvalidMPCallback = 5,
    /* ... */
};
```

## cwErrInvalidParameter

Description An IDE routine cannot complete because it received a parameter value it cannot use.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrInvalidParameter = 3,
   /* ... */
};
```

## cwErrOSError

Description The host operating system issued an error.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrOSError = 6,
   /* ... */
};
```

## cwErrOutOfMemory

Description The IDE could not find enough memory to complete a memory allocation.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrOutOfMemory = 7,
   /* ... */
};
```

## cwErrRequestFailed

Description The plug-in could not service a request.

Definition
```
#include <CWPluginErrors.h>
enum
```

```
{
   /* ... */
   cwErrRequestFailed = 2,
   /* ... */
};
```

## cwErrSilent

Description An error code that a plug-in may pass back to the IDE when a request failed but the plug-in does not want the IDE to report the error to the user. This value lets the plug-in suppress the IDE's error reporting, so that the plug-in can report the error itself.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrSilent = 10,
   /* ... */
};
```

## cwErrStringBufferOverflow

Description An output string buffer was too small.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrStringBufferOverflow = 12,
   /* ... */
};
```

## cwErrUnknownFile

Description An invalid file number was used.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrUnknownFile = 9,
   /* ... */
```

```
};
```

## cwErrUserCanceled

Description The user has issued a command to stop the current operation.

Definition
```
#include <CWPluginErrors.h>
enum
{
    /* ... */
    cwErrUserCanceled = 1,
    /* ... */
};
```

## cwNoErr

Description An operation was completed successfully.

Definition
```
#include <CWPluginErrors.h>
enum
{
    /* ... */
    cwNoErr = 0,
    /* ... */
};
```

# 4

# Compiler and Linker Plug-in Reference

This chapter describes the plug-in API services available to compilers, linkers, pre-linkers, and post-linkers.

## Overview

This chapter covers the following topics:

- Routines for Compiler and Linker Plug-ins
- User Routines for Compiler and Linker Plug-ins
- Data Structures for Compiler and Linker Plug-ins
- Constants for Compiler and Linker Plug-ins
- Result Codes for Compiler and Linker Plug-ins

## Routines for Compiler and Linker Plug-ins

This section lists the routines a compiler, linker, pre-linker, or post-linker may call.

### Alphabetical Routine Index

This section lists all compiler and linker routines alphabetically.

- `CWCachePrecompiledHeader`
- `CWDisplayLines`
- `CWFreeObjectData`
- `CWGetBrowseOptions`
- `CWGetBuildSequenceNumber`

- CWGetCommandLineArgs
- CWGetEnvironmentVariable
- CWGetEnvironmentVariableCount
- CWGetMainFileID
- CWGetMainFileNumber
- CWGetMainFileSpec
- CWGetMainFileText
- CWGetModifiedFiles
- CWGetPrecompiledHeaderSpec
- CWGetResourceFile
- CWGetStoredObjectFileSpec
- CWGetSuggestedObjectFileSpec
- CWGetTargetInfo
- CWGetTargetStorage
- CWGetWorkingDirectory
- CWIsAutoPrecompiling
- CWIsCachingPrecompiledHeaders
- CWIsGeneratingDebugInfo
- CWIsPrecompiling
- CWIsPreprocessing
- CWLoadObjectData
- CWPutResourceFile
- CWSetTargetInfo
- CWSetTargetStorage
- CWStoreObjectData

## Functional Routine Index

This section lists all routines grouped by function.

### Current File Information

- CWGetMainFileID
- CWGetMainFileNumber

- `CWGetMainFileSpec`
- `CWGetMainFileText`

**Request Handling**

- CWIsAutoPrecompiling
- CWIsCachingPrecompiledHeaders
- CWIsGeneratingDebugInfo
- CWIsPrecompiling
- CWIsPreprocessing
- CWGetBrowseOptions
- CWGetBuildSequenceNumber

**Managing Object Data**

- `CWFreeObjectData`
- `CWLoadObjectData`
- `CWStoreObjectData`
- `CWGetStoredObjectFileSpec`
- `CWGetSuggestedObjectFileSpec`

**Managing Precompiled Headers**

- `CWCachePrecompiledHeader`
- `CWGetPrecompiledHeaderSpec`

**Managing Target Information**

- `CWGetTargetInfo`
- `CWSetTargetInfo`
- `CWGetModifiedFiles`

**Managing Target Storage**

- `CWGetTargetStorage`
- `CWSetTargetStorage`

**Target Runtime Settings**

- `CWGetCommandLineArgs`

- `CWGetEnvironmentVariable`
- `CWGetEnvironmentVariableCount`
- `CWGetWorkingDirectory`

### User Interaction

- `CWDisplayLines`
- `CWGetResourceFile`
- `CWPutResourceFile`

## CWCachePrecompiledHeader

Description — Stores precompiled header data in a RAM cache for faster access.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWCachePrecompiledHeader(
   CWPluginContext   context,
   const CWFileSpec* filespec,
   CWMemHandle       pchhandle);
```

Parameters — The parameters for this Method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filespec` | Specifies the location of the precompiled header file corresponding to the header data specified in `pchhandle`. |
| `pchhandle` | Contains the precompiled header data. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — `pchhandle` contains the precompiled header data. `filespec` contains the file specification for the corresponding precompiled header file. After a plug-in successfully caches a header, attempts to load the file with `CWFindAndLoadFile` return the cached data.

**NOTE** The IDE stores only two precompiled headers in the precompiled header cache.

Before calling `CWCachePrecompiledHeader`, a plug-in should call `CWIsCachingPrecompiledHeaders` to ensure that the IDE has sufficient memory to cache precompiled headers. If `CWIsCachingPrecompiledHeaders` returns true, the plug-in can call `CWCachePrecompiledHeader`. A true result does not guarantee that `CWCachePrecompiledHeader` succeeds. Plug-ins should still check for successful completion.

See Also "CWMemHandle" on page 102

"CWIsCachingPrecompiledHeaders" on page 158

## CWDisplayLines

Description Reports progress information to the IDE for display during the current compilation.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWDisplayLines(
   CWPluginContext  context,
   long             nlines);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `nlines` | Specifies the number of line processed so far by the plug-in. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks Call this routine regularly while compiling to update the IDE's progress window. Plug-ins should call this routine often enough to provide good feedback but not so often as to adversely affect performance. A good rule of thumb is to call `CWDisplayLines` once per 50-100 lines of source code or a few times per second.

**CAUTION** Ensure that whatever logic you use to determine when to call `CWDisplayLines` is fast. Otherwise, simply determining when to use this method can affect performance.

See Also "CWShowStatus" on page 80

## CWFreeObjectData

Description — Releases memory allocated by `CWLoadObjectData`.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWFreeObjectData(
   CWPluginContext  context,
   long             whichfile,
   CWMemHandle      objectdata);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the file by index, in target link order, corresponding to the object data to release. |
| `objectdata` | Contains the object data to be disposed, returned by a previous call to `CWLoadObjectData`. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — Call `CWFreeObjectData` to free object data previously loaded by `CWLoadObjectData`. Be careful to pass the index in `whichfile` of the file corresponding to the data passed in `objectdata`.

See Also — "CWLoadObjectData" on page 161

## CWGetBrowseOptions

Description — Tells a plug-in what types of browser symbols to generate.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetBrowseOptions(
   CWPluginContext  context,
   CWBrowseOptions* browseOptions);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `browseOptions` | Returns a `CWBrowseOptions` structure specifying the types of symbols the plug-in should generate. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks The IDE expects all compiler plug-ins that support generation of browser information to generate information for global variables and objects. A compiler plug-in should call `CWGetBrowseOptions` to determine which additional types of browser data should be generated.

See Also "CWBrowseOptions" on page 173

"reqCompile" on page 211

## CWGetBuildSequenceNumber

Description Returns a unique ID for the current **Make** operation.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetBuildSequenceNumber(
   CWPluginContext  context,
   long*            sequenceNumber);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `sequenceNumber` | Returns the unique ID of the current **Make** operation. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks The IDE assigns each **Make** operation a unique ID number. By retrieving this number with `CWGetBuildSequenceNumber` and storing it in persistent memory (allocated with `CWAllocateMemory`), a plug-in can determine if the current request and previous requests apply to the same **Make** operation.

See Also "CWGetTargetStorage" on page 154

"CWSetTargetStorage" on page 164

"CWAllocateMemory" on page 42

## CWGetCommandLineArgs

Description — Returns the text entered by the user in the **Program Arguments** text box of the **Runtime Settings** panel.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetCommandLineArgs(
   CWPluginContext  context,
   const char**     commandLineArgs);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `commandLineArgs` | Returns a pointer to a constant C string containing the command line parameters entered in the **Program Arguments** field of the **Runtime Settings** panel. |

Return — An error code listed in “Result Codes for Compiler and Linker Plug-ins” on page 227 or “Result Codes for Plug-ins” on page 129

Remarks — This routine returns any command line options that the user has specified in the **Program Arguments** field of the **Runtime Settings** panel. These command line arguments apply to the execution of the final target executable.

Mac OS — On the Mac OS, this method returns information only when the current linker enables the **Runtime Settings** panel. Currently, this happens only for the Java linker.

See Also — “CWGetEnvironmentVariable” on page 143

“CWGetEnvironmentVariableCount” on page 144

“CWGetWorkingDirectory” on page 156

## CWGetEnvironmentVariable

Description — Returns the value of an environment variable as configured in the **Environment Settings** list in the **Runtime Settings** panel.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetEnvironmentVariable(
   CWPluginContext  context,
   long             index,
   const            char** name,
   const            char** value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `index` | Specifies which environment variable to return, by index. |
| `name` | Returns a pointer to a constant C string containing the name of the runtime environment variable specified by `index`. |
| `value` | Returns a pointer to a constant C string containing the value of the runtime environment variable specified by `index`. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — The values returned control runtime settings established prior to launching the target executable, not the current IDE environment variable settings. linker plug-ins use `CWGetEnvironmentVariable` to set up the proper runtime environment before running targets.

To obtain all runtime environment variable settings, call `CWGetEnvironmentVariable` repeatedly with an `index` value ranging from 1 to the count returned by `CWGetEnvironmentVariableCount`.

Mac OS — On the Mac OS, this method returns information only when the current linker enables the **Runtime Settings** panel. Currently, this happens only for the Java linker.

See Also — "CWGetCommandLineArgs" on page 142

"CWGetEnvironmentVariableCount" on page 144

"CWGetWorkingDirectory" on page 156

## CWGetEnvironmentVariableCount

Description — Returns the number of runtime environment variables configured in the **Environment Settings** list box of the **Runtime Settings** panel.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetEnvironmentVariableCount(
   CWPluginContext  context,
   long*            count);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `count` | Returns the count of environment variable settings established in the **Environment Settings** list box of the **Runtime Settings** panel. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — Plug-ins use `CWGetEnvironmentVariableCount` to determine the number of environment variable settings the user has specified for the current target in its **Runtime Settings** panel. Given this count, the plug-in can process all the runtime environment variable settings, usually in preparation for launching a final executable. Typically, linkers obtain all environment variables and pass them to a helper application, which sets up the runtime environment for the target application prior to launch.

Mac OS — On the Mac OS, this method returns information only when the current linker enables the **Runtime Settings** panel. Currently, this happens only for the Java linker.

See Also

"CWGetCommandLineArgs" on page 142

"CWGetEnvironmentVariable" on page 143

"CWGetWorkingDirectory" on page 156

## CWGetMainFileID

Description — Gets the ID of the file currently being processed in the active project target.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetMainFileID(
   CWPluginContext  context,
   short*           fileID);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `fileID` | Returns the file ID of the file to process. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — The IDE assigns a unique ID to each file in a project. Plug-ins use these IDs when creating browser information to specify source files.

A compiler plug-in calls `CWGetMainFileID` in response to a `reqCompile` request, to determine the browser ID of the file currently being compiled. A compiler then uses this ID in browser information to specify the current file as the source file in which a symbol originates.

File IDs can also be useful for tracking project files concisely. File IDs persist between instances of starting and terminating the IDE and opening and closing a project. To determine the file ID of any project file or to determine which file has a given ID, use `CWGetFileInfo`.

See Also — "CWGetMainFileNumber" on page 146

"CWGetMainFileSpec" on page 147

"CWGetMainFileText" on page 147

"CWGetFileInfo" on page 55

"CWProjectFileInfo" on page 109

"CWStoreObjectData" on page 165

"reqCompile" on page 211

## CWGetMainFileNumber

Description — Gets the index of the file currently being processed.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetMainFileNumber(
   CWPluginContext  context,
   long*            fileNumber);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `fileNumber` | Returns the index of the file to process, in target link order. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — In response to a `reqCompile`, `reqCompDisassemble`, or `reqCheckSyntax` request, a plug-in determines the index of the file being compiled by calling `CWGetMainFileNumber`. A plug-in can use the value returned by `CWGetMainFileNumber` to call methods such as `CWLoadObjectData` and `CWStoreObjectData`.

See Also

"CWGetMainFileID" on page 145

"CWGetMainFileSpec" on page 147

"CWGetMainFileText" on page 147

"CWLoadObjectData" on page 161

"CWStoreObjectData" on page 165

"reqCompile" on page 211

"reqCompDisassemble" on page 212

"reqCheckSyntax" on page 211

## CWGetMainFileSpec

Description — Gets the file specification of the file currently being processed.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetMainFileSpec(
   CWPluginContext  context,
   CWFileSpec*      fileSpec);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `fileSpec` | Returns the file specification of the file currently being processed. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — During a `reqCompile`, `reqCompDisassemble`, or `reqCheckSyntax` request, a plug-in determines the location of the file on which to operate by calling `CWGetMainFileSpec`. A plugin can use the value returned by `CWGetMainFileSpec` to retrieve information about the file. A plug-in can also get the file's contents by calling `CWGetFileText` with the value returned by `CWGetMainFileSpec`. To load the text of the file currently being compiled, plug-ins can instead call `CWGetMainFileText`.

See Also

"CWGetMainFileID" on page 145

"CWGetMainFileNumber" on page 146

"CWGetMainFileText" on page 147

"reqCompile" on page 211

"reqCompDisassemble" on page 212

"reqCheckSyntax" on page 211

## CWGetMainFileText

Description — Loads the contents of the file currently being processed.

Prototype

```
#include <DropInCompilerLinker.h>
```

```
CW_CALLBACK CWGetMainFileText(
   CWPluginContext  context,
   const char**     text,
   long*            textLength);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `text` | Returns a pointer to memory containing the file's contents. |
| `textLength` | Returns the size in bytes of the file's contents. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — In response to a `reqCompile`, `reqCompDisassemble`, or `reqCheckSyntax` request, a plug-in retrieves the contents of the file on which to operate by calling `CWGetMainFileText`.

**CAUTION** Plug-ins should *not* release the text pointer returned by `CWGetMainFileText`.

**NOTE** `CWGetFileText` returns text that has been declared as `constant`. Plug-ins should not modify this text data.

See Also — "CWGetMainFileID" on page 145

"CWGetMainFileNumber" on page 146

"CWGetMainFileSpec" on page 147

"reqCompile" on page 211

"reqCompDisassemble" on page 212

"reqCheckSyntax" on page 211

## CWGetModifiedFiles

Description — Gets the count of and a list of source files that have been modified since the last time they were compiled.

Prototype

```
#include "DropinCompilerLinker.h"
   CW_CALLBACK CWGetModifiedFiles(
     CWPluginContext  context,
     long*            modifiedFileCount,
     const long**     modifiedFiles);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `modifiedFileCount` | Returns the count of modified files. |
| `modifiedFiles` | Returns an array listing the modified files by index. |

Remarks

This method exists to support Java but may be useful for other languages. It returns a list of modified or "touched" files, which require recompilation.

This method gets a constant array of long integer indexes that refer to other files in the current target by index. Typically, plug-ins use the indexes returned in `modifiedFiles` to call `CWGetFileInfo`.

The IDE allocates `modifiedFiles` on the plug-in's behalf. The plug-in should not release this data (it will be released by the IDE at the end of the pending compilation).

**NOTE** The IDE creates the list of files to be returned only once during a plug-in request. Subsequent calls to `CWGetModifiedFiles` during the same request get the same list.

See Also

"CWGetFileInfo" on page 55

## CWGetPrecompiledHeaderSpec

Description

Returns the recommended file specification for saving a precompiled header.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetPrecompiledHeaderSpec(
   CWPluginContext  context,
   CWFileSpec*      pchspec,
   const char*      target);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `pchspec` | Returns a file specification for a precompiled header file. |
| `target` | Specifies the desired name of the precompiled header file. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks Plug-ins should call `CWGetPrecompiledHeaderSpec` to determine where to save a precompiled header file. If `target` is `NULL`, the IDE prompts the user for a file specification and returns it in `pchspec`. Otherwise, the IDE creates a file specification using `target` and returns it in `pchspec`.

Plug-ins normally call `CWGetPrecompiledHeaderSpec` in response to a `reqCompile` request for which one of `CWIsPrecompiling` or `CWIsAutoPrecompiling` returns true.

See Also "Precompiling" in the *IDE SDK Developer's Guide*

"CWIsPrecompiling" on page 159

"CWIsAutoPrecompiling" on page 157

## CWGetResourceFile

Description Prompts the user to select an existing file containing resources.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetResourceFile(
   CWPluginContext  context,
   CWFileSpec*      filespec);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `filespec` | Returns the file specification of the resource file chosen by the user. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks `CWGetResourceFile` displays a standard file selection dialog box showing resource files and waits for the user to select a file. If the user cancels, `CWGetResourceFile` returns `cwErrUserCanceled`.

`CWGetResourceFile` is currently used by the Mac OS 68K and PowerPC linkers when compiling code resources for targets with both the **Display Dialog** and **Merge to File** checkboxes set. However, other resource compilers can also use it.

See Also "CWPutResourceFile" on page 162

## CWGetStoredObjectFileSpec

Description Gets the file specification most recently stored with a file in a call to `CWStoreObjectData`.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetStoredObjectFileSpec(
   CWPluginContext  context,
   long             whichfile,
   CWFileSpec*      fileSpec);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the file for which to obtain a `CWFileSpec`, by index in target link order. |
| `fileSpec` | Returns the `CWFileSpec` associated with a file, if any was specified when a plug-in last called `CWStoreObjectData`. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks `CWGetStoredObjectFileSpec` gets the `CWFileSpec` for any externally stored object data file associated with a file in the current project target. `whichfile` specifies the file for which to get the external object file specification, by index, in target link order.

On return, `fileSpec` contains the file specification most recently stored by a plug-in when calling `CWStoreObjectData`. If the most recent call to `CWStoreObjectData` specified no file specification, `CWGetStoredObjectFileSpec` returns an error: `cwErrObjectFileNotStored`.

The IDE determines whether a file specification has been associated with the file by examining the `objectdata` field of the `CWObjectData` structure. If `objectdata` is `NULL`, the IDE assumes the `objectfile` file specification should be ignored.

See Also

"CWStoreObjectData" on page 165

"CWObjectData" on page 180

"CWFileSpec" on page 98

"cwErrObjectFileNotStored" on page 227

## CWGetSuggestedObjectFileSpec

Description

Gets the IDE's preferred location for externally stored object files.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetSuggestedObjectFileSpec(
   CWPluginContext  context,
   long             whichfile,
   CWFileSpec*      fileSpec);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the file for which to return a suggested file specification. |
| `fileSpec` | Returns the location of the file in which the IDE wants external object files stored. |

Return

An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks

Plug-ins that need to store object data in files outside of the project should call `CWGetSuggestedObjectFileSpec` to determine where to store the object code files. Doing so ensures that the IDE

can properly manage the object code, including the following operations:

- Rebuilding the object code when it is missing
- Loading the object code when the plug-in calls `CWLoadObjectData`
- Removing the object code prior to recompilation or when the user selects **Remove Object Code** from the **Project** menu.

The returned file specification specifies the location of the directory in which the plug-in should store object files, not the name of an object code file. The plug-in can use any desired file name within this folder.

Compiler plug-ins often call `CWGetSuggestedObjectFileSpec` as part of the following tasks:

- Determine where to put output files.
- Tell command-line tools where to put output files.
- Specify a location in the `objectfile` field when calling `CWStoreObjectData`.

Linker plug-ins can determine the location and name of the object code file later by calling `CWGetStoredObjectFileSpec`.

See Also "CWLoadObjectData" on page 161

"CWStoreObjectData" on page 165

"CWGetStoredObjectFileSpec" on page 151

## CWGetTargetInfo

Description Gets information about the current target.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetTargetInfo(
   CWPluginContext  context,
   CWTargetInfo*    targetInfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `targetInfo` | Returns information about the current target. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129.

Remarks `CWGetTargetInfo` gets information about the current link target, including the target processor and OS, the final binary type, and target debugging information. Most of this information is determined by the linker currently selected in the **Target Settings** panel. The linker returns this information when handling the `reqTargetInfo` request, by calling `CWSetTargetInfo`. The IDE retains the returned information with the current target.

**NOTE** Post-linkers can also override target information.

See Also "Providing Target Information" in the *IDE SDK Developer's Guide*

"CWTargetInfo" on page 183

"CWSetTargetInfo" on page 163

## CWGetTargetStorage

Description Retrieves global data for the active project target.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetTargetStorage(
   CWPluginContext  context,
   void**           storage);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `storage` | Returns a pointer to global storage retained for the plug-in with the current target by the IDE. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129.

Remarks

Use `CWGetTargetStorage` to retrieve target data previously stored by using `CWSetTargetStorage`. Plug-ins use `CWSetTargetStorage` and `CWGetTargetStorage` to maintain global data with the active target. Target storage is maintained in memory for the duration of one invocation of the IDE but is not stored on disk.

**NOTE** To associate data persistently with individual files in a project, use `CWGetPluginData` and `CWStorePluginData`.

Plug-ins can use `CWGetTargetStorage` to cache data for symbol unmangling requests. Since compilation and unmangling occur as separate requests, data must be stored globally to support unmangling.

A plug-in normally calls `CWGetTargetStorage` and `CWSetTargetStorage` when it receives a `reqTargetLoaded` or `reqTargetUnloaded` request. Plug-ins should allocate persistent target storage by calling `CWAllocateMemory` with the `isPermanent` parameter set to true. Plug-ins should release target memory by calling `CWFreeMemory`.

The IDE only provides target storage to plug-ins that set the `kCompUsesTargetStorage` or `linkerUsesTargetStorage` flags in their dropin flags. Target storage services fail if the appropriate flag is not set.

See Also

"Specifying Plug-in Capabilities" in the *IDE SDK Developer's Guide*

"Compiler and Linker Drop-In Flags" in the *IDE SDK Developer's Guide*

"CWSetTargetStorage" on page 164

"reqTargetLoaded" on page 219

"reqTargetUnloaded" on page 220

"CWGetPluginData" on page 65

"CWStorePluginData" on page 81

"CWAllocateMemory" on page 42

"CWFreeMemory" on page 48

## CWGetWorkingDirectory

Description — Gets the location specified by the user in the **Working Directory** field of the **Runtime Settings** panel.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWGetWorkingDirectory(
   CWPluginContext context,
   CWFileSpec* workingDirectorySpec);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `workingDirectorySpec` | Returns the user-specified location entered in the **Working Directory** field of the **Runtime Settings** panel. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — Linker plug-ins should call `CWGetWorkingDirectory` to determine the preferred working directory prior to launching a target executable. `CWGetWorkingDirectory` returns the location specified in the **Working Directory** field of the **Runtime Settings** panel.

Mac OS — On the Mac OS, this method returns information only when the current linker enables the **Runtime Settings** panel. Currently, this happens only for the Java linker.

See Also — "CWGetCommandLineArgs" on page 142

"CWGetEnvironmentVariable" on page 143

"CWGetEnvironmentVariableCount" on page 144

## CWIsAutoPrecompiling

Description — Indicates whether the current precompile operation was initiated by a build operation.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWIsAutoPrecompiling(
   CWPluginContext  context,
   Boolean*         isAutoPrecompiling);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isAutoPrecompiling` | Returns `true` if the file currently being compiled should be precompiled and if the compilation request resulted from a build operation. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — When responding to a `reqCompile` request, a compiler plug-in should call `CWIsAutoPrecompiling`. If `CWIsAutoPrecompiling` returns true, the plug-in should precompile the current source text obtained by calling `CWGetMainFileText`, or by loading the text of the file indicated by `CWGetMainFileNumber`. The resulting precompiled header should be stored in the location specified by `CWGetPrecompiledHeaderSpec`.

`CWIsAutoPrecompiling` returns `true` when the user chooses **Make** or **Bring Up To Date** from the **Project** menu and a precompiled interface file must be updated. The IDE automatically precompiles only those file types for which the 'precompiled' flag is set in **Project Settings > File Mappings**.

**NOTE** — `CWIsAutoPrecompiling` returns `true` *only* when precompiling interface files encountered during an automated build operation, rather than when manually precompiling a file.

See Also — "Compiling" in the *IDE SDK Developer's Guide*

"reqCompile" on page 211

"CWGetPrecompiledHeaderSpec" on page 149

"CWIsPrecompiling" on page 159

"CWGetMainFileID" on page 145

"CWGetMainFileNumber" on page 146

"CWGetMainFileSpec" on page 147

"CWGetMainFileText" on page 147

## CWIsCachingPrecompiledHeaders

Description — Indicates whether the IDE supports precompiled header caching.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWIsCachingPrecompiledHeaders(
   CWPluginContext  context,
   Boolean*         isCaching);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isCaching` | Returns `true` if the IDE can accept requests to cache precompiled headers. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — Before calling `CWCachePrecompiledHeader`, a plug-in should call `CWIsCachingPrecompiledHeaders` to make sure the IDE is able to cache precompiled header data.

See Also — "CWCachePrecompiledHeader" on page 138

## CWIsGeneratingDebugInfo

Description — Indicates whether a plug-in should generate debugging information.

Prototype

```
#include <DropInCompilerLinker.h>
```

```
CW_CALLBACK CWIsGeneratingDebugInfo(
   CWPluginContext  context,
   Boolean*         isGenerating);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isGenerating` | Returns true if the plug-in should generate debugging information. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks — Compiler plug-ins responding to `reqCompile` requests should call `CWIsGeneratingDebugInfo` to determine if the plug-in should generate debugging information. `CWIsGeneratingDebugInfo` returns `true` if the debugging flag (indicated by a bug icon next to a file's name in the project window) is enabled for the file being compiled.

See Also — "Generating Debugging Data" in the *IDE SDK Developer's Guide*

"reqCompile" on page 211

"reqLink" on page 214

## CWIsPrecompiling

Description — Indicates whether a plug-in should precompile the current file.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWIsPrecompiling(
   CWPluginContext  context,
   Boolean*         isPrecompiling);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isPrecompiling` | Returns `true` if the file currently being compiled should be precompiled. |

Return — An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks

When responding to a `reqCompile` request, a compiler plug-in should call `CWIsPrecompiling`. If `CWIsPrecompiling` returns `true`, the plug-in should precompile the source code specified by `CWGetMainFileText` and store it in the file returned by `CWGetPrecompiledHeaderSpec`.

`CWIsPrecompiling` returns `true` when the user chooses **Precompile** from the **Project** menu or when the IDE automatically recompiles a precompiled header file. In the latter case, `CWIsAutoPrecompiling` also returns `true`.

See Also

"Compiling" in the *IDE SDK Developer's Guide*

"CWIsAutoPrecompiling" on page 157

"CWGetPrecompiledHeaderSpec" on page 149

"CWGetMainFileText" on page 147

"reqCompile" on page 211

## CWIsPreprocessing

Description

Indicates whether a plug-in should preprocess the current file.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWIsPreprocessing(
   CWPluginContext  context,
   Boolean*         isPreprocessing);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isPreprocessing` | Returns `true` if the file currently being compiled should be preprocessed. |

Return

An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks

When responding to a `reqCompile` request, a compiler plug-in should call `CWIsPreprocessing` to determine if the source code obtained by calling `CWGetMainFileText` should be preprocessed.

Preprocessing usually involves textual substitution or source transformation. Plug-ins usually display the result of preprocessing in a window by calling `CWCreateNewTextDocument`.

See Also

"Compiling" in the *IDE SDK Developer's Guide*

"CWGetMainFileText" on page 147

"CWGetMainFileSpec" on page 147

"CWIsPrecompiling" on page 159

"CWCreateNewTextDocument" on page 44

"reqCompile" on page 211

## CWLoadObjectData

Description

Retrieves object data stored with a file.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWLoadObjectData(
   CWPluginContext  context,
   long             whichfile,
   CWMemHandle*     objectdata);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the index of the file for which to load object data, in target link order. |
| `objectdata` | Returns a `CWMemHandle` containing the object data. |

Return

An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks

To retrieve object data associated with a file in the active target, use `CWLoadObjectData`. `CWLoadObjectData` returns the object data most recently stored for `whichfile` in a call to `CWStoreObjectData`.

The data returned in `objectdata` can be object code, resource data, or some combination of both. The IDE has no knowledge of

and makes no assumptions about the content of the `objectdata` handle. The format of the data is determined by agreement between compiler and linker.

If a plug-in stores object data in a file external to the project, `CWLoadObjectData` loads the entire contents of the file into a `CWMemHandle` and returns it to the plug-in. A plug-in can store object data in an external file by specifying a value for the `objectfile` field of a `CWObjectData` structure when calling `CWStoreObjectData`,

Before accessing the data returned by `CWLoadObjectData`, lock it using `CWLockMemHandle`. When finished using the data, release it by calling `CWFreeObjectData`.

To specify the first file in the active target, use 0. To specify the last file, use the value returned by `CWGetProjectFileCount - 1`.

See Also

"CWStoreObjectData" on page 165

"CWObjectData" on page 180

"CWLockMemHandle" on page 70

"CWFreeObjectData" on page 140

"CWGetProjectFileCount" on page 67

## CWPutResourceFile

Description

Displays a file save dialog box to prompt the user to select a file in which to store resources.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWPutResourceFile(
   CWPluginContext  context,
   const char*      prompt,
   const char*      name,
   CWFileSpec*      filespec);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `prompt` | A C string prompt. |
| `name` | A C string specifying the default name of the resource file. |
| `filespec` | Returns a file specification for the resource file chosen by the user. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks `CWPutResourceFile` displays a standard file dialog box and waits for the user to specify the name and location of a new resource file. If the user cancels, `CWPutResourceFile` returns `cwErrUserCanceled`.

The Mac OS 68K and PowerPC linkers use `CWPutResourceFile` when compiling code resources for targets with the **Display Dialog** checkbox set and the **Merge to File** checkbox cleared. However, other resource compilers can also use this method.

See Also "CWGetResourceFile" on page 150

## CWSetTargetInfo

Description Sets properties of the current target.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWSetTargetInfo(
   CWPluginContext  context,
   CWTargetInfo*    targetInfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `targetInfo` | Specifies properties of the current target. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks In response to a `reqTargetInfo` request, a linker plug-in should call `CWSetTargetInfo`. `CWSetTargetInfo` specifies many

properties of the current link target, including target processor and OS, the final binary type, and target debugging information. Plug-ins can obtain the current target settings using `CWGetTargetInfo`.

See Also

"CWSetTargetInfo" on page 163

"CWGetTargetInfo" on page 153

"CWTargetInfo" on page 183

"reqTargetInfo" on page 218

## CWSetTargetStorage

Description

Stores global data with the current target.

Prototype

```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWSetTargetInfo(
   CWPluginContext  context,
   void*            storage);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `storage` | Specifies a pointer to global data to be retained by the IDE with the current target for the current plug-in. |

Return

An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks

Use `CWSetTargetStorage` to store global data with the current target. Plug-ins use `CWGetTargetStorage` and `CWSetTargetStorage` to maintain global data with the active target. Target storage is maintained in memory for the duration of one invocation of the IDE but is not stored on disk.

**NOTE** To associate data persistently with individual files in a project, use `CWGetPluginData` and `CWStorePluginData`.

Plug-ins use `CWSetTargetStorage` to cache data for symbol unmangling requests. Since compilation and unmangling occur as

separate requests, data must be stored globally to support unmangling.

A plug-in normally calls `CWGetTargetStorage` and `CWSetTargetStorage` when it receives a `reqTargetLoaded` or `reqTargetUnloaded` request. Target storage should be allocated persistently by calling `CWAllocateMemory` with its `isPermanent` parameter set to true and released by calling `CWFreeMemory`.

The IDE only provides target storage to plug-ins that set the `kCompUsesTargetStorage` or `linkerUsesTargetStorage` flags in their dropin flags. Target storage services fail if the appropriate flag is not set.

See Also "Specifying Plug-In Capabilities" in the *IDE SDK Developer's Guide*

"Compiler and Linker Drop-In Flags" in the *IDE SDK Developer's Guide*

"CWGetTargetStorage" on page 154

"reqTargetLoaded" on page 219

"reqTargetUnloaded" on page 220

"CWGetPluginData" on page 65

"CWStorePluginData" on page 81

"CWAllocateMemory" on page 42

"CWFreeMemory" on page 48

## CWStoreObjectData

Description Stores object, resource, and browser data with a file in the current target and, optionally, specifies source dependencies.

Prototype
```
#include <DropInCompilerLinker.h>
CW_CALLBACK CWStoreObjectData(
   CWPluginContext  context,
   long             whichfile,
   CWObjectData*    objectdata);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichfile` | Specifies the file for which the IDE should store object data and dependencies, by index in target link order. |
| `objectdata` | Specifies numerous properties of the object data to be stored, including the object code, browser data, and optionally dependencies. |

Return An error code listed in "Result Codes for Compiler and Linker Plug-ins" on page 227 or "Result Codes for Plug-ins" on page 129

Remarks `CWStoreObjectData` stores data passed in `objectdata` with the current project target and associates it with the file in the `whichfile` parameter, specified by index.

Compilers normally call `CWStoreObjectData` when done responding to a `reqCompile` request, to save both object code and browser data.

`CWStoreObjectData` can also be used to establish dependencies among arbitrary files in a project. Normally, plug-ins establish file dependencies with `CWFindAndLoadFile`. When using `CWFindAndLoadFile` is inconvenient (such as when adapting command line tools), a plug-in can store a list of dependenciesby using `CWStoreObjectData`.

See Also "CWObjectData" on page 180

# User Routines for Compiler and Linker Plug-ins

In addition to the standard plug-in entry points, compiler and linker plug-ins provide two additional entry points for specifying associated file types, and for providing target information to the IDE. They may optionally export additional symbol unmangling and browser symbol entry points.

For more about plug-in entry points, including compiler- and linker-specific entry points, see "Compiler- and Linker-Specific Entry Points," "Informational Entry Points," and "Responding to IDE Requests" in the *IDE SDK Developer's Guide*.

The following entry points are specific to compilers and linkers:

- CWPlugin_GetDefaultMappingList Entry Point
- CWPlugin_GetTargetList Entry Point
- Helper_GetCompilerBrSymbols Entry Point
- Helper_Unmangle Entry Point

## CWPlugin_GetDefaultMappingList Entry Point

Description — Provides an informational entry point that the IDE uses to determine the file types to associate with a plug-in.

Prototype

```
CWPLUGIN_ENTRY (CWPlugin_GetDefaultMappingList)
   (const CWExtMapList** defaultMappingList)
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| `defaultMappingList` | Returns a `CWExtMapList` to the IDE containing an array of `CWExtensionMapping` structures specifying file type, extension, and flags. |

Return — Usually, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks — The IDE uses this entry point to obtain the default list of file mappings to associate with a plug-in. compiler and linker plug-ins must implement this entry point. Usually, plug-ins implement this entry point by returning a pointer to a constant `CWExtMapList` structure.

File mappings appear in the **File Mappings** panel of the **Project Settings** dialog box. File mappings determine which types of files the IDE presents to a plug-in for compiling or linking. File mappings also control which files may be added to a project.

The IDE adds file mappings to a project when it creates a new project completely from scratch (not from stationery) and when the user reverts to factory defaults.

Mac OS — On Mac OS, this routine is optional. In its place, a plug-in may provide an `'EMap'` resource, specifying the same information.

See Also — "Specifying File Mappings" in the *IDE SDK Developer's Guide*

## CWPlugin_GetTargetList Entry Point

Description — Provides an informational entry point that the IDE uses to determine the target CPUs and operating systems supported by a plug-in.

Prototype

```
CWPLUGIN_ENTRY (CWPlugin_GetTargetList)
   (const CWTargetList** targetList)
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| `targetList` | Returns a `CWTargetList` to the IDE containing two arrays of 4-character codes listing the CPUs and operating systems supported by a plug-in. |

Return — Usually, the plug-in should return the `cwNoErr` result code. See "Result Codes for Plug-ins" on page 129.

Remarks — The IDE uses this entry point to obtain a list of the operating systems and CPUs supported by a plug-in. Compiler and linker plug-ins must implement this entry point. Usually, plug-ins implement this entry point returning a pointer to a constant `CWTargetList` structure.

The IDE uses this list to determine which plug-ins are enabled. When the user chooses a linker from the Linker popup in the **Target Settings** panel of the **Project Settings** window, the linker's supported CPU and OS are used to find other matching compiler plug-ins, which are then enabled for use in the **File Mappings** panel. Also, the IDE adds the preference panels for all enabled plug-ins to the **Project Settings** dialog box.

Mac OS — On the Mac OS, this routine is optional. In its place, a plug-in may provide a `'Targ'` resource to specify the same information.

See Also — "Specifying Target Platforms" in the *IDE SDK Developer's Guide*

## Helper_GetCompilerBrSymbols Entry Point

Description — Provides an informational entry point that the IDE uses to obtain names of custom browser symbol types generated by a compiler plug-in.

Prototype

```
#include <DropinCompilerLinker.h>
typedef CWPLUGIN_ENTRY
   (*Helper_GetCompilerBrSymbols)
   (CWCompilerBrSymbolInfo* BrowseSymbolInfo);
```

Parameters

The parameters for this entry point include:

| | |
|---|---|
| `BrowseSymbolInfo` | Returns a list of browser symbol type names to the IDE. |

Return

An error value described in "Result Codes for Plug-ins" on page 129

Remarks

The IDE calls a compiler's browser symbol entry point to obtain the human-readable, localized names of custom browser symbol types from the plug-in. The IDE passes this entry point a structure containing the compiler's target storage (if any has been allocated) and a field in which the plug-in returns a pointer to a list. The list associates internal and localized type names with the custom symbol type codes generated by the compiler.

The IDE only calls this entry point if a compiler sets the `kCompEmitsOwnBrSymbols` dropin flag. The IDE calls a compiler's browser symbol entry point if the file mappings for a project enable the compiler, regardless of whether any files associated with the compiler appear in the active project. Only compiler plug-ins need to implement this entry point.

Compilers that generate custom browser symbols assign numeric values to symbols to indicate symbol type. The values must be assigned from the range reserved for plug-ins, starting with `browseCompSymbolStart` and increasing sequentially. The strings returned by this entry point provide type names for the custom symbol types (not individual symbols, which appear in the browse data).

For each custom symbol type, the `CWCompilerBrSymbolInfo` structure returned by this entry point provides two pieces of information:

- `symName`: The symbol types's internal name, used to group symbols having functionally equivalent type. Plug-ins should not localize this name.

- `symUIName`: The symbol type's localized, user-visible name, to be displayed in browser windows and used when selecting the type of symbol to view (function, global variable, class, etc.).

The IDE returns this information in an array of `CWCompilerBrSymbol` structures, with one entry for each custom type used by the plug-in when generating browser data. The first array entry corresponds to the first symbol type (`browseCompSymbolStart`). The second entry corresponds to the second symbol type (`browseCompSymbolStart + 1`). Subsequent entries continue to increment this value.

**NOTE** The IDE treats the `CWCompilerBrSymbolList` structure returned by reference as constant data.

If multiple compilers generate symbols with the same type name (`symName`), the IDE groups the symbols under the same heading in the IDE's browser catalog window.

Mac OS 68K-based non-CFM plug-ins implement this entry point by providing a code resource of type `'Dhlp'`, which must be named `"Helper_GetCompilerBrSymbols"`. Plug-ins must declare the `main()` entry point for the code resource as shown above.

See also "Compiler Browser Symbol Entry Point" in the *IDE SDK Developer's Guide*

"Compiler and Linker Drop-In Flags" in the *IDE SDK Developer's Guide*

"`'Dhlp'` Resource" in the *IDE SDK Developer's Guide*

"`'Flag'` Resource" in the *IDE SDK Developer's Guide*

"CWCompilerBrSymbolInfo" on page 175

"CWCompilerBrSymbolList" on page 175

"CWCompilerBrSymbol" on page 174

"EBrowserItem" on page 246

## Helper_Unmangle Entry Point

Description — Provides an informational entry point that the IDE uses to unmangle browser symbols generated by linker plug-ins.

Prototype

```
#include <DropinCompilerLinker.h>
typedef CWPLUGIN_ENTRY
   (*Helper_Unmangle) (CWUnmangleInfo*);
```

Parameters — The parameters for this entry point include:

| | |
|---|---|
| `CWUnmangleInfo` | Provides information about the symbol to be unmangled and buffers for returning unmangled symbol names to the IDE. |

Return — An error value described in "Result Codes for Plug-ins" on page 129.

Remarks — The IDE calls a linker's symbol unmangling entry point to convert a mangled identifier name emitted in browser data into its human-readable form. The IDE calls this entry point only if the plug-in sets the `linkerUnmangles` flag in its dropin flags. Only linker plug-ins need to implement this entry point.

The `CWUnmangleInfo` structure passed to the plug-in specifies the following:

1. `targetStorage`: Contains the plug-in's target storage, often used to maintain additional information that is useful when unmangling symbols. The linker plug-in should allocate this storage in response to a previous `reqTargetLoaded` request. The linker plug-in should save information relevant to unmangling in target storage during compilation and linking.
2. `mangledName`: Provides the mangled symbol name.
3. `unmangleBuff`: Provides storage in which to return an unmangled name,
4. `unmangleBuffSize`: Specifies the size of the unmangled name to return, including the `NULL` terminator character. Do not exceed this size when unmangling.
5. `browserClassID`: Indicates the type of the symbol whose name is to be unmangled.

6. `browserLang`: The plug-in should return an `ELanguage` language code in this field, specifying the symbol source language.

The IDE calls this entry point to unmangle browser symbols when displaying browser windows.

Mac OS

68K-based non-CFM plug-ins implement this entry point by providing a code resource of type `'Dhlp'`, which must be named `"Helper_Unmangle"`. Plug-ins must declare the `main()` entry point for the code resource as shown above.

See also

"`'Dhlp'` Resource" in the *IDE SDK Developer's Guide*

"CWUnmangleInfo" on page 190

"reqTargetLoaded" on page 219

"ELanguage" on page 247

# Data Structures for Compiler and Linker Plug-ins

This section describes the plug-in API data structures available for compilers, linkers, pre-linkers, and post-linkers.

The data structures for compilers and linkers are:

- `CWBrowseOptions`
- `CWCompilerBrSymbolInfo`
- `CWCompilerBrSymbolList`
- `CWDependencyInfo`
- `CWCompilerBrSymbol`
- `CWExtensionMapping`
- `CWExtMapList`
- `CWObjectData`
- `CWTargetInfo`
- `CWTargetList`
- `CWUnmangleInfo`

## CWBrowseOptions

Description Specifies what browser information compilers should generate.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWBrowseOptions {
   Boolean  recordClasses;
   Boolean  recordEnums;
   Boolean  recordMacros;
   Boolean  recordTypedefs;
   Boolean  recordConstants;
   Boolean  recordTemplates;
   Boolean  recordUndefinedFunctions;
   long     reserved1;
   long     reserved2;
} CWBrowseOptions;
```

Fields The fields in `CWBrowseOptions` include:

| | |
|---|---|
| `recordClasses` | If `true`, classes and structured types should be recorded. Examples of classes are C++ classes and Pascal classes. Examples of structured type classes are C structs and unions and Pascal records. |
| `recordEnums` | If `true`, enumerated types should be recorded. |
| `recordMacros` | If `true`, macros should be recorded. |
| `recordTypedefs` | If `true`, user-defined types other than those recorded for `recordClasses` should be recorded. |
| `recordConstants` | If `true`, constant definitions should be recorded. |
| `recordTemplates` | If `true`, templates should be recorded. |
| `recordUndefinedFunctions` | |
| | If `true`, routines that are declared but not defined should be recorded. |
| `reserved1`, `reserved2` | These fields are reserved by the IDE. Do not modify their contents. |

Remarks This structure specifies the source code elements for which a compiler should generate browser information. Plug-ins can get this structure by calling `CWGetBrowseOptions`.

**NOTE** The IDE assumes that compilers always record browser information for global variables and functions, in addition to any item types enabled by `CWGetBrowseOptions`. Thus, no flags for functions and global variables exist.

See Also "CWGetBrowseOptions" on page 140

## CWCompilerBrSymbol

Description Describes a compiler-specific browser symbol type.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWCompilerBrSymbol {
   char  symName[32];
   char  symUIName[32];
} CWCompilerBrSymbol;
```

Fields The fields in `CWBrowserBrSymbol` include:

| | |
|---|---|
| `symName` | Specifies an internal name for the browser symbol type. This name should not be localized. |
| `symUIName` | Specifies the localized, human-readable name of the browser symbol type. The IDE presents this symbol to the user. |

Remarks This data structure describes a compiler-specific browser symbol type. It appears in a `CWCompilerBrSymbolList` data structure. Compiler plug-ins return the `CWCompilerBrSymbolList` structure to the IDE through the Helper_GetCompilerBrSymbols Entry Point.

The IDE groups symbols in the browser window by `symName`. If multiple compilers generate symbols with the same `symName`, the symbols appear under the same heading in the IDE's browser catalog window.

See Also "CWCompilerBrSymbolList" on page 175

"CWCompilerBrSymbolInfo" on page 175

"Helper_GetCompilerBrSymbols Entry Point" on page 168

## CWCompilerBrSymbolInfo

Description Gets the names of custom browser symbol types for the IDE.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWCompilerBrSymbolInfo {
   void*                    targetStorage;
   CWCompilerBrSymbolList*  symList;
} CWCompilerBrSymbolInfo;
```

Fields The fields in `CWBrowserBrSymbolInfo` include:

| | |
|---|---|
| `targetStorage` | Points to the plug-in's target data, if it's available. This should have been set up during a previous `reqTargetLoaded` request. |
| `symList` | Returns a pointer to a list of browser symbol type names. |

Remarks The IDE passes this data structure to a compiler's Helper_GetCompilerBrSymbols Entry Point. The plug-in is expected to return a pointer to a constant list of custom symbol type names, in `symList`. The IDE passes the plug-in's target storage in `targetStorage` (but this is usually not required to return symbol type names).

See Also "Helper_GetCompilerBrSymbols Entry Point" on page 168

## CWCompilerBrSymbolList

Description Contains a list of compiler-specific browser symbols.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWCompilerBrSymbolList {
   short               count;
   CWCompilerBrSymbol  items[1];
} CWCompilerBrSymbolList;
```

Fields The fields in `CWBrowserBrSymbolList` include:

| | |
|---|---|
| `count` | Specifies the number of symbols in the list. |
| `items` | Points to an array of browser symbol type names. |

Remarks This data structure contains an array of compiler browser symbol type name structures. Each `CWCompilerBrSymbol` element in the array specifies the internal and user-visible names for a single custom type used by a compiler when generating browser data.

See Also "CWCompilerBrSymbol" on page 174

"Helper_GetCompilerBrSymbols Entry Point" on page 168

## CWDependencyInfo

Description Specifies a file depended upon by the file for which object code is being stored in a call to `CWStoreObjectData`.

Definition
```
#include <DropInCompilerLinker.h>
typedef struct CWDependencyInfo {
   long        fileIndex;
   CWFileSpec  fileSpec;
   short       fileSpecAccessType;
   short       dependencyType;
} CWDependencyInfo;
```

Fields The fields in `CWDependencyInfo` include:

| | |
|---|---|
| `fileIndex` | Specifies a file depended upon by the file whose object data is being stored, by index in target link order. Use -1 to specify the depended-upon file using `fileSpec` instead. |
| `fileSpec` | When `fileIndex` is -1, this field specifies the depended-upon file by `CWFileSpec` instead of by index. |

| | |
|---|---|
| `fileSpecAccessType` | Specifies how the IDE should find the file after the user has chosen a command like **Re-search for Files** in the **Project** menu. Valid values are: `cwAccessPathRelative`, `cwAccessAbsolute`, `cwAccessFileName`, and `cwAccessFileRelative`. Ignored unless `fileIndex` is -1. |
| `dependencyType` | A `CWDependencyType` value that specifies how the dependent file depends on the depended-upon file. |

Remarks

A plug-in compiler or linker uses the `CWDependencyInfo` structure to store dependency information for a file when calling `CWStoreObjectData`. The `CWObjectData` structure's `dependencies` field points to an array of elements of `CWDependencyInfo` type, each of which specifies one file depended upon by the file whose object code is being stored.

To specify that the object data depends on the first file in the target, store 0 in `fileIndex`. To specify the last file, store `CWGetProjectFileCount(...) - 1`. Store `-1` in `fileIndex` to specify the depended-upon file using the `fileSpec` field. Using a file specification lets your plug-in finds other depended-upon files by iterating through target files using `CWGetFileInfo`.

See Also

"CWDependencyType" on page 93

"CWGetProjectFileCount" on page 67

"CWObjectData" on page 180

"CWStoreObjectData" on page 165

"CWGetFileInfo" on page 55

## CWExtensionMapping

Description

Provides flags indicating how the IDE should handle files having a specified type and extension.

Prototype

```
#include <DropInCompilerLinker.h>
```

```
typedef struct CWExtensionMapping {
   CWDataType            type;
   char                  extension[32];
   CompilerMappingFlags  flags;
} CWExtensionMapping;
```

Fields The fields in `CWExtensionMapping` are:

| | |
|---|---|
| `type` | Specifies the type of the file. Relevant only on the Mac OS. |
| `extension` | Specifies the file extension, if any, as a C string. |
| `flags` | Specifies bit flags indicating how the IDE should handle the file. Valid values are `kPrecompile`, `kLaunchable`, `kRsrcfile`, and `kIgnored`. Set all other bits to zero. |

Remarks Plug-ins use structures of type `CWExtensionMapping` to return file mappings to the IDE via the file mapping entry point. File mapping entry points return an array of `CWExtensionMapping` structures in a `CWExtMapList` object. Each array entry specifies one kind of project file, by extension and Mac OS file type (if relevant) and flags indicating how files of this type should be handled by the IDE.

See Also “CWExtMapList” on page 178

## CWExtMapList

Description Returns a list of file mappings for a plug-in to the IDE.

Prototype

```
#include <DropInCompilerLinker.h>
typedef struct CWExtMapList {
   short                 version;
   short                 nMappings;
   CWExtensionMapping*   mappings;
} CWExtMapList;
```

Fields

The fields in `CWExtMapList` include:

| | |
|---|---|
| `version` | Specifies the version of the `CWExtMapList` structure. Use `kCurrentCWExtMapListVersion` for the latest version. |
| `nMappings` | Specifies the number of `CWExtensionMapping` structures appearing in `mappings`. |
| `mappings` | An array of `CWExtensionMapping` structures, each of which specifies a single file type, by file type and extension, and its associated flags. |

Remarks

Compiler and linker plug-ins return a list of file mappings to the IDE via the CWPlugin_GetDefaultMappingList Entry Point. The IDE calls this entry point when adding file mappings to a newly created project or when the user reverts to factory defaults. The `CWExtMapList` structure specifies the number of file mappings returned and returns a pointer to an array of `CWExtensionMapping` structures. Each `CWExtensionMapping` structure specifies a file type handled by the plug-in, including flags to indicate how the IDE should handle files of that type.

See Also

"Specifying File Mappings" in the *IDE SDK Developer's Guide*

"CWExtensionMapping" on page 177

## CWObjectData

Description — Describes information about the object code generated by a compiler.

Definition

```
#include <DropInCompilerLinker.h>
typedef struct CWObjectData {
   CWMemHandle         objectdata;
   CWMemHandle         browsedata;
   long                reserved1;
   long                codesize;
   long                udatasize;
   long                idatasize;
   long                compiledlines;
   Boolean             interfaceChanged;
   long                reserved2;
   void*               compilecontext;
   CWDependencyInfo*   dependencies;
   short               dependencyCount;
   CWFileSpec*         objectfile;
} CWObjectData;
```

Fields — The fields in `CWObjectData` include:

| | |
|---|---|
| `objectdata` | Contains the object code, resource data, or other data that was generated from the file. May be `NULL` to indicate that the data is stored in a file external to the project. |
| `browsedata` | Contains the browser records that were generated for the file. May be `NULL` if browser data is not supported. |
| `reserved1` | Reserved for future use. Plug-ins should store 0 in this field. |
| `codesize` | Indicates the size, in bytes, of the object data that was generated from the file. |
| `udatasize` | Indicates the size, in bytes, of uninitialized data in the object data. |
| `idatasize` | Indicates the size, in bytes, of initialized data in the object data. |

| | |
|---|---|
| compiledlines | Indicates the number of lines of source code processed while generating the object data. |
| interfaceChanged | Set this value to true if the external interface of the file that was compiled has changed. The IDE then recompiles any other target file with a dependency of type cwInterfaceDependency on that file. |
| compilecontext | Reserved for use by the IDE. Plug-ins should set this value to 0. |
| dependencies | Points to an optional array of files that rely on the object data. The array consists of elements of type CWDependencyInfo. Set this value to NULL to specify no dependencies. |
| dependencyCount | Indicates the number of elements in the dependencies array. |
| objectfile | Indicates the location of external object code to associate with the file. Ignored unless objectdata is NULL. Set this to NULL to specify no external object code file. |

Remarks

A plug-in compiler or linker uses the CWObjectData data structure to store object code, resource data, browser data, and other information generated from a source file. The plug-in passes this data structure to the IDE when it calls CWStoreObjectData.

objectdata stores the object code, resource data, and possibly debugging information generated from a source file or imported from a library file. If objectdata is NULL, then the IDE assumes that the data resides in an external object file, specified by objectfile.

browsedata stores the browser information generated for a file, which consists of symbolic information, such as variables and their types, functions and their parameteres, and classes and their methods and data members. The IDE does not require browsedata, and its value can be NULL.

`codesize`, `udatasize`, and `idatasize` indicate the sizes of any code, data, and initialized data emitted in the `objectdata` handle. Since the IDE knows nothing about the format of the `objectdata` handle, it cannot infer these sizes. Any of these values can be 0. `compiledlines` indicates the number of lines of source compiled by the plug-in. These fields are simply displayed to the user in the project window and are provided for informational purposes only.

`interfaceChanged` indicates to the IDE whether the public interface of the compiled file has changed. If so, the IDE recompiles any dependent file having a dependency of type `cwInterfaceDependency`.

`dependencies` and `dependencyCount` specify a list of files that the compiled file depends upon. Note that setting this flag may cause files to be recompiled even when the content of `objectdata` does not change. The `dependencies` list can be `NULL`.

`objectfile` specifies the location of external object code associated with a file in place of data in `objectdata`. The IDE ignores `objectfile` unless `objectdata` contains a value of `NULL`.

See Also

"CWStoreObjectData" on page 165

"CWLoadObjectData" on page 161

"CWDependencyInfo" on page 176

"CWFindAndLoadFile" on page 45

"CWDependencyType" on page 93

## CWTargetInfo

Description Specifies information about a project target.

Definition

```
#include <DropInCompilerLinker.h>
typedef struct CWTargetInfo {
   short          outputType
   CWFileSpec     outfile;
   CWFileSpec     symfile;
   CWFileSpec     runfile;
   short          linkType;
   Boolean        canRun;
   Boolean        canDebug;
   CWDataType     targetCPU;
   CWDataType     targetOS;
#if CWPLUGIN_HOST == CWPLUGIN_HOST_MACOS
   OSType         outfileCreator;
   OSType         outfileType;
   OSType         debuggerCreator;
   OSType         runHelperCreator;
#endif
#if CWPLUGIN_HOST == CWPLUGIN_HOST_WIN32
   Boolean        runHelperIsRegKey;
   Boolean        debugHelperIsRegKey;
   char           args[512];
   char           runHelperName[512];
   Boolean        runHelperRequiresURL;
   char           reserved2;
   char           debugHelperName[512];
#endif
   CWFileSpec     linkAgainstFile;
} CWTargetInfo;
```

Fields

The fields in `CWTargetInfo` include:

| Field | Description |
|---|---|
| `outputType` | Specifies what the linker creates: `linkOutputNone`, `linkOutputFile`, or `linkOutputDirectory`. |
| `outfile` | Specifies the target output file produced by the linker. |
| `symfile` | Specifies the file that contains the symbolic debugging information produced by the linker. |
| `runfile` | Specifies the file that should be launched or passed to the run helper when the user chooses **Run** from the **Project** menu. This specification can be the same file as `outfile`. If this file is an executable file, such as an application, the IDE launches it directly. Otherwise, the IDE asks the application specified by `runHelperName` or `runHelperCreator` to open the file specified by `runFile`. |
| `linkType` | Specifies the target linker model. Possible values include `exelinkageFlat`, `exelinkageSegmented`, and `exelinkageOverlay1`. |
| `canRun` | If `true`, the IDE activates the **Run** command. |
| `canDebug` | If `true`, the IDE activates the **Debug** command. |
| `targetCPU` | The processor for which the linker generates software. “Constants for Compiler and Linker Plug-ins” on page 191 shows possible values for this field. |
| `targetOS` | The operating system for which the linker generates software. “Constants for Compiler and Linker Plug-ins” on page 191 shows possible values for this field. |

| Field | Description |
|---|---|
| `outfileCreator` | If outputType is `linkOutputFile`, this field contains the creator of the linker's output file.<br><br>Defined for Mac OS plug-ins only. |
| `outfileType` | If outputType is `linkOutputFile`, this field contains the file type of the linker's output file.<br><br>Defined for Mac OS plug-ins only. |
| `debuggerCreator` | |
| | Specifies the signature of the application to be used to debug the linker's output file.<br><br>Defined for Mac OS plug-ins only. |
| `runHelperCreator` | |
| | Specifies the signature of the application needed to run the linker's output file.<br><br>Defined for Mac OS plug-ins only. |
| `runHelperIsRegKey` | |
| | If `true`, `runHelperName` holds a registry key. If `false`, the IDE treats `runHelperName` as a file name. |
| debugHelperIsRegKey | |
| | If `true`, `debugHelperName` holds a registry key. If `false`, the IDE treats `debugHelperName` as a file name. |
| args | A C string constructed by the plug-in, containing command line arguments, to be passed to the executable prior to launch.<br><br>Defined for Windows plug-ins only. |

| Field | Description |
|---|---|
| runHelperName | If `runHelperIsRegKey` is `false`, this value specifies the name of any application required to assist in running the executable. If `runHelperIsRegKey` is `true`, this value specifies the name of a Windows registry key, that specifies the full path of the application to use.<br><br>Defined for Windows plug-ins only. |
| runHelperRequiresURL | |
| | Set this flag if the run helper expects the specification of the file to run to be passed as a URL.<br><br>Defined for Windows plug-ins only. |
| reserved2 | Reserved. Do not use. Defined on Windows only. |
| debugHelperName | If `debugHelperIsRegKey` is `false`, this value specifies the name of any application required to assist in debugging the executable. If `debugHelperIsRegKey` is true, this value specifies the name of a Windows registry key, which specifies the full path of the application to use.<br><br>Defined for Windows plug-ins only. |
| linkAgainstFile | Specifies a file within the project that includes this file should link into its final binary. The specified file can be the same as `outfile`. |

Remarks

A linker plug-in uses the `CWTargetInfo` data structure to store information about its target executable. `CWGetTargetInfo` and `CWSetTargetInfo` use this data structure.

`outputType` and `outfile` specify the type and location of the linker's output. `symfile` specifies the location of the corresponding

symbolics file, if any, used by a debugger. `runfile` specifies a file to be passed to the run helper application. If `runfile` matches `outfile`, the IDE launches the target executable. If `runfile` is specified, but no run helper exists, the IDE launches the target application and passes it the `runfile`.

`linkType` describes the organization and addressing model of code in the final executable produced by the linker. The IDE supports normal ("flat"), overlayed (used most commonly by embedded systems), and segmented (Mac 68K code resource) linkage models.

`canRun` specifies whether the IDE should enable the **Project > Run** command for this target. `canDebug` specifies whether the IDE should enable the **Project > Debug** command for this target.

`targetCPU` and`targetOS` specify the CPU and operating system on which the target runs. The IDE uses these fields to enable other plug-in types, as determined by the currently selected linker. `DropinCompilerLinker.h` defines the appropriate values for these fields.

Windows

When `true`, `runHelperIsRegKey` and `debugHelperIsRegKey` indicate that `runHelperName` and `debugHelperName` are full paths specifying the run and debug helper applications, respectively. When false, `runHelperName` and `debugHelperName` are the names of registry keys specifying the full paths of the run and debug helper applications. `runHelperRequiresURL` indicates that the run helper wants its primary file argument (which refers to `runfile`) specified using URL syntax.

As an example, to invoke a run helper named '`javavm`' on a `runfile` named `test.java` in directory `c:\testapp` with an `args` strings of '-a -b -c', with the `runfile` specified using URL syntax, the IDE would construct this command line:

```
javavm file://c:/testapp/test.java -a -b -c
```

`args` specifies command line arguments to be passed to the final executable when launched, either directly or through the run helper application. The plug-in specifies these arguments and returns them to the IDE. Linkers typically obtain the command line arguments

specified by the user in **Runtime Settings** using `CWGetCommandLineArgs`, add any necessary additional command line arguments, and return the complete string of arguments to the IDE.

`linkAgainstFile` specifies the file produced by this target, which should be linked into any parent projects that include the current project as a subproject. `linkAgainstFile` does not always match as `outfile`. For example, when compiling DLLs, the linker produces both a '`.dll`' file and a '`.lib`' file. The former contains the code, but the latter is used when linking projects that use the DLL library.

Mac OS `outfileType` and `outfileCreator` specify the file type (usually but not always '`APPL`') and the signature, respectively, for Mac OS application targets.

`debuggerCreator` specifies the signature of the application to use to debug the target executable, when the user selects **Debug** from the **Project** menu.

`runHelperCreator` specifies the signature of the run helper application to use assist in running the target executable.

**NOTE** The definition of this structure varies by platform.

See Also "CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

"linkOutputNone" on page 206

"linkOutputFile" on page 206

"linkOutputDirectory" on page 207

"Constants for Compiler and Linker Plug-ins" on page 191

## CWTargetList

Description Returns a list of supported CPUs and operating systems to the IDE.

Prototype
```
#include <DropInCompilerLinker.h>
```

```
typedef struct CWTargetList {
   short         version;
   short         cpuCount;
   CWDataType*   cpus;
   short         osCount;
   CWDataType*   oss;
} CWTargetList;
```

Fields

The fields in `CWTargetList` are:

| | |
|---|---|
| `version` | Specifies the version of this structure (different versions contain different information). To use the latest version of this structure, specify `kCurrentCWTargetListVersion` for this field. |
| `cpuCount` | Specifies the number of CPU codes in the `cpus` array. |
| `cpus` | An array of CPU codes, each specifying one target CPU. |
| `osCount` | Specifies the number of OS codes in the `oss` array. |
| `oss` | An array of OS codes, each specifying one target operating system. |

Remarks

Plug-ins use a structure of type `CWTargetList` to return information about the CPUs and operating systems they support to the IDE. The IDE uses this information to match compilers and linkers and their associated preference panels with the currently selected target linker.

`DropInCompilerLinker.h` defines valid CPU and operating system codes.

**NOTE** The IDE lets only one of `cpuCount` and `osCount` be greater than one. That is, plug-ins can indicate support for multiple CPUs or for multiple operating systems, but not for both.

See Also

"Specifying Target Platforms" in the *IDE SDK Developer's Guide*

"CWPlugin_GetTargetList Entry Point" on page 168

"CWDataType" on page 93

## CWUnmangleInfo

Description — Contains information required to unmangle a single compiler or linker symbol.

Definition

```
#include <DropInCompilerLinker.h>
typedef struct CWUnmangleInfo {
   void*           targetStorage;
   const char*     mangledName;
   char*           unmangleBuff;
   long            unmangleBuffSize;
   unsigned short  browserClassID;
   unsigned char   browserLang;
   unsigned char   filler1;
} CWUnmangleInfo;
```

Fields — The fields in `CWUnmangleInfo` include:

| | |
|---|---|
| `targetStorage` | Specifies the plug-in's target data, if available. If required, this data should have been previously set up in response to a `reqTargetLoaded` request. |
| `mangledName` | Specifies the text containing the name to unmangle, formatted as a `NULL`-terminated C string. |
| `unmangleBuff` | Provides a buffer in which the plug-in should store the unmangled name as a `NULL`-terminated C string. |
| `unmangleBuffSize` | Specifies the size of `unmangleBuff`. The plug-in should not place text larger than this size in `unmangleBuff`, including the terminating `NULL` byte. |
| `browserClassID` | Specifies the `EBrowserItem` value (that is, the type) of the item to be unmangled. |
| `browserLang` | Returns the `ELanguage` value for the source language of the symbol. The plug-in should specify the same language that was used when generating the browser data. |
| `filler1` | Reserved. Do not use. |

Remarks

The IDE uses this data structure when it calls a linker's unmangling entry point to translate a compiler or linker's internal symbol into its human-readable version.

The linker should examine the mangled name provided in `mangledName` and any information about the mangling process that the compiler or linker has retained in `targetStorage`, and store an unmangled version of the symbol name in `unmangleBuff`. The length of the unmangled symbol should not exceed the size specified in `unmangleBuffSize`, including the terminating `NULL` byte.

`browserClassID` specifies the type of the symbol being unmangled. `browserLang` specifies the source language of the symbol, as emitted by the compiler while generating browser symbols. `CompilerMapping.h` defines the possible values.

See Also

"Helper_Unmangle Entry Point" on page 171

"reqTargetLoaded" on page 219

"EBrowserItem" on page 246

"ELanguage" on page 247

# Constants for Compiler and Linker Plug-ins

This section describes the constant and predefined values in the compiler/linker plug-in API for the CodeWarrior IDE on Mac OS.

These constants are:

- `cantDisassemble`
- `cwAccessAbsolute`
- `cwAccessPathRelative`
- `cwAccessFileName`
- `cwAccessFileRelative`
- `DROPINCOMPILERLINKERAPIVERSION`
- `exelinkageFlat`
- `exelinkageOverlay1`

- exelinkageSegmented
- isPostLinker
- isPreLinker
- kCandisassemble
- kCanimport
- kCanprecompile
- kCanpreprocess
- kCompAllowDupFileNames
- kCompAlwaysReload
- kCompEmitsOwnBrSymbols
- kCompMultiTargAware
- kCompReentrant
- kCompRequiresFileListBuildStartedMsg
- kCompRequiresProjectBuildStartedMsg
- kCompRequiresSubProjectBuildStartedMsg
- kCompRequiresTargetBuildStartedMsg
- kCompRequiresTargetCompileStartedMsg
- kCompSavesDbgPreprocess
- kCompUsesTargetStorage
- kGeneratescode
- kGeneratesrsrcs
- kIgnored
- kIsMPAware
- kIspascal
- kLaunchable
- kPersistent
- kPrecompile
- kRsrcfile
- linkAllowDupFileNames
- linkAlwaysReload
- linkMultiTargAware

- linkOutputDirectory
- linkOutputFile
- linkOutputNone
- linkRequiresFileListBuildStartedMsg
- linkRequiresProjectBuildStartedMsg
- linkRequiresSubProjectBuildStartedMsg
- linkRequiresTargetBuildStartedMsg
- linkRequiresTargetLinkStartedMsg
- linkerDisasmRequiresPreprocess
- linkerGetTargetInfoThreadSafe
- linkerInitializeOnMainThread
- linkerSuggestsNonRecursiveAccessPaths
- linkerUnmangles
- linkerUsesCaseInsensitiveSymbols
- linkerUsesFrameworks
- linkerUsesTargetStorage
- linkerWantsPreRunRequest
- magicCapLinker
- reqCheckSyntax
- reqCompile
- reqCompDisassemble
- reqDisassemble
- reqFileListBuildEnded
- reqFileListBuildStarted
- reqLink
- reqPreprocessForDebugger
- reqProjectBuildEnded
- reqProjectBuildStarted
- reqSubProjectBuildEnded
- reqSubProjectBuildStarted
- reqTargetBuildEnded

- `reqTargetBuildStarted`
- `reqTargetInfo`
- `reqTargetLinkEnded`
- `reqTargetLinkStarted`
- `reqTargetLoaded`
- `reqTargetPrefsChanged`
- `reqTargetUnloaded`
- `targetCPU68K`
- `targetCPUAny`
- `targetCPUEmbeddedPowerPC`
- `targetCPUi80x86`
- `targetCPUMips`
- `targetCPUNECv800`
- `targetCPUPowerPC`
- `targetOSAny`
- `targetOSEmbeddedABI`
- `targetOSMacintosh`
- `targetOSMagicCap`
- `targetOSOS9`
- `targetOSWindows`

## cantDisassemble

Description — Specifies that a linker does *not* support disassembly.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in a linker's `DropInFlags` structure to indicate that it does not support disassembly in response to a `reqDisassemble` request.

**NOTE** Unlike most dropin flags, setting this flag indicates that the plug-in does *not* support the corresponding feature.

**CAUTION** Do not confuse `cantDisassemble` with `kCandisassemble`, which applies to compilers and has a different numeric value.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## cwAccessAbsolute

Description Specifies that a depended-upon file should be stored using its absolute path.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks Use `cwAccessPathAbsolute` in a `CWDependencyInfo` structure passed to `CWStoreObjectData` to specify that the IDE should store the dependency using a full path.

See Also "CWObjectData" on page 180

"CWStoreObjectData" on page 165

## cwAccessPathRelative

Description Specifies that a depended-upon file should be stored using a file path relative to one of the active target's access paths.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks Use `cwAccessPathRelative` in a `CWDependencyInfo` structure passed to `CWStoreObjectData` to specify that the IDE should store the dependency using a path relative to one of the project paths.

See Also "CWObjectData" on page 180

"CWStoreObjectData" on page 165

## cwAccessFileName

Description Specifies that a depended-upon file should be stored using only its file name, not its path.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks Use `cwAccessPathRelative` in a `CWDependencyInfo` structure passed to `CWStoreObjectData` to specify that the IDE should

store the dependency using only a file's name, rather than its path. This method of locating a file often fails if a project contains more than one file with the same name.

## cwAccessFileRelative

Description — Specifies that the IDE should search for a depended-upon file by using a path relative to the dependent file's path.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — Use `cwAccessFileRelative` in a `CWDependencyInfo` structure passed to `CWStoreObjectData` to specify that the IDE should store the dependency using a path relative to the dependent file.

See Also — "CWObjectData" on page 180

"CWStoreObjectData" on page 165

## DROPINCOMPILERLINKERAPIVERSION

Description — Specifies the current version of the compiler and linker plug-in API at compile time.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This predefined symbol specifies the current version of the compiler plug-in API. Use this value in a DropInFlags structure to indicate that your plug-in supports the latest plug-in API version that was available at the time it was compiled.

**NOTE** Any plug-in that uses this value automatically specifies the latest API version when the plug-in API headers change and the plug-in is recompiled. Plug-ins that depend upon older API versions should use a different fixed constant to specify the supported API version.

## exelinkageFlat

Description — Specifies that the plug-in generates an executable binary consisting of a single piece of binary code.

Definition — `#include <DropInCompilerLinker.h>`

Remarks This predefined symbol, used in the `linkType` field of the `CWTargetInfo` data structure, specifies that the linker generates executables composed of one contiguous piece of executable code, rather than multiple, independently loaded code segments or overlays.

For targets specifying this linkage type, the IDE displays files in the link order project view in a single list, without any subgroups.

See Also "CWTargetInfo" on page 183

## exelinkageOverlay1

Description Specifies that the plug-in generates an executable binary comprised of overlays.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This predefined symbol, used in the `linkType` field of the `CWTargetInfo` data structure, specifies that the linker organizes its executable file into overlays. Overlays consist of code images loaded into the same portion of physical memory under program control, to reduce memory requirements.

For targets that specify this linkage type, the IDE displays files in the link order project view as overlays. This view lets files be grouped into overlays. Overlays can be grouped into overlay groups.

See Also "CWTargetInfo" on page 183

## exelinkageSegmented

Description Specifies that the plug-in generates executable code consisting of separate code resources.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This predefined symbol, used in the `linkType` field of the `CWTargetInfo` data structure, specifies that the linker organizes an executable file into code segments. Only the Mac OS uses this setting.

For targets that specify this linkage type, the IDE displays files grouped into segments.

See Also "CWTargetInfo" on page 183

## isPostLinker

Description Specifies that a plug-in is a post-linker.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that it is a post-linker that receives IDE requests after the target linker has been run.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## isPreLinker

Description Specifies that a linker plug-in is a pre-linker.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that it is a pre-linker that receives IDE requests before the target linker runs.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## kCandisassemble

Description Specifies that a compiler supports code disassembly.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that it supports code disassembly, in response to a `reqCompDisassemble` request.

**CAUTION** Do not confuse `kCandisassemble` with `cantDisassemble`, which applies to linkers and has a different numeric value.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCanimport

Description Specifies that a compiler can import a compiled object code library.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that it imports compiled object code by adding it to the project in response to a `reqCompile` request. When this flag is set, the IDE enables the **Weak Link** checkbox in the project inspector for the file types associated with the compiler.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCanprecompile

Description Specifies that a compiler can precompile one or more of the source file types it handles.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the compiler supports precompilation of interface files, to acccelerate the compilation process. To support precompilation, plug-ins must also mark the relevant file types as precompilable.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

"Specifying File Mappings" in the *IDE SDK Developer's Guide*

## kCanpreprocess

Description Specifies that a compiler can preprocess one or more of the source file types it handles.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the compiler performs textual substitution or expansion on one or more of its file types. The plug-in then presents the results to users in a window in response to a `reqPreprocess` request.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompAllowDupFileNames

Description Specifies that a compiler can properly handle the appearance of multiple files in one target having the same name.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the compiler can handle project targets containing multiple files having the same name (but different paths). Most compilers should set this flag. In the past, some compilers used file names to construct unique symbol names, which caused problems when multiple files having the same name appeared in one target.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompAlwaysReload

Description Specifies that the IDE should reload the compiler before every request.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the compiler needs to be reloaded between requests from the IDE (except `reqInitialize` and `reqTerminate`). This setting supports compilers that have complex global state that must be reinitialized. Plug-ins generally use this setting when porting existing (often command line) tools that make heavy use of global state.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompEmitsOwnBrSymbols

Description Specifies that a compiler emits browser symbols of specialized type.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the browser symbol information generated by a compiler contains custom type codes, indicating the presence of nonstandard symbol types. When set, the IDE calls the compiler's browser symbol entry point, to obtain the names of the custom symbol types.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

"Helper_GetCompilerBrSymbols Entry Point" on page 168

## kCompMultiTargAware

Description Unused.

## kCompReentrant

Description Specifies that the compiler is reentrant and permits the IDE to issue commands to multiple instances simulaneously.

Definition `#include <CompilerMapping.h>`

Remarks This flag enables concurent compilation.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompRequiresFileListBuildStartedMsg

Description Specifies that a compiler requires the `reqFileListBuildStarted` and `reqFileListBuildEnded` requests.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that a compiler wants to receive `reqFileListBuildStarted` and `reqFileListBuildEnded` requests.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompRequiresProjectBuildStartedMsg

Description Specifies that a compiler requires the `reqProjectBuildStarted` and `reqProjectBuildEnded` requests.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that a compiler wants to receive `reqProjectBuildStarted` and `reqProjectBuildEnded` requests.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompRequiresSubProjectBuildStartedMsg

Description — Specifies that a compiler requires the `reqSubProjectBuildStarted` and `reqSubProjectBuildEnded` requests.

Definition — `#include <CompilerMapping.h>`

Remarks — This constant appears in a compiler's `DropInFlags` to indicate that a compiler wants to receive `reqSubProjectBuildStarted` and `reqSubProjectBuildEnded` requests.

See Also — "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompRequiresTargetBuildStartedMsg

Description — Specifies that a compiler requires the `reqTargetBuildStarted` and `reqTargetBuildEnded` requests.

Definition — `#include <CompilerMapping.h>`

Remarks — This constant appears in a compiler's `DropInFlags` to indicate that a compiler wants to receive `reqTargetBuildStarted` and `reqTargetBuildEnded` requests.

See Also — "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompRequiresTargetCompileStartedMsg

Description — Indicates that the compiler can receive target compile started and ended messages.

Definition — `#include <CompilerMapping.h>`

Remarks — A compiler that recognizes started and ended messages can sometimes benefit from pre-processing or post-processing after all individual compilations have been completed.

See Also — "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kCompSavesDbgPreprocess

Description — Obsolete. Do not use.

## kCompUsesTargetStorage

Description Specifies that a compiler uses target storage services.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that a compiler uses target storage facilities (`CWGetTargetStorage` and `CWSetTargetStorage`). Plug-ins use target storage to store global data that a plug-in wishes to preserve even when the IDE unloads the plug-in.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kGeneratescode

Description Specifies that a compiler generates code.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that a compiler generates object code in response to a reqCompile request and stores it in the project using `CWStoreObjectData`. The only compilers that should not set this flag are those that exclusively generate source code or resources.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kGeneratesrsrcs

Description Specifies that a compiler generates resource data.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that a compiler generates binary resource data in response to a `reqCompile` request and stores it in the project using `CWStoreObjectData`.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kIgnored

Description Specifies that a file type should be ignored by the IDE during **Make** operations.

Definition `#include <CompilerMapping.h>`

Remarks This constant indicates that, during build operations, the IDE should completely ignore the file type specified in a plug-in's file mappings.

See Also "CWPlugin_GetDefaultMappingList Entry Point" on page 167

## kLaunchable

Description Specifies a file type that may be launched directly from the project window.

Definition `#include <CompilerMapping.h>`

Remarks This constant indicates that, when the user double-clicks a file in the project window, the IDE should launch or open files specified in a plug-in's file mappings.

See Also "CWPlugin_GetDefaultMappingList Entry Point" on page 167

## kIsMPAware

Description Unused.

## kIspascal

Description Reserved.

## kPersistent

Description Specifies that the IDE should avoid unloading the compiler.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a compiler's `DropInFlags` to indicate that the compiler needs to be loaded and unloaded as infrequently as possible. Setting this flag does *not* guarantee that a plug-in remains resident for the duration of an IDE run. This is most commonly used for plug-ins that perform complex initialization tasks, to reduce the time spent initializing plug-in state.

See Also "Compiler Capability Flags" in the *IDE SDK Developer's Guide*

## kPrecompile

Description Specifies that a file type may be precompiled.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a plug-in's file mappings to indicate that the corresponding file type can be precompiled by the plug-in. Plug-ins must set this flag to receive `reqPrecompile` requests

See Also "CWPlugin_GetDefaultMappingList Entry Point" on page 167

## kRsrcfile

Description Specifies that a file type is a binary resource file.

Definition `#include <CompilerMapping.h>`

Remarks This constant appears in a plug-in's file mappings to indicate that the corresponding file type is a binary resource file, to be included in final compiled executables. Generally, only the Mac OS uses this setting.

See Also "CWPlugin_GetDefaultMappingList Entry Point" on page 167

## linkAllowDupFileNames

Description Specifies that a linker properly handles targets containing multiple files having the same name.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker supports projects containing multiple files with the same name. Most linkers should set this flag. An exception would be linkers that use a file's name to help construct unique symbol names.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Specifying File Mappings" in the *IDE SDK Developer's Guide*

## linkAlwaysReload

Description Specifies that the IDE should reload the linker before every request.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that the linker needs to be reloaded between requests from the IDE (except `reqInitialize` and `reqTerminate`). This setting supports linkers that have complex global state that must be reinitialized. Plug-ins generally use this setting when porting existing (often command line) tools that make heavy use of global state.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkMultiTargAware

Description Specifies that a linker wishes to be reloaded every time the project target changes.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqInitialize` and `reqTerminate` requests every time the current project target changes. When this flag is *clear*, the IDE sends the requests. When this flag is set, the IDE does *not* send the requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkOutputNone

Description Specifies that the linker produces no final target binaries.

Definition `#include <DropInCompilerLinker.h>`

Remarks This predefined symbol, used in the `outputType` field of the `CWTargetInfo` data structure, specifies that the linker produces no binary output file.

See Also "CWTargetInfo" on page 183

## linkOutputFile

Description Specifies that the linker produces a file.

Definition `#include <DropInCompilerLinker.h>`

Remarks This predefined symbol, used in the `outputType` field of the `CWTargetInfo` data structure, specifies that the linker produces a file.

See Also "CWTargetInfo" on page 183

## linkOutputDirectory

Description Specifies that the linker produces a directory and one or more files within the directory.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This predefined symbol, used in the `outputType` field of the `CWTargetInfo` data structure, specifies that the linker produces a directory containing target files.

See Also "CWTargetInfo" on page 183

## linkRequiresFileListBuildStartedMsg

Description Specifies that a linker requires `reqFileListBuildStarted` and `reqFileListBuildEnded` requests.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqFileListBuildStarted` and `reqFileListBuildEnded` requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## linkRequiresProjectBuildStartedMsg

Description Specifies that a linker requires `reqProjectBuildStarted` and `reqProjectBuildEnded` requests.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqProjectBuildStarted` and `reqProjectBuildEnded` requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## linkRequiresSubProjectBuildStartedMsg

Description Specifies that a linker requires `reqSubProjectBuildStarted` and `reqSubProjectBuildEnded` request.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqSubProjectBuildStarted` and `reqSubProjectBuildEnded` requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## linkRequiresTargetBuildStartedMsg

Description Specifies that a linker requires `reqTargetBuildStarted` and `reqTargetBuildEnded` request.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqTargetBuildStarted` and `reqTargetBuildEnded` requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## linkRequiresTargetLinkStartedMsg

Description Specifies that a linker requires `reqTargetLinkStarted` and `reqTargetLinkEnded` request.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that a linker wants to receive `reqTargetLinkStarted` and `reqTargetLinkEnded` requests.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## linkerDisasmRequiresPreprocess

Description Obsolete. Do not use.

## linkerGetTargetInfoThreadSafe

Description Specifies that a linker implements the `reqTargetInfo` request in a thread-safe manner.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate whether the linker is thread safe.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Providing Target Information" in the *IDE SDK Developer's Guide*

## linkerInitializeOnMainThread

Description Specifies that a linker must initialize on the main thread.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that the linker must initialize on the main thread.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkerSuggestsNonRecursiveAccessPaths

Description When off, the IDE creates a new access path. When on, it recurses access paths.

Definition `#include <CompilerMapping.h>`

Remarks — On Mac and Windows, the default is for new paths to have the recursive flag on.

See Also — "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkerUnmangles

Description — Specifies that a linker supports name unmangling.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in a linker's `DropInFlags` to indicate that a linker exports a name unmangling entry point, for converting mangled identifiers back into human-readable form.

See Also — "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"Linker Symbol Unmangling Entry Point" in the *IDE SDK Developer's Guide*

## linkerUsesCaseInsensitiveSymbols

Description — If this flag is on, browser symbols do not consider case. If it is off, browser symbols consider case.

Definition — `#include <CompilerMapping.h>`

Remarks — Use this flag to specify whether to use case-sensitive or -insensitive browser symbols.

See Also — "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkerUsesFrameworks

Description — Setting this flag enables IDE handling of frameworks in the MacOS X Mach-o target.

Definition — `#include <CompilerMapping.h>`

Mac OS — This flag only applies to the mach-o target.

Remarks — Use this flag to specify whether the IDE should handle frameworks in the MacOS X Mach-o target.

See Also — "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## linkerUsesTargetStorage

Description Specifies that a linker uses target storage.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that the linker uses target storage, by calling `CWGetTargetStorage` and `CWSetTargetStorage`.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

"CWGetTargetStorage" on page 154

"CWSetTargetStorage" on page 164

"Managing Target Storage" in the *IDE SDK Developer's Guide*

## linkerWantsPreRunRequest

Description Specifies that a linker wants to receive a reqPreRun request.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in a linker's `DropInFlags` to indicate that it want to receive the `reqPreRun` request, prior to launch of the target executable.

See Also "Linker Capability Flags" in the *IDE SDK Developer's Guide*

## magicCapLinker

Description Obsolete. do not use.

## reqCheckSyntax

Description Reserved for use by Metrowerks.

## reqCompile

Description Asks a compiler plug-in to compile a project file into object data, resource data, or source code text.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request when compiling a source file, as part of a **Compile**, **Make**, **Bring Up To Date**, **Check Syntax**, **Preprocess**, or **Precompile** operation. To determine which file should be compiled, use `CWGetMainFileID`, `CWGetMainFileSpec`, or `CWGetMainFileText`.

See Also "Compiling" in the *IDE SDK Developer's Guide*

"CWGetMainFileID" on page 145

"CWGetMainFileSpec" on page 147

"CWGetMainFileText" on page 147

"CWStoreObjectData" on page 165

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqCompDisassemble

Description Asks a compiler plug-in to convert binary object code into human-readable text.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request when the user chooses **Disassemble** from the **Project** menu. To determine which file should be disassembled, use `CWGetMainFileID` or `CWGetMainFileSpec`.

The IDE only sends this request if the compiler plug-in specifies that it handles disassembly in its `'Flag'` resource by setting the `kCandisassemble` flag.

See Also "Disassembling" in the *IDE SDK Developer's Guide*

"`'Flag'` Resource" in the *IDE SDK Developer's Guide*

"CWGetMainFileID" on page 145

"CWGetMainFileSpec" on page 147

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqDisassemble

Description Asks a linker to generate human-readable text from object data.

Definition
```
#include <DropInCompilerLinker.h>
```

The IDE sends this request when the user chooses **Disassemble** from the **Project** menu. To determine which file should be disassembled, use `CWGetMainFileID` or `CWGetMainFileSpec`.

The IDE only sends this request if the linker plug-in specifies that it handles disassembly in its `'Flag'` resource by setting the `cantDisassemble` flag.

To determine which file must be disassembled, use `CWGetMainFileID`. To obtain the object code for the file to be disassembled, use `CWLoadObjectData`.

See Also "Disassembling" in the *IDE SDK Developer's Guide*

"CWGetMainFileID" on page 145

"CWLoadObjectData" on page 161

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqFileListBuildEnded

Description The IDE sends this request at the end of a **Compile** operation.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks The IDE sends this request when it has finished compiling one or more files manually compiled by the user (that is, files compiled using **Compile**, rather than **Make**).

The IDE sends this request only once, at the end of a **Compile** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqFileListBuildStarted" on page 214

"reqProjectBuildEnded" on page 215

## reqFileListBuildStarted

Description The IDE sends this request after the user selects the **Compile** command and before compiling any files.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks The IDE sends this request prior to compiling files when the user selects the **Compile** command.

The IDE sends this request only once, at the start of a **Compile** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqFileListBuildEnded" on page 213

"reqProjectBuildStarted" on page 215

## reqLink

Description Asks a linker plug-in to produce a final output file.

Definition
```
#include <DropInCompilerLinker.h>
```

The IDE sends this request when the user chooses **Make** from the **Project** menu. The IDE uses this request to link the active target's object data into a final library or executable.

See Also "Linking" in the *IDE SDK Developer's Guide*

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqMakeParse

Description Reserved.

## reqPreprocessForDebugger

Description Obsolete.

## reqPreRun

Description Informs a linker or post-linker that the final target executable is about to be launched.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks The IDE issues this request prior to executing the target binary or any specified helper applications.

See Also "CWTargetInfo" on page 183

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqProjectBuildEnded

Description The IDE sends this request after completing a build operation initiated by the **Make** command.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks The IDE sends this request after compiling all files in a project, when the compilation occurred as a result of a **Make** command (rather than a **Compile** command).

The IDE sends this request only once at the end of a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqProjectBuildStarted" on page 215

"reqFileListBuildEnded" on page 213

## reqProjectBuildStarted

Description The IDE sends this request prior to compiling any files when the user selects **Make**.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request before compiling files in response to the user selecting **Make**.

The IDE sends this request only once at the start of a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqProjectBuildEnded" on page 215

"reqFileListBuildStarted" on page 214

## reqSubProjectBuildEnded

Description The IDE sends this request after completing a build of a subproject, when compilation was initiated by the **Make** command.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request at the completion of a subproject **Make** operation.

The IDE sends one pair of `reqSubProjectBuildStarted` / `reqSubProjectBuildEnded` requests for each subproject encountered during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqSubProjectBuildStarted" on page 216

## reqSubProjectBuildStarted

Description The IDE sends this request prior to compiling a subproject when compilation was initiated by the **Make** command.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request when prior to compiling any files in a subproject during a **Make** operation.

The IDE sends one pair of `reqSubProjectBuildStarted` / `reqSubProjectBuildEnded` requests for each subproject encountered during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqSubProjectBuildEnded" on page 216

## reqTargetBuildEnded

Description The IDE sends this request after compiling a target as part of a **Make** operation.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks The IDE sends this request after compiling all files in a target during a **Make** operation.

The IDE sends one pair of `reqTargetBuildStarted` / `reqTargetBuildEnded` requests for each target encountered during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqTargetBuildStarted" on page 217

## reqTargetBuildStarted

Description The IDE sends this request prior to compiling a target as part of a **Make** operation.

Definition
```
#include <DropInCompilerLinker.h>
```

The IDE sends this request before compiling any files in a target during a **Make** operation.

The IDE sends one pair of `reqTargetBuildStarted` / `reqTargetBuildEnded` requests for each target encountered during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

"reqTargetBuildEnded" on page 217

## reqTargetCompileEnded

Description The IDE sends this request when a target's compile phase ends.

Defintion `#include <CompilerMapping.h>`

Remarks The IDE enables this request flag when it sets the kCompRequiresTargetCompileStartedMsg flag.

See Also "reqTargetCompileStarted" on page 218

## reqTargetCompileStarted

Description The IDE sends this request when a target's compile phase begins.

Definition `#include <CompilerMapping.h>`

Remarks The IDE enables this request flag when it sets the kCompRequiresTargetCompileStartedMsg flag.

See Also "reqTargetCompileEnded" on page 218

## reqTargetInfo

Description Asks a linker plug-in to describe the output it creates.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE uses this request to get information about the linker's output. When it receives this request, the linker should fill out a `CWTargetInfo` structure and call `CWSetTargetInfo`.

See Also "Providing Target Information" in the *IDE SDK Developer's Guide*

"CWSetTargetInfo" on page 163

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqTargetLinkEnded

Description The IDE sends this request after linking a target as part of a **Make** operation.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request after linking a target during a **Make** operation.

The IDE sends one pair of `reqTargetLinkStarted` / `reqTargetLinkEnded` requests for each target linked during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## reqTargetLinkStarted

Description The IDE sends this request prior to linking a target as part of a **Make** operation.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request prior to linking a target during a **Make** operation.

The IDE sends one pair of `reqTargetLinkStarted` / `reqTargetLinkEnded` requests for each target linked during a **Make** operation.

See Also "Additional Compiler and Linker Requests" in the *IDE SDK Developer's Guide*

## reqTargetLoaded

Description Tells the plug-in to allocate and set its target storage.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request when switching targets, to tell the plug-in to allocate its target storage. The IDE sends this request only if the plug-in has set the `kCompUsesTargetStorage` or `linkerUsesTargetStorage` flag in its `'Flag'` resource.

A plug-in allocates target storage by calling `CWAllocateMemory`. A plug-in then calls `CWSetTargetStorage` to pass the pointer back to the IDE. During subsequent requests from the IDE, a plug-in may call `CWGetTargetStorage` to retrieve the stored target data.

See Also

"CWGetTargetStorage" on page 154

"CWSetTargetStorage" on page 164

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqTargetPrefsChanged

Description

Tells the plug-in that the active target's settings data has changed.

Definition

```
#include <DropInCompilerLinker.h>
```

Remarks

Upon receiving a `reqTargetPrefsChanged`, a plug-in retrieves its target-related data with `CWGetTargetStorage`. After updating its data, the plug-in should return the new data to the IDE by calling `CWSetTargetStorage`. If the plug-in's target-related data does not depend on target settings, the plug-in can ignore this request.

The IDE sends this request only if the plug-in has set the `kCompUsesTargetStorage` or `linkerUsesTargetStorage` flag in its `'Flag'` resource.

After completing a request, the plug-in should call `CWDonePluginRequest` before returning execution to the IDE.

See Also

"`'Flag'` Resource" in the *IDE SDK Developer's Guide*

"CWSetTargetStorage" on page 164

"CWGetTargetStorage" on page 154

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## reqTargetUnloaded

Description

Tells the plug-in to release its target storage.

Definition `#include <DropInCompilerLinker.h>`

Remarks The IDE sends this request when switching targets, to tell the plug-in to release its target storage. The IDE sends this request only if the plug-in has set the `kCompUsesTargetStorage` or `linkerUsesTargetStorage` flag in its `'Flag'` resource.

Upon receiving a `reqTargetUnloaded` request, a plug-in retrieves its target-related data by calling `CWGetTargetStorage`. If the target-related data was allocated using `CWAllocateMemory`, the plug-in should call `CWFreeMemory` to release it. The plug-in should then call `CWSetTargetStorage` with a `NULL` target storage pointer to ensure that the stale target storage pointer is not subsequently used by the plug-in.

See Also "`'Flag'` Resource" in the *IDE SDK Developer's Guide*

"CWGetTargetStorage" on page 154

"CWSetTargetStorage" on page 164

"CWGetPluginRequest" on page 66

"CWDonePluginRequest" on page 45

## targetCPU68K

Description Specifies that the linker generates software for MC680x0 processors.

Definition `#include <DropInCompilerLinker.h>`

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for a MC680x0 processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUAny

Description — Specifies that the linker generates output that is not processor-specific.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates output for any processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUEmbeddedPowerPC

Description — Specifies that the linker generates software for embedded PowerPC processors.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for embedded PowerPC processors. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUi80x86

Description — Specifies that the linker generates software for an Intel x86-compatible processor.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for an Intel x86-compatible processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUMips

Description Specifies that the linker generates software for a MIPS processor.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for a MIPS processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUNECv800

Description Specifies that the linker generates software for a NEC v800 processor.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for a NEC v800 processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetCPUPowerPC

Description — Specifies that the linker generates software for a desktop PowerPC processor.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for a desktop PowerPC processor. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSAny

Description — Specifies that the linker generates output that is not for a specific operating system.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates output that isn't for a specific operating system. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSEmbeddedABI

Description — Specifies that the linker generates software that conforms to an embedded system's application binary interface.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software that conforms to an embedded system's application binary interface. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSMacintosh

Description — Specifies that the linker generates software for the Mac OS.

Definition — `#include <DropInCompilerLinker.h>`

Remarks — This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for the Mac OS. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also — "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSMagicCap

Description — Specifies that the linker generates software for General Magic's Magic Cap operating system.

Definition — `#include <DropInCompilerLinker.h>`

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for Magic Cap. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSOS9

Description Specifies that the linker generates software for Microware's OS-9 operating system.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for Microware's OS-9 operating system. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also "CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

## targetOSWindows

Description Specifies that the linker generates software for the Microsoft Windows operating system.

Definition
```
#include <DropInCompilerLinker.h>
```

Remarks This constant appears in the `targetCPU` field of a `CWTargetInfo` structure when calling `CWGetTargetInfo` or `CWSetTargetInfo` to specify that a linker generates software for the Microsoft Windows operating system. It may also be returned in the `CWTargetList` structure by the CWPlugin_GetDefaultMappingList Entry Point.

See Also
"CWTargetInfo" on page 183

"CWGetTargetInfo" on page 153

"CWSetTargetInfo" on page 163

# Result Codes for Compiler and Linker Plug-ins

There are two compiler and linker specific error codes:

- `cwErrObjectFileNotStored`
- `cwErrUnknownSegment`

**NOTE** This section provides literal values only for reference. These values do not appear in the headers. Always use constants rather than the literal values in plug-in code.

## cwErrObjectFileNotStored

Description
No object code exists for this file.

Definition
```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrObjectFileNotStored = 515,
   /* ... */
};
```

Remarks
Returned by

## cwErrUnknownSegment

Description — The plug-in has specified a segment that does not exist.

Definition

```
#include <CWPluginErrors.h>
enum
{
   /* ... */
   cwErrUnknownSegment = 513,
   /* ... */
};
```

Remarks — `CWGetSegmentInfo` returns this error when the index supplied is out of range.

# 5

# Browser Reference

This section documents the data structures and predefined symbols used in the browser data for the CodeWarrior IDE class browser.

- Browser Records—describes the format of a browser record, the unit used to describe a browsable item in source code.
- Data Structures for the Browser—describes the data structures used by the API to format data for the class browser.
- Constants for the Browser—describes the constant values used by the API to support the class browser.

For information on how to store browser data, see the *IDE SDK Developer's Guide*.

**TIP** To examine a plug-in's browser data output for debugging purposes, use the **Dump internal browse information after compile** checkbox in the **Build Extras** settings panel.

## Browser Records

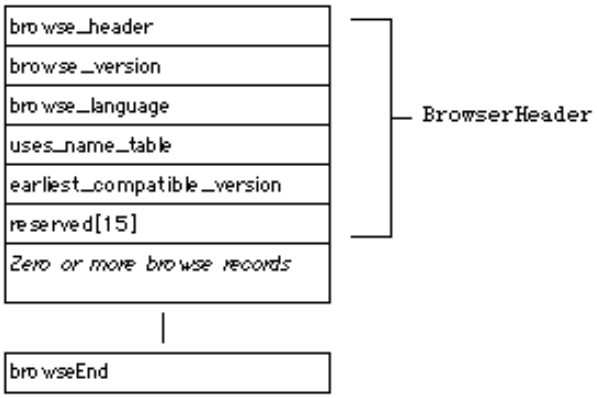
Compilers store browser data as a sequence of variable size records. This data is stored in the `browsedata` field of the `CWObjectData` structure passed to the IDE when calling `CWStoreObjectData`. Browser data describes the symbols found by a compiler during compilation of source text. The IDE displays this information in the **Browser Contents**, **Class Hierarchy**, and **Class Browser** windows, accessible under the **Windows** menu.

**NOTE** The IDE enables browser capabilities only when **Activate Browser** is checked in **Target Settings > Build Extras**.

## Browse Header

The browser data stream starts with a `BrowseHeader`, which describes the browser data to the IDE.

**Figure 5.1 Browser data organization**




The following table describes the browser data fields:

| Field | Description |
|---|---|
| `browse_header` | 4 bytes—Contains the arbitrary value `BROWSE_HEADER`, which indicates to the IDE that the browser data stream is valid. |
| `browse_version` | 4 bytes—Indicates the version of the browser data stream. This number changes as the browser data stream format is revised. Plug-ins should normally specify the latest stream format, using `BROWSE_VERSION`. |
| `browse_language` | 2 bytes—Specifies the language of the source file from which the browser symbol information was derived. See ELanguage for valid values. |
| `uses_name_table` | 2 bytes—Reserved for Metrowerks internal use. Plug-ins should always set this field to zero. |
| `earliest_compatible_version` | |

| Field | Description |
|---|---|
| | 4 bytes—This field specifies the earliest browser stream format that this browser data is compatible with. Plug-ins should normally store the value `BROWSE_EARLIEST_COMPATIBLE_VERSION` in this field. |
| `reserved` | 60 bytes—15 four-byte integers reserved for future use. Plug-ins should set all 15 to zero. |

**NOTE** The value of the `earliest_compatible_version` field typically matches the value specified in `browse_version`.

The browser data stream ends with a single byte containing the value `browseEnd`. `browseEnd` is defined in the `EBrowserItem` enumeration.

## Browser Data Stream

As illustrated in Figure 5.1, the header is followed by one variable-length record for each browsable item. Symbol records need not be presented in any particular order.

Browser records for individual symbols have variant definition, depending upon the symbol type. All symbol records start with common fields, with type-specific fields following.

**NOTE** Browser data consists of records of variable size, without padding. Thus, the alignment of browser information varies and need not be aligned on host CPU word boundaries.

The rest of this section discusses:

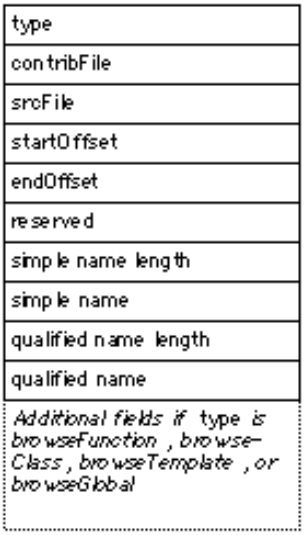
- Fields For All Records
- Additional Fields For Functions
- Additional Fields For Classes

- Additional Field For Templates
- Additional Field For Global Variables

## Fields For All Records

The common fields for all records describe the symbol's type, its point of declaration, and its name.

**Figure 5.2 A browser record**



| Field | Description |
|---|---|
| `type` | 1 byte—Every record begins with the *type* field. This field specifies the type of item being described. The valid types are described in "EBrowserItem" on page 246.<br><br>This field can also be set to a custom type, if a plug-in generates symbol records for nonstandard types of symbols. Custom type values should be assigned consecutively beginning with `browseCompSymbolStart`. See the *IDE SDK Developer's Guide* for more information. |
| `contribFile` | 2 bytes—The file number of the file that should be considered the contributor of the item. For all record types except templates, this should be the same file as specified in *`srcFile`*. This must be a valid file number as returned by `CWFindAndLoadFile`.<br><br>`contribFile` specifies the file contributing a fully-specified declaration of this syntactic entity. In the case of templates, this is the file in which the template was instantiated, rather than the header in which the generic template definition appears.<br><br>The IDE uses this field when updating its internal browser information database. If `contribFile` is recompiled, the IDE will look for any items originally contributed by `contribFile` which don't appear in the newly generated browser data stream. These items will be removed from the IDE's database. |
| `srcFile` | 2 bytes—The file number of the file containing the item's declaration. This must be a valid file number returned by `CWFindAndLoadFile`. |
| `startOffset` | 4 bytes—The zero-based offset of the start of the item's location in *`srcFile`*. Use `-1` to indicate an unknown or not-applicable offset. |

| Field | Description |
|---|---|
| `endOffset` | 4 bytes—The zero-based offset of the start of the item's location in *`srcFile`*. Use `-1` to indicate an unknown or not-applicable offset. |
| `reserved` | 4 bytes—Reserved for future use, must be zero. |
| `simple name length` | 2 bytes—Length of following simple item name, excluding the terminating null character. |
| `simple name` | variable length—The simple, unqualified name of the item as a variable-length, null-terminated C string. The length of this string is specified in *`simple name length`*. The simple name of an item is the identifier by which it is normally specified in its parent language. It is the name a programmer would type to refer to the item. |
| `qualified name length` | 2 bytes—Length of following qualified item name, excluding the terminating null character. Can be zero. |
| `qualified name` | variable length—The qualified name of the item as a variable-length, null-terminated C string. The length of this string is specified in *`qualified name length`*. This string is not stored if the *`qualified name length`* is zero. |

For an example of how simple names relate to qualified names, consider the following declaration:

**Listing 5.1 Simple name versus qualified name example**

```
class CExampleClass
{
public:
   CExampleClass ();
   virtual ~CExampleClass ();

   int test (int A);
   int test (int A, int B);
};
```

The simple, unqualified name of both methods named `test` is "`test`". As this example shows, simple names need not be unique.

The qualified name of an item specifies it uniquely, usually by including scope information, and any necessary distinguishing information within its scope. In listing 5.1, the first of the two overloaded `test` methods might have a qualified name of "`CExampleClass::test (int A)`". The second `Foo` method might have a qualified name of "`CExampleClass::test (int A, int B)`". The qualified names could also be "mangled" names.

The IDE places no restrictions on the content of a qualified name, but it should uniquely identify its associated symbol. The IDE uses the qualified name when searching for symbols in its internal browser symbol database, such as when adding and deleting symbols from the database. Qualified names for the same symbol should be consistent across compiles.

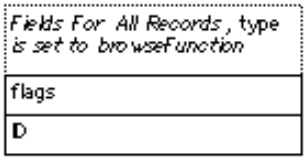
If `type` is `browseMacro`, `browseEnum`, `browseConstant`, `browseTypedef`, `browsePackage`, or a compiler-specific browser symbol, then no additional fields are required for the browser record.

If `type` is `browseFunction`, `browseClass`, `browseTemplate`, or `browseGlobal`, then the record requires additional data, described here.

- "Additional Fields For Functions" on page 236—Additional fields for the `browseFunction` type of browser record.
- "Additional Fields For Classes" on page 237—Additional fields for the `browseClass` type of browser record.
- "Additional Field For Templates" on page 242—Additional fields for the `browseTemplate` type of browser record.
- "Additional Field For Global Variables" on page 242—Additional fields for the `browseGlobal` type of browser record.

# Additional Fields For Functions

**Figure 5.3 A browse record for a function**




For a list of fields required for all browser records, see “Fields For All Records” on page 232.

The following table describds additional data for `browseFunction` records:

| Field | Description |
|---|---|
| `flags` | 4 bytes—Specifies properties of the function. See listing 5.2 for the available flags. Flags may be combined. |
| `ID` | 4 bytes—The member function ID for this function, so it can be matched with the class’ member function information. Store zero if this is not a member function. |

**Listing 5.2 Function flags listing**

```
enum
{
  kStatic = 2,      /* Static routine        */
  kMember = 8,      /* Class member function */
  kInline = 0x80,   /* In line routine       */
  kPascal = 0x100,  /* Pascal routine        */
  kAsm    = 0x200   /* Assembly routine      */
};
```

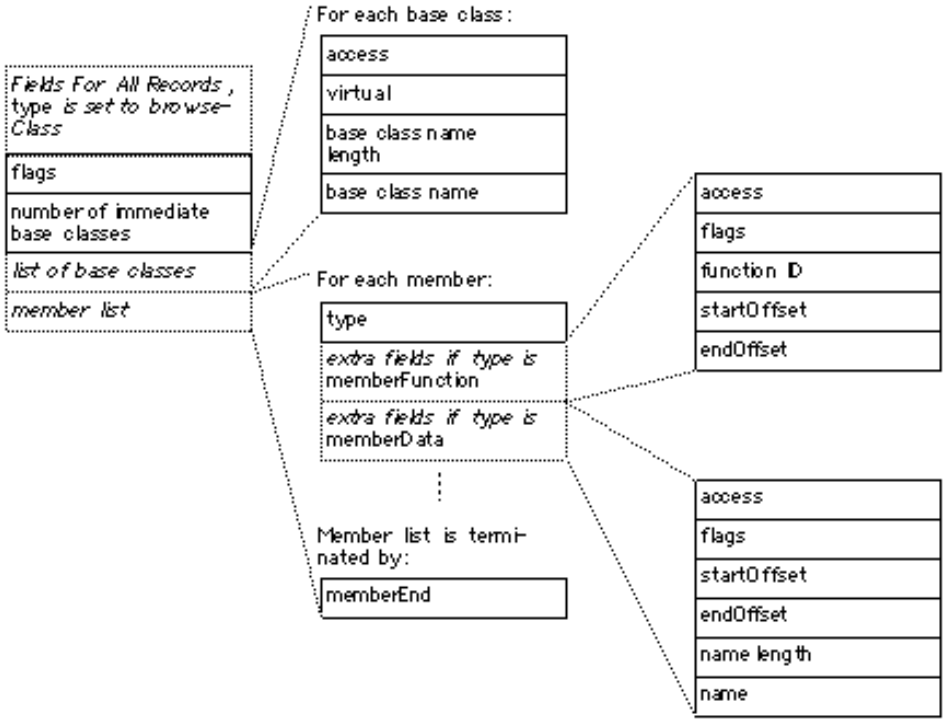
Member function IDs uniquely identify the member functions of classes and appear in the Additional Fields For Classes. Member function IDs should be assigned starting with 1 and incremented for each subsequent member function. However, the order does not matter, and the numbers may change from compilation to the next.

## Additional Fields For Classes

Browser records for classes include additional information, including superclasses, data members, member functions, member access, and the source locations of member declarations.

As illustrated in Figure 5.4, the browse data for a class starts with the usual information common to all browser records. Subsequent portions of the data include fixed-size class information, a variable-length base class list, and a variable-length member list.

**Figure 5.4 A browse record for a class**




**NOTE** The count provided in the class information determines the base class list length, The presence of the `memberEnd` sentinel value determines the length of the member list.

For a list of fields required for all browser records, see “Fields For All Records” on page 232.

The additional data for `browseClass` records includes:

| Field | Description |
|---|---|
| flags | 4 bytes—Specifies properties of the class as a whole. See listing 5.3 for valid flag values. Flags can be combined. |
| number of immediate base classes | 1 byte—Specifies the number of classes this class inherits from. |

Listing 5.3 shows the enumeration that defines the class flags data:

**Listing 5.3 Class flags listing**

```
enum
{
  kAbstract   = 1,              /* Abstract class */
  kFinal      = 4,                 /* Final class */
  kInterface  = 0x80,           /* Java interface */
  kPublic     = 0x100        /* Public Java class */
};
```

The count of base classes is immediately followed by one record for each class. Base class information should be omitted if there are no base classes. The following table shows the data contained in base class records:

| Field | Descrption |
|---|---|
| access | 1 byte—Specifies the scoping relationship between this base class and the class inheriting from it. For valid values, see “EAccess” on page 245. |
| virtual | 1 byte—Specifies whether this base class is virtual. True if this is a virtual base class. |

| Field | Descrption |
|---|---|
| base class name length | 2 bytes—Specifies the length of the following base class name, excluding the terminating null character. |
| base class name | variable length—Specifies the mangled or qualified name of this base class, terminated with a null character. |

### Class Member List

For each member of the class, one class member record should follow the base class records (if any). The class member record varies according to the member type (method or data member).

The member list for each class contains a variable-length list of class members. The member list should contain only the data members and methods declared by the current class. The member list should not include inherited members and methods.

Each member record contains the following:

| Field | Description |
|---|---|
| type | 1 byte—The type of class member. For valid values, see "EMember" on page 248. When type is `memberFunction` or `memberData`, additional data follows. A type value of `memberEnd` signals the end of the member list for the current class. |
| The additional data for `memberFunction` is: | |
| access | 1 byte—Specifies the scope of this member function. For valid values, see "EAccess" on page 245. |
| flags | 4 bytes—Specifies properties of this member function. See listing 5.4 for valid flag values. Flags may be combined. |

| Field | Description |
|---|---|
| function ID | 4 bytes—The ID of this member function. The IDE uses member function IDs to match function records found elsewhere in the browser data stream with method entries in class records. Method entries in class information minimally describe a method, and "point" to additional information in a corresponding function record using the function ID.<br><br>Function IDs must be unique and non-zero. Function IDs should be assigned to method functions – and their corresponding class method entries – starting with 1, incrementing sequentially. Function IDs can vary from compile to compile. Functions referred to by ID in a class member function entry need not appear in the browser stream before the class record. |
| startOffset | 4 bytes—Zero-based offset from the start of the class declaration file (the `srcFile` specified for the class). The offset specifies the location of the member function's declaration within its class declaration. |
| endOffset | 4 bytes—Zero-based offset from the start of the class declaration file (`srcFile`) of the end of the method's declaration. If the member function is defined inline in the class declaration, then the range includes the definition. |
| The additional data for `memberData` is: | |
| access | 1 byte—Specifies the scope of this data member. For valid values, see "EAccess" on page 245. |
| flags | 4 bytes—Specifies properties of this data member. See listing 5.5 for valid flag values. Flags may be combined |
| startOffset | 4 bytes—Zero-based offset from start of the class declaration file (`srcFile`) to the beginning of the data member declaration. |

| Field | Description |
|---|---|
| endOffset | 4 bytes—Zero-based offset from start of the class declaration file (`srcFile`) to the end of the data member declaration. |
| name length | 2 bytes—Length of following name, not including the terminating null character. |
| name | Variable length—Name of data member, terminated with a null character. |

Listing 5.4 shows the enumeration that defines member function flags.

**Listing 5.4 Member function flags listing**

```
enum
{
  kAbstract= 1,          /* Abstract/pure virtual */
  kStatic= 2,        /* Static member or function */
  kFinal= 4,    /* Final Java class/method/member */
  kVirtual= 0x400,     /* Virtual member function */
  kCtor= 0x800,                /* Is constructor */
  kDtor= 0x1000,                /* Is destructor */
  kNative= 0x2000,          /* Native Java method */
  kSynch= 0x4000,     /* Synchronized Java method */
};
```

Listing 5.5 shows the enumeration that defines class flags.

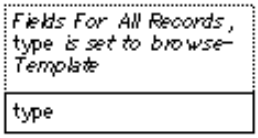
**Listing 5.5 Class flags listing**

```
enum

                {
  kStatic = 2,           /* static member */
  kFinal= 4,             /* final Java class/method/member */
  kTransient = 0x80,     /* transient Java member */
  kVolatile = 0x100,     /* volatile Java or C++ member */
};
```

## Additional Field For Templates

**Figure 5.5 A browse record for templates**

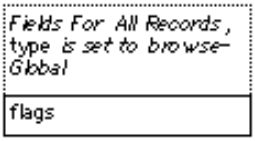



For a list of fields required for all browser records, see “Fields For All Records” on page 232.

The additional data for records of type `browseTemplate` consists of a single byte, called `type`. This value specifies the type of the template, as either a class or a function. For valid values, see “ETemplateType” on page 249.

## Additional Field For Global Variables

**Figure 5.6 A browse record for a global variable**




For a list of fields required for all browser records, see “Fields For All Records” on page 232.

Global variables require one additional field, called `flags`. This field contains four bytes. The four bytes contain a bit flag that specify whether the global variable is static. See listing 5.6 for valid flag values.

**Listing 5.6 Global variable types listing**

```
enum
{
  kStatic = 2,                  /* Static global */
};
```

# Data Structures for the Browser

The plug-in API header `'MWBrowse.h'` defines the `BrowseHeader` data structure. The IDE uses the `BrowseHeader` structure when generating browser data:

## BrowseHeader

Description — Describes a browser data stream.

Prototype

```
#include <MWBrowse.h>
typedef struct BrowseHeader {
   long           browse_header;
   long           browse_version;
   short          browse_language;
   short          uses_name_table;
   long           earliest_compatible_version;
   long           reserved[15];
} BrowseHeader;
```

Fields — The following table describes the fields in `BrowseHeader`:

| | |
|---|---|
| `browse_header` | Contains the value of `BROWSE_HEADER`. This field contains distinctive value used by the IDE to ensure that the browser data stream is valid. |
| `browse_version` | Indicates the format of the browser data stream. Currently, compilers should store `BROWSE_VERSION` in this field. |
| `browse_language` | Specifies the language of the source file for which the browser data was generated. “ELanguage” on page 247 lists valid language values. |
| `uses_name_table` | If the compiler stores true in this field, the compiler uses the CodeWarrior object code name table. Non-Metrowerks compilers should set this field to false. |

| | |
|---|---|
| `earliest_compatible_version` | Specifies the earliest version of the browser data stream format with which this data is compatible. Plug-ins should use `BROWSE_EARLIEST_COMPATIBLE_VERSION` for this field, which will usually be the same as `BROWSE_VERSION`. |
| `reserved[15]` | Reserved. Set this value to zero. |

Remarks

All browser data streams must start with a single `BrowseHeader`. The header describes properties of the stream to the IDE.

A valid browser data stream starts with a single `BrowseHeader`, followed by additional variable-length data records. Each record describes a single browsable item (class, function, global variable, or other browser-supported source element).

See Also

"Browser Records" on page 229

"BrowseHeader" on page 243

# Constants for the Browser

This section documents the constants and enumerations defined in `'MWBrowse.h'`:

- `BROWSE_EARLIEST_COMPATIBLE_VERSION`
- `BROWSE_HEADER`
- `BROWSE_VERSION`
- EAccess
- EBrowserItem
- ELanguage
- EMember
- ETemplateType

## BROWSE_EARLIEST_COMPATIBLE_VERSION

Description

Specifies the earliest version of the browser stream format with which this data is compatible.

Prototype `#include <MWBrowse.h>`

Remarks A compiler stores this value in the `earliest_compatible_version` field in the `BrowseHeader` data structure. Usually, the value of this define matches the value of `BROWSE_VERSION`.

## BROWSE_HEADER

Description An arbitrary 64-bit signature, marking the start of a browse data stream, used by the IDE to ensure the validity of browser data.

Prototype `#include <MWBrowse.h>`

Remarks A compiler stores this value used in the `browser_header` field in the `BrowseHeader` data structure.

## BROWSE_VERSION

Description Specifies the version of the browser data at compile time.

Prototype `#include <MWBrowse.h>`

Remarks This predefined symbol specifies the current version of the browser API. At compile time use this symbol to determine which data structures and constants are available at compile time.

Also, store this value in the `browse_version` field of a `BrowseHeader` data structure.

## EAccess

Description Specifies the types of access to a class member.

Prototype `#include <MWBrowse.h>`

Values The following table describes the meanings of the enumerated values in `EAccess`:

| | |
|---|---|
| `accessNone` | The item isn't accessible. Plug-ins rarely use this setting. |
| `accessPrivate` | The item is accessible only from other members in the same class, but not in its descendents. |

| | |
|---|---|
| accessProtected | The item is accessible from other members in the same class and from members in derived classes. |
| accessPublic | The item is accessible from both inside and outside the class. |
| accessAll | The item can be accessed in any way (private, protected, and public). This value usually serves as a mask for the bits specifying member access, not as a valid access value. |

See Also "Additional Fields For Classes" on page 237

## EBrowserItem

Description Specifies the type of item described in a browser record.

Prototype `#include <MWBrowse.h>`

Values The following table describes the enumerated values in `EBrowserItem`:

| | |
|---|---|
| browseFunction | The browser record describes a function, procedure, or class method. |
| browseGlobal | The browser record describes a global variable. |
| browseClass | The browser record describes a class, struct, union, or Java interface. |
| browseMacro | The browser record describes a macro. |
| browseEnum | The browser record describes an enumerated type. |
| browseTypedef | The browser record describes a user-defined type other than a class, struct, union, or Java interface (usually a scalar, pointer, or array type). |

| | |
|---|---|
| `browseConstant` | The browser record describes a constant definition. |
| `browseTemplate` | The browser record describes a C++ template. |
| `browsePackage` | The browser record describes a Java package. |
| `browseCompSymbolStart` | Use this as the first value to describe a compiler-specific browser item in a browser record. Subsequent types of compiler-specific browser items should use the values `browseCompSymbolStart+1`, `browseCompSymbolStart+2`, and so on. See the *IDE SDK Developer's Guide* for more information on generating compiler-specific browser symbols. Records for custom compiler-specific symbol types contain no additional fields beyond those described in "Fields For All Records" on page 232. |
| `browseEnd` | Use this value to mark the end of the list of browser records. |

Remarks The `EBrowserItem` enumeration lists the kinds of items that can be described in a browser record. All browser records start with an `EBrowserItem` value, which specifies the layout of the data that follows.

See Also "Browser Records" on page 229

## ELanguage

Description Used in the browse data header to specify source language type.

Prototype
```
#include <MWLangDefs.h>
```

Values The following table describes the enumerated values in `ELanguage`:

| | |
|---|---|
| `langUnknown` | Use `langUnknown` when there is no other more appropriate value in the `ELanguage` enumeration. |
| `langC` | Specifies C source code. |
| `langCPlus` | Specifies C++ source code. |
| `langPascal` | Specifies Pascal source code. |
| `langObjectPascal` | Specifies Object Pascal source code. |
| `langJava` | Specifies Java source code. |
| `langAssembler` | Specifies assembly language source code (regardless of processor type). |
| `langFortran` | Specifies FORTRAN source code. |
| `langRez` | Specifies a textual source file for resources, such as a Mac OS Rez file. |

Remarks

The `ELanguage` enumeration lists the languages that the CodeWarrior IDE browser supports. Use a value from `ELanguage` in the `browse_language` field of a `BrowseHeader` structure.

If the IDE does not directly support the language of a compiler, use the nearest match.

## EMember

Description

Describes the type of a class member.

Prototype

```
#include <MWBrowse.h>
typedef unsigned char EMember;
```

Values

The enumerated values in `EAccess` are:

| | |
|---|---|
| `memberFunction` | The member is a routine or method. |
| `memberData` | The member is a data field. |
| memberEnd | A value used to mark the end of a member list, rather than to specify the type of a member record. |

Remarks The `EMember` enumeration specifies the type of a class member. Use this enumeration to describe records in a member list for a base class.

See Also "The member list for each class contains a variable-length list of class members. The member list should contain only the data members and methods declared by the current class. The member list should not include inherited members and methods." on page 239

## ETemplateType

Description Describes a C++ template type.

Prototype
```
#include <MWBrowse.h>
typedef enum ETemplateType
```

Values The enumerated values in `ETemplateType` are:

| | |
|---|---|
| `templateClass` | The template describes a class. |
| `templateFunction` | The template describes a function. |

Remarks The `ETemplateType` enumeration lists the types of C++ templates. Browser records for templates include a single byte of template-specific information containing a value of type `ETemplateType`, which specifies the template type (class or function).

See Also "Additional Field For Templates" on page 242

# 6

# Settings Panel Plug-in API Reference

This chapter describes the plug-in API services available to settings panel plug-ins. The reference material in this chapter contains the following sections:

- Routines for Settings Panel Plug-ins
- User Routines for Settings Panel Plug-ins
- Data Structures for Settings Panel Plug-ins
- Constants for Settings Panel Plug-ins
- Settings Panel Result Codes

**NOTE** In many places, this chapter refers to the **Target Settings** dialog box. In fact, panel plug-ins can appear in any of three dialogs: **Preferences**, **Target Settings**, and **Version Control Settings** (all in the **Edit** menu). For convenience, this list refers only to **Target Settings**, because most panel plug-ins appear in this dialog box.

## Routines for Settings Panel Plug-ins

This section describes all routines available to settings panel plug-ins.

### Organization of Function Reference

Because the API routines for both Windows and Mac OS plug-ins differ in declaration but have similar function, this section of the reference is organized slightly differently from other reference sections.

The organizational differences directly reflect differences in the Windows and Mac OS versions of the settings panel plug-in API. These differences include the following:

1. Windows routines, except for XML routines, start with a "`CWPanel`" prefix. Windows XML routines start with a "`CW`" prefix. All Mac OS routines start with a "`CWPanl`" prefix.
2. The plug-in state parameter passed to all routines (`context`) is of type `CWPluginContext` on Windows and type `PanelParamBlkPtr` on the Mac OS.
3. Windows routines use handles of type `CWMemHandle`. Mac OS routines use Mac OS toolbox handles of type `Handle`.

Because similarly named Windows and Mac OS routines are functionally identical, the Mac OS routine entries simply refer to their Windows counterparts.

**NOTE** `DropInPanel.h` (which was for the Mac OS) and `DropInPanelWin32.h` have been deprecated. A cross-platform header file, `CWDropInPanel.h`, has superceded the header files. The deprecated header files remain valid, for backwards compatibility.

## Plug-in Context

All settings panel routines provided by the CodeWarrior IDE require a value of type `CWPluginContext` (on Windows) or of type `PanelParamBlkPtr` (on Mac OS) to be passed as the first parameter.

Windows — See "CWPluginContext" on page 108 and "Main Entry Point" in the *IDE SDK Developer's Guide* for more information.

Mac OS — See "PanelParamBlkPtr" on page 336 and "PanelParameterBlock" on page 336 for more information.

## Alphabetical Routine Index

- `CWGetArraySettingElement`
- `CWGetArraySettingSize`
- `CWGetBooleanValue`

- CWGetFloatingPointValue
- CWGetIntegerValue
- CWGetNamedSetting
- CWGetRelativePathValue
- CWGetStringValue
- CWGetStructureSettingField
- CWPanelActivateItem
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- CWPanelGetItemData
- CWPanelGetItemMaxLength
- CWPanelGetItemText
- CWPanelGetItemTextHandle
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- CWPanelGetListItemText
- CWPanelGetNumBaseDialogItems
- CWPanelGetOriginalPrefs
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- CWPanelGetRelativePathString
- CWPanelInsertListItem
- CWPanelInvalItem
- CWPanelSetFactoryFlag
- CWPanelSetItemData
- CWPanelSetItemMaxLength
- CWPanelSetItemText

- CWPanelSetItemTextHandle
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## Functional Routine Index

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- CWPanelAppendItems, CWPanlAppendItems
- CWPanelActivateItem, CWPanlActivateItem
- CWPanelEnableItem, CWPanlEnableItem
- CWPanelGetItemValue, CWPanlGetItemValue
- CWPanelSetItemValue, CWPanlSetItemValue
- CWPanelShowItem, CWPanlShowItem
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- CWPanelGetItemData, CWPanlGetItemData
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- `CWSetStringValue, CWPanlSetStringValue`

## CWGetArraySettingElement

Description — Returns one element of an XML array, by ID.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetArraySettingElement(
   CWPluginContext  context,
   CWSettingID      settingID,
   long             index,
   CWSettingID*     elementSettingID);
```

Parameters — The parameters for this Method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML array containing the element to be returned. |
| `index` | A zero-based index specifying the item in the array to be returned. |
| `elementSettingID` | Returns the ID of the indexed array element, which may be simple type, or a structured type. |

`CWGetArraySettingElement` returns an ID for a field of an XML structure. `CWGetArraySettingElement` behaves differently depending upon when it is called.

During a `reqReadSettings` request, this routine returns an error if a field having the specified name is not found. If the named field is found, the returned ID can be used to call one of the following routines to obtain the value of the field:

- `CWGetBooleanValue`
- `CWGetFloatingPointValue`
- `CWGetIntegerValue`
- `CWGetRelativePathValue`
- `CWGetStringValue`

If the field is another array, the plug-in should call `CWGetArraySettingSize` and `CWGetArraySettingElement` to read the elements of the array. If the field is a structure, the plug-in should instead call `CWGetStructureSettingField` to obtain the fields of the structure.

During a `reqReadSettings` request, to get the ID of a top-level XML array setting (that is, a setting whose parent container is implicitly the plug-in's XML stream), a plug-in calls `CWGetNamedSetting`. The plug-in can use the returned ID to call `CWGetArraySettingElement`.

During a `reqWriteSettings` request, this routine creates a new XML setting with the specified name if one has not already been created and return its ID. The plug-in can use the returned ID to call one of the following routines to set the value of the field:

- `CWSetBooleanValue`
- `CWSetFloatingPointValue`
- `CWSetIntegerValue`
- `CWSetRelativePathValue`
- `CWSetStringValue`

If the field to be written is instead another structure or array, the plug-in should call `CWGetStructureSettingField` or `CWGetArraySettingElement` to create a new setting. Both routines return an ID, which can be used in further calls to any of the above routines.

A plug-in creates a new top-level XML structure setting during a `reqWriteSettings` request by calling `CWGetNamedSetting`. The ID returned can be used to call `CWGetArraySettingElement`.

See Also

"CWGetStructureSettingField" on page 267

"CWGetArraySettingSize" on page 262

"CWGetNamedSetting" on page 264

"CWGetBooleanValue" on page 262

"CWGetFloatingPointValue" on page 263

"CWGetIntegerValue" on page 264

"CWGetRelativePathValue" on page 266

"CWGetStringValue" on page 266

"CWSetBooleanValue" on page 323

"CWSetFloatingPointValue" on page 324

"CWSetIntegerValue" on page 325

"CWSetRelativePathValue" on page 326

"CWSetStringValue" on page 327

## CWGetArraySettingSize

Description — Returns the number of elements in an XML array.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetArraySettingSize(
   CWPluginContext  context,
   CWSettingID      settingID,
   long*            size);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML array containing the element to be returned. |
| `size` | Returns the number of elements in the specified array. |

Remarks — `CWGetArraySettingSize` returns the number of elements in an XML array. Plug-ins can use this method to read an array of unknown size or to verify that the size of an array is correct prior to accessing its elements with `CWGetArraySettingElement`.

See Also — "CWGetArraySettingElement" on page 259

## CWGetBooleanValue

Description — Returns the value of a boolean element of an XML array or structure.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetBooleanValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   Boolean*         value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML setting for which to return a value. |
| `value` | Returns the boolean XML setting value. |

Remarks `CWGetBooleanValue` returns the value of a boolean XML setting, given the setting's ID. This method returns an error if the given setting is not a boolean value.

Plug-ins usually use this method to read a structure field or array element obtained by calling `CWGetStructureSettingField` or `CWGetArraySettingElement`. To read the value of a top-level boolean setting, use `CWReadBooleanSetting`.

See Also "CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"CWReadBooleanSetting" on page 319

## CWGetFloatingPointValue

Description Returns the value of a floating point element of an XML array or structure.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetFloatingPointValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   double*          value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML setting for which to return a value. |
| `value` | Returns the double-precision floating point XML setting value. |

Remarks `CWGetFloatingPointValue` returns the value of a floating point XML setting, given its ID. This method returns an error if the given setting is not a floating point number.

Plug-ins use this routine to read a structure field or array element obtained by calling `CWGetStructureSettingField` or `CWGetArraySettingElement`. To read the value of a top-level floating point setting, use `CWReadFloatingPointSetting`.

See Also "CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"CWReadFloatingPointSetting" on page 319

## CWGetIntegerValue

Description Returns the value of an integer element of an XML array or structure.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetIntegerValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   long*            value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML setting for which to return a value. |
| `value` | Returns the long integer XML setting value. |

Remarks `CWGetIntegerValue` returns the value of an integer XML setting given its ID. This method returns an error if the given setting is not an integer.

Plug-ins use this method to read a structure field or array element obtained by calling `CWGetStructureSettingField` or `CWGetArraySettingElement`. To read the value of a top-level integer setting, use `CWReadIntegerSetting`.

See Also "CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"CWReadIntegerSetting" on page 320

## CWGetNamedSetting

Description Returns the ID of a top-level XML setting specified by name.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetNamedSetting(
   CWPluginContext  context,
   const char*      name,
   CWSettingID*     settingID);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | Specifies the name of an XML setting, as a C string. |
| `settingID` | Returns the ID of a newly-created or existing setting container. |

Remarks

`CWGetNamedSetting` returns the ID of an XML setting contained in a panel's XML data. Normally, the ID refers to a structured XML setting, such as an array or structure.

The returned ID can be used to read or write a nested structure, using `CWGetStructureSettingField`. To read or write a nested array, call `CWGetArraySettingElement`.

**NOTE** Plug-ins can use `CWGetNamedSetting` to get or create an ID for any XML setting type, whether structured or not. However, it is usually easier to use the `CWRead...` and `CWWrite...` calls when reading non-structured types.

A setting returned (while reading) or created (during writing) by `CWGetNamedSetting` is always a top-level setting, meaning that the parent container is the plug-in's XML stream (either input or output).

`CWGetNamedSetting` behaves differently during a read request than during a write request. During a `reqReadSettings` request, `CWGetNamedSetting` returns an error if the named setting is not found in the XML input stream. During a `reqWriteSettings` request, `CWGetNamedSetting` instead creates a top-level setting having the specified name.

See Also

"CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"reqReadSettings" on page 364

"reqWriteSettings" on page 368

## CWGetRelativePathValue

Description — Returns the value of a relative path element of an XML array or structure.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetRelativePathValue(
   CWPluginContext   context,
   CWSettingID       settingID,
   CWRelativePath*   value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML setting for which to return a value. |
| `value` | Returns the relative path XML setting value. |

Remarks — `CWGetBooleanValue` returns the value of a relative path XML setting given its ID. Returns an error if the given setting is not a relative path.

Plug-ins use this method read a structure field or array element obtained by calling `CWGetStructureSettingField` or `CWGetArraySettingElement`. To read the value of a top-level relative path setting, use `CWReadRelativePathSetting`.

See Also

"CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"CWReadRelativePathSetting" on page 321

## CWGetStringValue

Description — Returns the value of a string element of an XML array or structure.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetStringValue(
```

```
   CWPluginContext   context,
   CWSettingID       settingID,
   const char**      value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the XML setting for which to return a value. |
| `value` | Returns a C string containing the contents of an XML string setting. The string remains the property of the IDE. |

Remarks — `CWGetBooleanValue` returns the value of a string XML setting, given the setting's ID. It returns an error if the given setting is not of string type.

**CAUTION** — The returned `value` string remains the property of the IDE. The can release it at the end of the pending request. Therefore, to retain the text returned in `value`, to copy it into another string before returning to the IDE.

This routine is typically used to read a structure field or array element obtained by calling `CWGetStructureSettingField` or `CWGetArraySettingElement`. To read the value of a top-level string setting, use `CWReadStringSetting` instead.

See Also — "CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

"CWReadStringSetting" on page 322

## CWGetStructureSettingField

Description — Returns one field of an XML structure, by ID.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWGetStructureSettingField(
   CWPluginContext   context,
   CWSettingID       settingID,
```

```
    const char*       name,
    CWSettingID*      fieldSettingID);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the IDE of an XML structure. |
| `name` | Specifies the name of the structure field to return. |
| `fieldSettingID` | Returns the ID of the named field. |

Remarks

`CWGetStructureSettingField` returns an ID for a field within an XML structure. `CWGetStructureSettingField` behaves differently depending upon when it is called.

During a `reqReadSettings` request, this routine returns an error if a field having the specified name is not found. If the named field is found, the plug-in can use the returned ID to call one of the following routines to obtain the value of the field:

- `CWGetBooleanValue`
- `CWGetFloatingPointValue`
- `CWGetIntegerValue`
- `CWGetRelativePathValue`
- `CWGetStringValue`

If the field is another structure, the plug-in should call `CWGetStructureSettingField` to obtain the fields of the structure. If the field is an array, the plug-in should call `CWGetArraySettingSize` and `CWGetArraySettingElement` to read the elements of the array.

During a `reqReadSettings` request, to get the ID of a top-level XML structure setting (that is, a setting whose parent container is implicitly the plug-in's XML stream), the plug-in can call `CWGetNamedSetting`. The plug-in can use the returned ID to call `CWGetStructureSettingField`.

During a `reqWriteSettings` request, this routine creates a new XML setting have the specified name if one has not already been

created and return its ID. The plug-in can use the returned ID to call one of the following routines to set the value of the field:

- `CWSetBooleanValue`
- `CWSetFloatingPointValue`
- `CWSetIntegerValue`
- `CWSetRelativePathValue`
- `CWSetStringValue`

If the field to be written is another structure or array, the plug-in should call `CWGetStructureSettingField` or `CWGetArraySettingElement` to create a new setting. Both routines return an ID, which the plug-in can use in further calls to any of the above routines.

A plug-in creates a new top-level XML structure setting during a `reqWriteSettings` request by calling `CWGetNamedSetting`. The plug-in can use the returned ID to call `CWGetStructureSettingField`.

See Also

"CWGetArraySettingElement" on page 259

"CWGetArraySettingSize" on page 262

"CWGetNamedSetting" on page 264

"reqReadSettings" on page 364

"reqWriteSettings" on page 368

"CWGetBooleanValue" on page 262

"CWGetFloatingPointValue" on page 263

"CWGetIntegerValue" on page 264

"CWGetRelativePathValue" on page 266

"CWGetStringValue" on page 266

"CWSetBooleanValue" on page 323

"CWSetFloatingPointValue" on page 324

"CWSetIntegerValue" on page 325

"CWSetRelativePathValue" on page 326

"CWSetStringValue" on page 327

## CWPanelActivateItem

Description Switches user input focus to the specified item.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelActivateItem(
   CWPluginContext  context,
   long             whichItem);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | The plug-in specifies the item to give the input focus. |

Remarks A settings panel plug-in calls this routine to make the specified item the focus of user input. For example, to switch user input to a text edit box, a plug-in can call `CWPanelActivateItem` with the ID of the edit box.

**TIP** Generally, the user should be in control of input focus; use this routine only in special cases where appropriate.

See Also "CWPanelEnableItem" on page 274

## CWPanelAppendItems

Description Adds the panel's dialog items to the **Target Settings** dialog box.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelAppendItems(
   CWPluginContext  context,
   short            ditlID);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `ditlID` | The plug-in specifies the resource ID of the dialog resource (on Windows) or a `'PPob'` resource (on Mac OS) to add to the **Target Settings** dialog box. |

Remarks

Plug-ins call `CWPanelAppendItems` to create their user interfaces. `CWPanelAppendItems` constructs the panel's user interface controls from a dialog resource specified by ID. The plug-in adds the panel's controls to the dialog box specified by the `panelscope` field of a plug-in's PanelFlags structure. For more information , see "PanelFlags Structure" in the *IDE SDK Developer's Guide*.

The IDE expects to find a dialog resource among the currently accessible resources. On Windows, the dialog resource should be linked into the plug-in DLL. On Mac OS, the dialog (`'PPob'`) resource should be copied into the plug-in's resource fork.

A settings panel plug-in should call `CWPanelAppendItems` in response to a `reqInitDialog` request. After the panel's user interface has been created, the plug-in can make any additional changes needed to its interface.

Windows

On Windows, plug-ins sometimes need to call `CWPanelGetListItemText`, `CWPanelSetListItemText`, `CWPanelInsertListItem`, and `CWPanelDeleteListItem` to set up the items in a combo-box list.

See Also

"Handling a reqInitiDialog Request" in the *IDE SDK Developer's Guide*

"reqInitDialog" on page 360

"CWPanelGetListItemText" on page 284

"CWPanelSetListItemText" on page 297

"CWPanelDeleteListItem" on page 274

"CWPanelInsertListItem" on page 290

## CWPanelChooseRelativePath

Description — Prompts the user to select a folder, and returns the specified folder as a relative path.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelChooseRelativePath(
   CWPluginContext  context,
   CWRelativePath*  ioPath,
   Boolean          isFolder,
   short            filterCount,
   void*            filterList,
   char*            prompt);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| ioPath | Specifies the initial location for selecting a file or folder, and returns the file or folder chosen by the user, as a relative path. |
| isFolder | Specifies whether a file or folder is to be selected. Selects a folder if true. |
| filterCount | Specifies the number of types used to filter the file list, when displaying files. Used only on Mac OS. |
| filterList | On Windows, this specifies a file or directory filter string.<br><br>On the Mac OS, this points to an `SFTypeList` (an array of 4-character `OSType` file type codes). |
| prompt | Unused and ignored. |

Remarks — Plug-ins call `CWPanelChooseRelativePath` to prompt the user to select a file or folder, specified relatively by a `CWRelativePath` structure. Relative path specifications let plug-ins keep track of files when moving project files.

`CWPanelChooseRelativePath` prompts the user to choose a file or folder, according to the value of `isFolder`, starting in the location specified by `ioPath`. It returns a relative path specification for the file or folder chosen in `ioPath`. If the user cancels the

operation, `CWPanelChooseRelativePath` returns `cwErrUserCanceled`.

Currently, the IDE ignores the `prompt` parameter.

`CWPanelChooseRelativePath` filters the list of files (when selecting files) using `filterList`. `filterList` controls which files appear for selection. The format of the parameter differs on Windows and the Mac OS.

Windows

On Windows, the `filterList` parameter has the same format as the `lpstrFilter` field of an `OPENFILENAME` structure passed to the `GetOpenFileName` common dialog call is formatted. The IDE ignores the `filterCount` parameter on Windows.

Briefly, the filter string consists of pairs of null-terminated strings, concatenated (but with intervening `NULL` characters intact) into one large string, terminated by a final `NULL` character. Each pair of strings consists of a filter name followed by a pattern specification.

The pattern specification can include legal file name characters and the DOS "`*`" wildcard character and usually specifies the literal value of a file extension. Multiple file patterns can be included in one string by separating each with a semicolon (";") character.

For further details, see Microsoft's MSDN developer information.

Mac OS

On Mac OS, the list of displayed files is filtered against a standard `SFTypeList` array of four-character codes, listing the file types to display. The `filterCount` parameter specifies the number of files in the type list. To display all files, specify a count of -1.

**NOTE** These comments also apply to the Mac OS version of this routine, named `CWPanlChooseRelativePath`.

See Also

"CWPanelGetRelativePathString" on page 288

"CWRelativePath" on page 113

"CWRelativePathTypes" on page 116

"CWResolveRelativePath" on page 77

## CWPanelDeleteListItem

Description — Deletes an item from a combo box list.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelDeleteListItem(
   CWPluginContext  context,
   long             dlgItemID,
   long             index);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of the combo-box containing the item to delete. |
| `index` | A one-based index that specifies the item to delete from a combo-box list. |

Remarks — `CWPanelDeleteListItem` removes one item from a combo-box list. Use `CWPanelDeleteListItem` to maintain the list of items appearing in a combo box.

For example, if your settings panel maintains a fixed-length history of recent text entries in a combo box, you can use `CWPanelDeleteListItem` to delete old items from the history and `CWPanelInsertListItem` to add new ones to it.

See Also — "CWPanelInsertListItem" on page 290

## CWPanelEnableItem

Description — Enables or disables a panel control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelEnableItem(
   CWPluginContext  context,
   long             whichItem,
   Boolean          enableIt);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| whichItem | Specifies the ID of the panel control to enable or disable. |
| enableIt | Specifies whether to enable the control. |

Remarks

A plug-in calls this routine to enable or disable a panel item. Enabled controls respond to events and are drawn normally. Disabled items are dimmed and do not respond to user actions.

Plug-ins use `CWPanelEnableItem` to enable or disable one control based upon the state of another. For example, a panel for a linker capable of producing relocatable executables and absolute address executables could use `CWPanelEnableItem` to enable and disable the absolute load address edit box, depending upon whether the selected executable type is relative or absolute.

See Also

"CWPanelActivateItem" on page 270

"CWPanelShowItem" on page 302

## CWPanelGetCurrentPrefs

Description

Returns a handle containing the panel's current settings data.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetCurrentPrefs(
   CWPluginContext  context,
   CWMemHandle*     currentPrefs);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| currentPrefs | Returns a handle containing the plug-in's current settings data. |

Remarks

A plug-in calls `CWPanelGetCurrentPrefs` to obtain the IDE's current copy of its settings data. The returned handle remains the IDE's property. A plug-in directly modifies the handle's contents to save its current settings data.

Before accessing the returned settings handle, a plug-in should call `CWLockMemHandle` to lock the handle. When done accessing the handle, a plug-in should call `CWUnlockMemHandle`. To determine the size of the handle, use `CWGetMemHandleSize`. To resize the handle, use `CWResizeMemHandle`.

Mac OS

On the Mac OS, plug-ins should instead directly access the `factoryPrefs` field of the `PanelParameterBlock`. The handle should be locked, unlocked, and resized using the Mac OS toolbox `HLock`, `HUnlock`, and `GetHandleSize` and `SetHandleSize` calls.

See Also

"Settings Panel Data" in the *IDE SDK Developer's Guide*

"CWPanelGetFactoryPrefs" on page 278

"CWPanelGetOriginalPrefs" on page 285

"CWPanelGetPanelPrefs" on page 287

## CWPanelGetDebugFlag

Description

Indicates whether debugging is enabled for the current target.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetDebugFlag(
   CWPluginContext  context,
   Boolean*         debugOn);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `debugOn` | Returns true if debugging is currently on, and false otherwise. |

Remarks

`CWPanelGetDebugFlag` returns true if the user has enabled debugging by selecting **Enable Debugger** from the **Project** menu.

**NOTE**

Do not confuse this flag with the value returned by `CWIsGeneratingDebugInfo`. `CWPanelGetDebugFlag` indicates whether the user enabled debugging of the final executable. The

value returned by `CWIsGeneratingDebugInfo` indicates whether the user enabled debugging information for a particular project file.

Plug-ins typically call `CWPanelGetDebugFlag` in response to a `reqSetupDebug` request, to determine whether debugging has been enabled or disabled and to then make any necessary modifications to settings data.

See Also

Handling a "reqSetupDebugRequest" in the *IDE SDK Developer's Guide*

"reqSetupDebug" on page 365

## CWPanelGetDialogItemHit

Description

Returns the ID of the most-recently operated panel control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetDialogItemHit(
   CWPluginContext  context,
   short*           itemHit);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `itemHit` | Returns the ID of the item hit during a `reqItemHit` request. |

Remarks

`CWPanelGetDialogItemHit` returns the ID of the control with which the user most recently interacted. In response to a `reqItemHit` request, plug-ins call `CWPanelGetDialogItemHit` to determine which item was hit.

The plug must adjust the item number returned by `CWPanelGetDialogItemHit` by subtracting the base number of items appearing in the dialog, prior to the addition of the panel's controls. Use `CWPanelGetNumBaseDialogItems` to get this count.

Depending upon the control that was hit, plug-ins can take further action, such as enabling, disabling, and changing the values of other controls. For example, a preference panel might provide a button for

selecting a folder. When the plug-in receives a `reqItemHit` request, it checks to see if the ID of the item hit matches the ID of the button and, if so, calls `CWPanelChooseRelativePath` to select a folder.

Mac OS

On the Mac OS, plug-ins instead examine the `itemHit` and `baseItems` fields of the `PanelParameterBlock` to determine the item hit and the base number of dialog items.

See Also

"Handling User Selection in Dialog Boxes" in the *IDE SDK Developer's Guide*

"Handling a `reqItemHit` Request" in the *IDE SDK Developer's Guide*

"CWPanelGetNumBaseDialogItems" on page 285

"reqItemHit" on page 361

## CWPanelGetFactoryPrefs

Description

Returns a handle containing the panel's factory default settings data.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetFactoryPrefs(
   CWPluginContext  context,
   CWMemHandle*     factoryPrefs);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `factoryPrefs` | Returns a handle containing the plug-in's factory default settings data. |

Remarks

A plug-in calls `CWPanelGetFactoryPrefs` to obtain the IDE's current copy of its settings data. The returned handle remains the IDE's property. A plug-in directly modifies the handle's contents to change its factory default settings data.

The IDE uses the factory default settings data when the user clicks the **Factory Settings** button in the **Target Settings** dialog box. Plug-ins should also compare their current settings to their current

factory defaults in response to a `reqItemHit` request, to determine how to set the factory flag using `CWPanelSetFactoryFlag`.

Before accessing the returned settings handle, a plug-in should call `CWLockMemHandle` to lock the handle. When finished accessing the handle, a plug-in should call `CWUnlockMemHandle`. To determine the size of the handle, use `CWGetMemHandleSize`. To resize the handle, use `CWResizeMemHandle`.

Mac OS

On Mac OS, plug-ins should directly access the `factoryPrefs` field of the `PanelParameterBlock`. The handle should be locked, unlocked, and resized using the Mac OS toolbox `HLock`, `HUnlock`, and `GetHandleSize` and `SetHandleSize` calls.

See Also

"Settings Panel Data" in the *IDE SDK Developer's Guide*

"CWPanelGetCurrentPrefs" on page 275

"CWPanelGetOriginalPrefs" on page 285

"CWPanelGetPanelPrefs" on page 287

## CWPanelGetItemData

Description

Returns additional type-specific data for a panel control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetItemData(
   CWPluginContext  context,
   long             dlgItemID,
   void*            outData,
   long*            outDataLength);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of the item for which to get additional control data. |
| `outData` | Points to storage in which to return the additional control information. |
| `outDataLength` | Specifies the length of the data to be returned in `outData`. |

Remarks This routine provides no useful service for third-party plug-in developers at this time. The exact behavior of this routine is subject to change. Plug-ins should not use this routine.

See Also "CWPanelSetItemData" on page 292

## CWPanelGetItemMaxLength

Description Returns the maximum allowed length for a text item.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetItemMaxLength(
   CWPluginContext  context,
   long             dlgItemID,
   short*           outLength);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of a static text or edit field about which to return length information. |
| `outLength` | Returns the maximum length, in characters, allowed when entering text into the item specified by `dlgItemID`. |

Remarks To determine the maximum allowed length for text entered into a static text or edit text field, use `CWPanelGetItemMaxLength`. To set the maximum length, use `CWPanelSetItemMaxLength`.

See Also "Validating Input" in the *IDE SDK Developer's Guide*

"CWPanelSetItemMaxLength" on page 293

## CWPanelGetItemText

Description Returns the text of an item in a dialog box.

Prototype
```
#include <CWDropInPanel.h>

CW_CALLBACK CWPanelGetItemText(
   CWPluginContext  context,
   long             whichItem,
   char*            str,
   short            maxLen);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item for which to return text. |
| `str` | Provides space in which the IDE returns the item's text, as a C string on Windows, and a Pascal string on Mac OS. |
| `maxLen` | Specifies the maximum length of the text to be returned, including the length byte. If the text exceeds this length, |

Remarks

This routine returns the text from an editable text field or static text field. For other types of controls, it returns the control's title. Plug-ins usually call `CWPanelGetItemText` to extract the text typed into a panel by the user when handling a `reqGetData` request.

`CWPanelGetItemText` also lets plug-ins perform character string validation. For example, in response to a `reqItemHit` request, a plug-in might ensure that the characters entered into a text field contain only legal file name characters. To extract the value of a field as a number, a plug-in calls `CWPanelGetItemValue` instead.

If the text associated with the item is longer than `maxLen` characters, `CWPanelGetItemText` returns no error code, but returns as much text as will fit in `str`. To get the full text of an item, use `CWPanelGetItemTextHandle`.

To determine the maximum possible length of text entered in a field, call `CWPanelGetItemMaxLength`. The value returned can be used to allocate space for text returned by `CWPanelGetItemText`.

See Also

"Validating Input" in the *IDE SDK Developer's Guide*

"CWPanelGetItemMaxLength" on page 280

"CWPanelSetItemText" on page 294

"CWPanelGetItemTextHandle" on page 282

"CWPanelGetItemValue" on page 283

"CWPanelSetItemValue" on page 296

"reqGetData" on page 358

"reqItemHit" on page 361

## CWPanelGetItemTextHandle

Description — Returns a handle containing the text of a panel control.

Prototype

```
#include <CWDropInPanel.h>

CW_CALLBACK CWPanelGetItemTextHandle(
   CWPluginContext  context,
   long             whichItem,
   CWMemHandle*     text);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item for which to return a text handle. |
| `text` | Returns a handle containing the text of the item. The handle becomes the caller's property. |

Remarks — `CWPanelGetItemTextHandle` returns a handle to the text of a static text or edit text item. For any other type of control, it returns a handle to the control's title text. Plug-ins can use `CWPanelGetItemTextHandle` to get text from a control when that text is too large to fit in a Pascal string returned by `CWPanlGetItemText`.

The returned handle becomes the property of the plug-in and should be released when no longer needed. Alternatively, a plug-in can modify the handle's text content and pass it back to the IDE using `CWPanlSetItemTextHandle` to set the item's text. In this case, because `CWPanlSetItemTextHandle` assumes ownership of the handle passed to it, the handle need not be released.

The returned handle should be locked prior to access using `CWLockMemHandle` and unlocked using `CWUnlockMemHandle`. A plug-in can determine the size of the handle by calling `CWGetMemHandleSize` and change it by calling `CWResizeMemHandle`.

See Also

"CWPanelSetItemTextHandle" on page 295

"CWPanelGetItemText" on page 280

"CWPanelGetItemValue" on page 283

## CWPanelGetItemValue

Description

Returns the value of a panel control as a long integer.

Prototype

```
#include <CWDropInPanel.h>

CW_CALLBACK CWPanelGetItemValue(
   CWPluginContext  context,
   long             whichItem,
   long*            value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item for which to return a value. |
| `value` | Returns the value of the specified control as a long integer. For text controls, this value is obtained by attempting to convert the item text to a number. |

Remarks

`CWPanelGetItemValue` returns the value of a panel control. `CWPanelGetItemValue` returns the following values for common control types:

| Control type | Values returned |
|---|---|
| checkbox | 0 when clear, 1 when set. |
| radio button | 0 when clear, 1 when set. |
| popup menu | A number from 1 to the number of items in the popup, indicating the currently selected item. |
| static text | The value of the text converted to a number. |
| edit text | The value of the text converted to a number. |

If the item is a text field, `CWPanelGetItemValue` assumes the text is a decimal number and attempts to convert it to a numeric value. Plug-ins can use this feature when validating numeric fields. If the

text of the specified field cannot be converted to a long integer, `CWPanelGetItemValue` returns an error.

See Also

"Handling a `reqItemHit` Request" in the *IDE SDK Developer's Guide*

"Validating Input" in the *IDE SDK Developer's Guide*

"CWPanelGetItemText" on page 280

"CWPanelSetItemValue" on page 296

## CWPanelGetListItemText

Description

Get the text of a Windows combo box list item.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetListItemText(
   CWPluginContext  context,
   long             dlgItemID,
   long             index,
   char*            str,
   short            maxLen);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of a combo box. |
| `index` | Specifies the one-based index of the combo box list item to return. |
| `str` | Provides space in which the IDE returns the text of the specified list item as a C string. |
| `maxLen` | Specifies the maximum number of characters to return in `str`, including null byte. |

Remarks

Panels use `CWPanelGetListItemText` to obtain the text of a Windows combo box list item. Plug-ins can use `CWPanelGetListItemText` to determine the selected item in a combo box list constructed at run time (for example, a list of fonts).

`CWPanelGetListItemText` returns at most `maxLen` characters of the text. If the item is longer than `maxLen`,

`CWPanelGetListItemText` returns as many characters as can fit in `str`.

See Also "CWPanelSetListItemText" on page 297

"CWPanelInsertListItem" on page 290

"CWPanelDeleteListItem" on page 274

## CWPanelGetNumBaseDialogItems

Description Returns the number of controls in the CodeWarrior **Target Settings** dialog prior to installation of a panel's controls.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetNumBaseDialogItems(
   CWPluginContext  context,
   short*           baseItems);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `baseItems` | Returns the original number of items in the **Target Settings** dialog, prior to installation of a panel's items. |

Remarks Plug-ins call `CWPanelGetNumBaseDialogItems` when responding to a `reqItemHit` request. The value returned is used to adjust the item number returned by `CWPanelGetDialogItemHit`. To determine the true item number of the hit item, plug-ins should subtract the value returned by `CWPanelGetNumBaseDialogItems` from the item number returned by `CWPanelGetDialogItemHit`.

See Also "Handling User Selection in Dialog Boxes" in the *IDE SDK Developer's Guide*

"CWPanelGetDialogItemHit" on page 277

"reqItemHit" on page 361

## CWPanelGetOriginalPrefs

Description Returns a handle containing the panel's original settings data.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetOriginalPrefs(
   CWPluginContext  context,
   CWMemHandle*     originalPrefs);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| originalPrefs | Returns a handle containing the plug-in's most recently committed settings data. |

Remarks

A plug-in calls `CWPanelGetFactoryPrefs` to obtain the IDE's most recently saved copy of the panel's settings data. The returned handle remains the IDE's property. Plug-ins should not modify the contents of this handle.

The returned handle contains the settings data values most recently saved by the user. If the user has not made any changes in the **Target Settings** dialog box, the contents of the original and current settings remain identical.

Before accessing the returned settings handle, a plug-in should call `CWLockMemHandle` to lock the handle. When finished accessing the handle, a plug-in should call `CWUnlockMemHandle`. To determine the size of the handle, use `CWGetMemHandleSize`. To resize the handle, use `CWResizeMemHandle`.

Mac OS

On the Mac OS, plug-ins should instead directly access the `factoryPrefs` field of the `PanelParameterBlock`. The handle should be locked, unlocked, read, and resized using the Mac OS toolbox calls `HLock`, `HUnlock`, `GetHandleSize`, and `SetHandleSize`.

See Also

"Settings Panel Data" in the *IDE SDK Developer's Guide*

"Handling a reqItemHit Request" in the *IDE SDK Developer's Guide*

"CWPanelGetCurrentPrefs" on page 275

"CWPanelGetFactoryPrefs" on page 278

"CWPanelGetPanelPrefs" on page 287

"CWPanelSetFactoryFlag" on page 291

"CWPanelSetRevertFlag" on page 301

## CWPanelGetPanelPrefs

Description

Returns a handle containing settings data for another panel, specified by name.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetPanelPrefs(
   CWPluginContext  context,
   const char*      panelName,
   CWMemHandle*     prefs,
   Boolean*         requiresByteSwap);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `panelName` | Specifies the name of the panel whose settings data handle should be returned. Specified as a C string on Windows, and as a Pascal string on Mac OS. |
| `prefs` | Returns a handle containing the named panel's settings data. |
| `requiresByteSwap` | Returns `true` if the data in the `prefs` handle must have its byte order swapped prior to use. |

Remarks

Plug-ins call `CWPanelGetPanelPrefs` to obtain the settings data of a different panel. Plug-ins use this method when setting up a compiler, linker, or version control system's data requires multiple panels. Plug-ins also use this method when one panel constructs some of its data values based on settings configured in another panel.

A plug-in must know the format of another panel's datato use it effectively. Normally, only closely related settings panels should share data this way.

If `requiresByteSwap` is `true` on return, the plug-in must swap the byte ordering of the data before using it.

Plug-ins should not modify the contents of the data handle returned. The handle remains the property of the IDE and should *not* be released by the plug-in.

Before accessing the returned settings handle, a plug-in should call `CWLockMemHandle` to lock the handle. When finished accessing the handle, a plug-in should call `CWUnlockMemHandle`. To determine the size of the handle, use `CWGetMemHandleSize`. To resize the handle, use `CWResizeMemHandle`.

See Also

"Settings Panel Data" in the *IDE SDK Developer's Guide*

"Handling a reqItemHit Request" in the *IDE SDK Developer's Guide*

"CWPanelGetCurrentPrefs" on page 275

"CWPanelGetFactoryPrefs" on page 278

"CWPanelGetOriginalPrefs" on page 285

"CWPanelSetFactoryFlag" on page 291

"CWPanelSetRevertFlag" on page 301

## CWPanelGetRelativePathString

Description

Converts a relative path to a textual full path representation.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelGetRelativePathString(
   CWPluginContext  context,
   CWRelativePath*  inPath,
   char*            pathString,
   long*            maxLength);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `inPath` | Specifies the relative path to convert to text. |

| | |
|---|---|
| pathString | Returns the full path equivalent of the relative path specified by inPath, as a C string on Windows, and as a Pascal string on Mac OS. The returned string includes special path prefixes, such as '{Project}' to indicate the reference location for relative paths. |
| maxLength | Specifies the maximum length of the text to return in pathString, including length NULL byte. |

Remarks

CWPanelGetRelativePathString returns a path string for a given relative path in a form suitable for display to users. For example, the IDE uses CWPanelGetRelativePathString to display the **Output Directory** path in the **Target Settings** dialog.

CWRelativePath structures consist of a reference directory and a partial path. The partial path specifies the location of an item relative to the reference directory. Path strings returned by CWPanelGetRelativePathString start with prefixes that indicate the type of reference path. (CWResolveRelativePath, in contrast, always returns the full path.)

Depending upon the value of pathType for a CWRelativePath structure, CWPanelGetRelativePathString constructs path strings beginning with one of the following prefixes:

| Path type | Path string prefix |
|---|---|
| type_Compiler | '{Compiler}' |
| type_Project | '{Project}' |
| type_System | '{System}' |
| type_Absolute, type_UserDefined | No prefix returned. In these cases, CWPanelGetRelativePathString returns the full path. |

For example, if a plug-in sets the output directory to a 'bin' subdirectory of the current project, CWPanelGetRelativePathString converts the relative path for the output directory to the following string:

```
'{Project}\bin'
```

Panels can call `CWPanelChooseRelativePath` to request selection of a relative path by the user. Plug-ins can also explicitly costruct `CWRelativePath`.

See Also

"CWPanelChooseRelativePath" on page 272

"CWRelativePath" on page 113

"CWRelativePathTypes" on page 116

"CWResolveRelativePath" on page 77

## CWPanelInsertListItem

Description

Inserts an item into a Windows combo box list.

Prototype

```
#include <CWDropInPanel.h>
CWPanelInsertListItem(
   CWPluginContext  context,
   long             dlgItemID,
   long             index,
   char*            str);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of the combo box. |
| `index` | Specifies the position at which to insert the text item in the combo box list. Item indexes are one-based. |
| `str` | Specifies the text of the item to insert, as a C string. |

Remarks

Use `CWPanelInsertListItem` to insert items in a Windows combo box list. Plug-ins typically call `CWPanelInsertListItem` in response to a `reqInitDialog` request, to initialize the contents of a combo box list.

Plug-ins can also call `CWPanelInsertListItem` while a panel is running, to modify the options presented in a combo box (such as a history list). To delete items from a combo box list, call `CWPanelDeleteListItem`.

Items are inserted at the position specified by `index`, and all other items initially at the same index or higher are shuffled to higher indexes. For example, inserting "test" at position 2 in the list {"First Item", "Last Item"} yields the list {"First Item", "test", "Last Item"}.

To insert items at the start of the list, use a value of 1 for `index`. To insert items at the end of the list, specify an `index` value one higher than the number of items in the list.

See Also "CWPanelDeleteListItem" on page 274

"reqInitDialog" on page 360

"CWPanelGetListItemText" on page 284

"CWPanelSetListItemText" on page 297

## CWPanelInvalItem

Description Invalidates the dialog area occupied by a dialog item.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelInvalItem(
   CWPluginContext  context,
   long             whichItem);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the panel item to invalidate. |

Remarks Plug-ins call `CWPanelInvalItem` to force an item to be redrawn. The IDE redraws the item the next time the IDE receives a paint message. Plug-ins generally use this method for custom items. Most plug-ins do not need to call this routine.

See Also "Redrawing Panel Items" in the *IDE SDK Developer's Guide*

"CWPanelValidItem" on page 303

## CWPanelSetFactoryFlag

Description Sets the value of the factory settings flag.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetFactoryFlag(
   CWPluginContext  context,
   Boolean          canFactory);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `canFactory` | Specifies the new value of the factory flag. Set this to `true` if the current preferences differ from the factory preferences. |

Remarks

Plug-ins call `CWPanelSetFactoryFlag` to set the state of the factory settings flag. This flag indicates whether the current settings match the factory settings. A value of `true` means the current settings do not match factory settings. When `true`, the IDE enables the **Factory Settings** button in the **Target Settings** dialog, allowing the user to reset all settings to their factory defaults.

This flag should be set or cleared in response to a `reqItemHit` request. To obtain the plug-in's current settings data, call `CWPanelGetCurrentPrefs`. To obtain its current factory settings, call `CWPanelGetFactoryPrefs`.

See Also

"Handling a reqItemHit Request" in the *IDE SDK Developer's Guide*

"reqItemHit" on page 361

"CWPanelSetRevertFlag" on page 301

"CWPanelGetCurrentPrefs" on page 275

"CWPanelGetFactoryPrefs" on page 278

"CWPanelGetOriginalPrefs" on page 285

## CWPanelSetItemData

Description

Sets additional type-specific data for a panel control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetItemData(
   CWPluginContext  context,
   long             dlgItemID,
```

```
   void*            inData,
   long             inDataLength);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the panel item for which to obtain additional information. |
| `inData` | Points to data of the appropriate type for the item. |
| `inDataLength` | Specifies the length of the data pointed to be `inData`. |

Remarks This routine provides no useful service for third-party plug-in developers at this time. The exact behavior of this routine is subject to change. Plug-ins should not use this routine.

See Also "CWPanelGetItemData" on page 279

## CWPanelSetItemMaxLength

Description Sets the maximum text entry length for an edit text control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetItemMaxLength(
   CWPluginContext  context,
   long             dlgItemID,
   short            inLength);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of the item for which to set the maximum text length. |
| `inLength` | Specifies the maximum allowed text length, in bytes, including the length/NULL byte. |

Remarks Call `CWPanelSetItemMaxLength` to set the maximum number of characters the user may enter into an edit text control.

A plug-in typically calls `CWPanelSetItemMaxLength` when initializing its UI in response to a `reqInitDialog` request and occasionally when responding to a `reqItemHit` request.

See Also

"Limiting Text Input" in the *IDE SDK Developer's Guide*

"Validating Input" in the *IDE SDK Developer's Guide*

"CWPanelGetItemMaxLength" on page 280

"CWPanelGetItemText" on page 280

"CWPanelSetItemText" on page 294

## CWPanelSetItemText

Description

Sets the text of a dialog item.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetItemText(
   CWPluginContext  context,
   long             whichItem,
   char*            str);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item for which to set the text. |
| `str` | Specifies the new text for the control, as a C string on Windows, and as a Pascal string on Mac OS. |

Remarks

This method changes the text for an editable text field, static text, or an item's title.

A plug-in typically uses `CWPanelSetItemText` to install text in controls in response to a `reqPutData` request. Plug-ins can also call `CWPanelSetItemText` to modify the text of an item in response to a `reqItemHit` request.

For example, if the user enters invalid text in a field, the plug-in can extract the text from a field using `CWPanelGetItemText`, remove the invalid characters, and put the cleaned up text in the text control by using `CWPanelSetItemText`.

See Also

"Handling a reqPutData Request" in the *IDE SDK Developer's Guide*

"Handling a reqItemHit Request" in the *IDE SDK Developer's Guide*

"CWPanelGetItemText" on page 280

"CWPanelGetItemValue" on page 283

"CWPanelSetItemValue" on page 296

"reqPutData" on page 363

"reqItemHit" on page 361

## CWPanelSetItemTextHandle

Description

Sets the text or title of a panel control to the text contained in a handle.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetItemTextHandle(
   CWPluginContext  context,
   long             whichItem,
   CWMemHandle      text);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item for which to set the text. |
| `text` | Contains the new text of the item. |

Remarks

Plug-ins can call `CWPanelSetItemTextHandle` to change the text of a static text or edit text item or the title of any other control type.

Unlike `CWPanelSetItemText`, which only provides access to the first 255 characters of an item's text (Mac OS), `CWPanelSetItemTextHandle` allows a plug-in to set the entire text of an item.

The `text` handle becomes the property of the IDE. Call `CWPanelGetItemTextHandle` to get the text of an item in a handle. A plug-in can make changes to an item's text by calling

`CWPanelGetItemTextHandle`, making changes to the text, and then calling `CWPanelSetItemTextHandle`.

See Also

"CWPanelGetItemTextHandle" on page 282

"CWPanelGetItemText" on page 280

"CWPanelSetItemText" on page 294

"CWPanelGetItemValue" on page 283

"CWPanelSetItemValue" on page 296

## CWPanelSetItemValue

Description

Sets the text of an static or edit text item to the text representation of a long integer.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetItemValue(
   CWPluginContext  context,
   long             whichItem,
   long             value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Sets the ID of the item for which to change the value. |
| `value` | Specifies the new value of the text item. |

Remarks

`CWPanelSetItemValue` sets the value of a panel control. `CWPanelSetItemValue` accepts the following values for common control types:

| Control type | Values to install in control |
|---|---|
| checkbox | 0 to clear; 1 to set. |
| radio button | 0 to clear; 1 to set. |
| popup menu | A number from 1 to the number of items in the popup, indicating the item currently selected. |

| Control type | Values to install in control |
|---|---|
| static text | The value of the text converted to a number. |
| edit text | The value of the text converted to a number. |

If the dialog item is a text field, `CWPanelSetItemValue` sets the item to the text representation of a long integer. This is convenient when dealing with numeric entry fields.

For example, when responding to a `reqItemHit` request, a panel can obtain the value of a text field interpreted as a number by calling `CWPanelGetItemValue`. If the value returned is out of range, the plug-in can install a properly constrained value in the text field using `CWPanelSetItemValue`.

See Also "CWPanelGetItemValue" on page 283

"CWPanelGetItemText" on page 280

"CWPanelSetItemText" on page 294

## CWPanelSetListItemText

Description Sets the text of a Windows combo box list item.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetListItemText(
   CWPluginContext  context,
   long             dlgItemID,
   long             index,
   char*            str);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dlgItemID` | Specifies the ID of the combo box item. |
| `index` | Specifies the one-based index of the combo box item for which to set the text content. |
| `str` | Specifies the new text of the combo box list item, as a C string. |

Remarks

A panel calls `CWPanelSetListItemText` to set the text of a Windows combo box list item. Combo box list indexes start at one. To obtain the text of an item, call `CWPanelGetListItemText`.

Plug-ins call `CWPanelSetListItemText` to install items in a combo box during dialog initialization, in response to a `reqInitDialog` request. Plug-ins can also call `CWPanelSetListItemText` to change the text of combo box list items in response to user actions (typically during a `reqItemHit` request).

See Also

"CWPanelGetListItemText" on page 284

"CWPanelInsertListItem" on page 290

"CWPanelDeleteListItem" on page 274

"reqInitDialog" on page 360

"reqItemHit" on page 361

## CWPanelSetRecompileFlag

Description

Sets the value of the recompile flag.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetRecompileFlag(
   CWPluginContext  context,
   Boolean          recompile);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `recompile` | Specifies the new value of the recompile flag. |

Remarks

A plug-in calls `CWPanelSetRecompileFlag` when responding to a `reqValidate` request.

A plug-in should set this flag if its current settings data necessitates a recompilation of the the current target's source code. This might be necessary, for example, if the user of a panel changes the optimization level of compiled code.

See Also

"Handling a reqValidate Request" in the *IDE SDK Developer's Guide*

"reqValidate" on page 367

"CWPanelSetRelinkFlag" on page 299

"CWPanelSetReparseFlag" on page 299

"CWPanelSetResetPathsFlag" on page 300

## CWPanelSetRelinkFlag

Description Sets the value of the relink flag.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetRelinkFlag(
   CWPluginContext  context,
   Boolean          relink);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `relink` | Specifies the new value of the relink flag. |

Remarks A plug-in calls `CWPanelSetRelinkFlag` when responding to a `reqValidate` request.

A plug-in should set this flag if its current settings data necessitates relinking the the current target's compiled executable. Relinking might become necessary, for example, if the user of a panel changes the executable binary type of the current target.

See Also "Handling a reqValidateRequest" in the *IDE SDK Developer's Guide*

"reqValidate" on page 367

"CWPanelSetRecompileFlag" on page 298

"CWPanelSetReparseFlag" on page 299

"CWPanelSetResetPathsFlag" on page 300

## CWPanelSetReparseFlag

Description Sets the value of the reparse flag.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetReparseFlag(
   CWPluginContext  context,
   Boolean          reparse);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `reparse` | Specifies the new value of the reparse flag. |

Remarks

A plug-in calls `CWPanelSetReparseFlag` when responding to a `reqValidate` request. A panel should set this flag if changes to its settings affect the information maintained by the IDE's symbol browser.

**NOTE** The IDE does not use this flag. Most plug-ins do not need to set this flag.

See Also

"Handling a reqValidate request" in the *IDE SDK Developer's Guide*

"reqValidate" on page 367

"CWPanelSetRecompileFlag" on page 298

"CWPanelSetRelinkFlag" on page 299

"CWPanelSetResetPathsFlag" on page 300

## CWPanelSetResetPathsFlag

Description

Sets the value of the "reset paths" settings flag.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetResetPathsFlag(
   CWPluginContext  context,
   Boolean          resetPaths);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `resetPaths` | Specifies the new value of the "reset paths" flag. |

Remarks

A plug-in calls `CWPanelSetResetPathsFlag` when responding to a `reqValidate` request.

A plug-in should set this flag if its current settings data requires the IDE to rescan for project files. When a plug-in sets this flag, the IDE searches for all target files within the currently established access paths, after the user commits (saves) the changes made in the panel. This might be necessary, for example, if the user of a panel adds or removes project paths.

See Also

"Handling a reqValidate Request" in the *IDE SDK Developer's Guide*

"reqValidate" on page 367

"CWPanelSetRecompileFlag" on page 298

"CWPanelSetRelinkFlag" on page 299

"CWPanelSetReparseFlag" on page 299

## CWPanelSetRevertFlag

Description

Sets the value of the revert flag.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelSetRevertFlag(
   CWPluginContext  context,
   Boolean          canRevert);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `canRevert` | Specifies the new value of the revert flag. |

Remarks

A plug-in calls `CWPanelSetRevertFlag` when responding to a `reqItemHit` request.

A plug-in should set this flag to indicate that the current settings data differs from the most recently saved settings data. When set, the IDE enables the **Revert** button in the **Target Settings** dialog.

See Also

"Handling a `reqItemHit` Request" in the *IDE SDK Developer's Guide*

"CWPanelSetFactoryFlag" on page 291

"reqItemHit" on page 361

## CWPanelShowItem

Description — Shows or hides an item in a settings panel.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelShowItem(
   CWPluginContext  context,
   long             whichItem,
   Boolean          showIt);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item to show or hide. |
| `showIt` | Specifies whether to show the item (nonzero) or hide it (zero). |

Remarks — A plug-in calls this routine to show or hide a dialog item.

`CWPanelShowItem` may be useful for hiding controls which, based upon other target settings, have no relevance. Usually, however, controls should not be hidden from the user; in most cases, enabling and disabling items using `CWPanelEnableItem` is more appropriate.

**TIP** In general, if an item can ever be enabled during use of its panel, it should not be hidden.

When showing controls that were previously hidden, you may want to activate one of them using `CWPanelEnableItem`, to give it input focus.

See Also — "Enabling and Disabling Items" in the *IDE SDK Developer's Guide*

"CWPanelEnableItem" on page 274

"CWPanelActivateItem" on page 270

## CWPanelValidItem

Description — Validates a panel control.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanelValidItem(
   CWPluginContext  context,
   long             whichItem);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `whichItem` | Specifies the ID of the item to validate. |

Remarks — Call `CWPanelValidItem` to inform the IDE and host operating system that a control need not be redrawn. `CWPanelValidItem` cancels any pending paint (update) messages for the specified item.

Most panels do not need to call `CWPanelValidItem`. `CWPanelValidItem` is most useful for custom controls.

See Also — "Redrawing Panel Items" in the *IDE SDK Developer's Guide*

"CWPanelInvalItem" on page 291

## CWPanlActivateItem

Description — The Mac OS version of `CWPanelActivateItem`.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlActivateItem(
   PanelParamBlkPtr  ppb,
   long              whichItem);
```

## CWPanlAppendItems

Description — The Mac OS version of `CWPanelAppendItems`.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlAppendItems(
   PanelParamBlkPtr  ppb,
   short             ditlID);
```

## CWPanlChooseRelativePath

Description — The Mac OS version of `CWPanelChooseRelativePath`.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlChooseRelativePath(
   PanelParamBlkPtr  ppb,
   CWRelativePath*   path,
   Boolean           isFolder,
   short             filterCount,
   void*             filterList,
   char*             prompt);
```

## CWPanlDrawPanelBox

Description — Draws a rectangle around a dialog item and optionally draws a title for the rectangle.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlDrawPanelBox(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   ConstStr255Param  title);
```

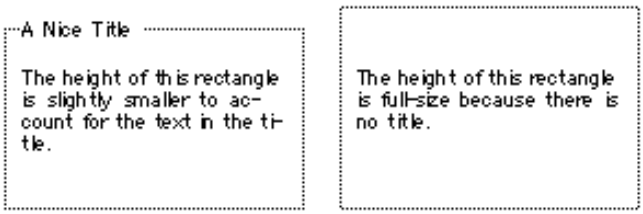
Parameters — The parameters for this method include:

| | |
|---|---|
| `ppb` | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| `whichItem` | The plug-in specifies the dialog item to draw the box around. |
| `title` | The plug-in specifies the title of the box, formatted as a Pascal string. |

Remarks — Draws a rectangle around a dialog box item and optionally draws a title for the rectangle.

The IDE draws a rectangle around the dialog item specified by `whichItem`. `title` specifies the title to give the rectangle. If `title` contains an empty string, no title appears (Figure 6.1).

**Figure 6.1 How CWPanelDrawPanelBox draws a rectangle**




See Also "Drawing Custom Items" in the *IDE SDK Developer's Guide*

## CWPanlDrawUserItemBox

Description Obsolete call to the IDE.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlDrawUserItemBox(
   DialogPtr          dialog,
   short              whichItem,
   ConstStr255Param   title);
```

## CWPanlEnableItem

Description The Mac OS version of `CWPanelEnableItem`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlEnableItem(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   Boolean           enableIt);
```

## CWPanlGetArraySettingElement

Description The Mac OS version of `CWGetArraySettingElement`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetArraySettingElement(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   long              index,
   CWSettingID*      elementSettingID);
```

## CWPanlGetArraySettingSize

Description The Mac OS version of `CWGetArraySettingSize`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetArraySettingSize(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   long*             size);
```

## CWPanlGetBooleanValue

Description The Mac OS version of `CWGetBooleanValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetBooleanValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   Boolean*          value);
```

## CWPanlGetFloatingPointValue

Description The Mac OS version of `CWGetFloatingPointValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetFloatingPointValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   double*           value);
```

## CWPanlGetIntegerValue

Description The Mac OS version of `CWGetIntegerValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetIntegerValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   long*             value);
```

## CWPanlGetItemControl

Description Retrieves the Mac OS control handle for a dialog item.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemControl(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   ControlRef*       control);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `ppb` | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| `whichItem` | Specifies the index of the item for which to return a control. |
| `control` | Returns the Mac OS control for the specified panel item. |

Remarks

A plug-in calls this routine to get the control handle for the item specified by `whichItem`. For items that contain menus, the IDE returns a menu handle.

In rare cases, a plug-in may require access to the Mac OS control corresponding to a panel item. To obtain this control, call `CWPanlGetItemControl` with the index of the panel item.

**NOTE** Whenever possible, plug-ins should use API routines to access controls, rather than Mac OS toolbox calls.

The returned control handle remains property of the IDE. If an item has no associated control, `CWPanlGetItemControl` returns an error.

See Also "CWPanlGetMacPort" on page 309

## CWPanlGetItemData

Description

The Mac OS version of `CWPanelGetItemData`.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemData(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   void*             outData,
   long*             outDataLength);
```

## CWPanlGetItemMaxLength

Description The Mac OS version of `CWPanelGetItemMaxLength`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemMaxLength(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   short*            outLength);
```

## CWPanlGetItemRect

Description Returns the bounding rectangle of the dialog item.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemRect(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   Rect*             rect);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `ppb` | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| `whichItem` | Specifies the index of the item for which to get the bounding rectangle. |
| `rect` | The IDE returns the rectangle in this argument. |

Remarks A plug-in calls this routine to get the bounding rectangle of a dialog item, in local coordinates. This is most useful when drawing and hit-testing custom controls (user items).

See Also "Drawing Custom Items" in the *IDE SDK Developer's Guide*

"CWPanlGetItemControl" on page 306

## CWPanlGetItemText

Description The Mac OS version of `CWPanelGetItemText`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemText(
   PanelParamBlkPtr  ppb,
```

```
   long              whichItem,
   StringPtr         str,
   short             maxLen);
```

## CWPanlGetItemTextHandle

Description The Mac OS version of `CWPanelGetItemTextHandle`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemTextHandle(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   Handle*           text);
```

## CWPanlGetItemValue

Description The Mac OS version of `CWPanelGetItemValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetItemValue(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   long*             value);
```

## CWPanlGetMacPort

Description Returns the graphics port of the settings dialog window.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetMacPort(
   PanelParamBlkPtr  ppb,
   GrafPtr*          port);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `ppb` | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| `port` | Returns the QuickDraw graphics port of the **Target Settings** dialog box. |

Remarks `CWPanlGetMacPort` returns a pointer to the Mac OS graphics port in which all settings dialog drawing takes place.

Plug-ins can use this method to create custom controls. For example, a custom control can change the pen size, foreground or background colors, text font or size, or the clipping region.

**CAUTION** A panel should always restore any graphics port characteristics it has changed before returning to the IDE.

See Also "Drawing Custom Items" in the *IDE SDK Developer's Guide*

"CWPanlDrawUserItemBox" on page 305

## CWPanlGetNamedSetting

Description The Mac OS version of `CWGetNamedSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetNamedSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   CWSettingID*      settingID);
```

## CWPanlGetPanelPrefs

Description The Mac OS version of `CWPanelGetPanelPrefs`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetPanelPrefs(
   PanelParamBlkPtr  ppb,
   StringPtr         inPanelName,
   Handle*           prefs,
   Boolean*          requiresByteSwap);
```

## CWPanlGetRelativePathString

Description The Mac OS version of `CWPanelGetRelativePathString`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetRelativePathString(
   PanelParamBlkPtr  ppb,
   CWRelativePath*   path,
   char*             pathString,
   long*             maxLength);
```

## CWPanlGetRelativePathValue

Description The Mac OS version of `CWGetRelativePathValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetRelativePathValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   CWRelativePath*   value);
```

## CWPanlGetStringValue

Description The Mac OS version of `CWGetStringValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetStringValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   const char**      value);
```

## CWPanlGetStructureSettingField

Description The Mac OS version of `CWGetStructureSettingField`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlGetStructureSettingField(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   const char*       name,
   CWSettingID*      fieldSettingID);
```

## CWPanlInstallUserItem

Description Obsolete call to the IDE.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlInstallUserItem(
   PanelParamBlkPtr  ppb,
   short             whichItem,
   UserItemProcPtr   proc);
```

## CWPanlInvalItem

Description The Mac OS version of `CWPanelInvalItem`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlInvalItem(
   PanelParamBlkPtr  ppb,
   long              whichItem);
```

## CWPanlReadBooleanSetting

Description The Mac OS version of `CWReadBooleanSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlReadBooleanSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   Boolean*          value);
```

## CWPanlReadFloatingPointSetting

Description The Mac OS version of `CWReadFloatingPointSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlReadFloatingPointSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   double*           value);
```

## CWPanlReadIntegerSetting

Description The Mac OS version of `CWReadIntegerSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlReadIntegerSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   long*             value);
```

## CWPanlReadRelativePathAEDesc

Description Extracts a relative path from a given Apple Event descriptor record.

Prototype
```
#include <CWDropInPanel.h>
```

```
CW_CALLBACK CWPanlReadRelativePathAEDesc(
   PanelParamBlkPtr  ppb,
   CWRelativePath*   path,
   const AEDesc*     desc);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| ppb | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| path | Returns the relative path specified by the Apple Event descriptor passed in desc. |
| desc | Provides the Apple Event descriptor data from an Apple Event, which contains a relative path. |

Remarks — CWPanlReadRelativePathAEDesc simplifies the task of extracting a CWRelativePath record from an Apple Event descriptor. Plug-ins call CWPanlReadRelativePathAEDesc in response to a reqAESetPref request, to extract a relative path setting from an Apple Event descriptor.

A plug-in passes the AEDesc from the prefsDesc field of the PanelParameterBlock in the desc field. The IDE extracts the relative path information from the Apple Event descriptor and stores it in the path structure. desc remains the property of the plug-in.

See Also — "CWPanlWriteRelativePathAEDesc" on page 317

## CWPanlReadRelativePathSetting

Description — The Mac OS version of CWReadRelativePathSetting.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlReadRelativePathSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   CWRelativePath*   value);
```

## CWPanlReadStringSetting

Description — The Mac OS version of CWReadStringSetting.

Prototype

```
#include <CWDropInPanel.h>
```

```
CW_CALLBACK CWPanlReadStringSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   const char**      value);
```

## CWPanlRemoveUserItem

Description Obsolete call to the IDE.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlRemoveUserItem(
   PanelParamBlkPtr  ppb,
   short             whichItem);
```

## CWPanlSetBooleanValue

Description The Mac OS version of `CWSetBooleanValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetBooleanValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   Boolean           value);
```

## CWPanlSetFloatingPointValue

Description The Mac OS version of `CWSetFloatingPointValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetFloatingPointValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   double            value);
```

## CWPanlSetIntegerValue

Description The Mac OS version of `CWSetIntegerValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetIntegerValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   long              value);
```

## CWPanlSetItemData

Description The Mac OS version of `CWPanelSetItemData`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetItemData(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   void*             inData,
   long inDataLength);
```

## CWPanlSetItemMaxLength

Description The Mac OS version of `CWPanelSetItemMaxLength`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetItemMaxLength(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   short             inLength);
```

## CWPanlSetItemText

Description The Mac OS version of `CWPanelSetItemText`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetItemText(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   ConstStr255Param  str);
```

## CWPanlSetItemTextHandle

Description The Mac OS version of `CWPanelSetItemTextHandle`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetItemTextHandle(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   Handle            text);
```

## CWPanlSetItemValue

Description The Mac OS version of `CWPanelSetItemValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetItemValue(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   long              value);
```

## CWPanlSetRelativePathValue

Description The Mac OS version of `CWPanlSetRelativePathValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetRelativePathValue(
   PanelParamBlkPtr       ppb,
   CWSettingID            settingID,
   const CWRelativePath*  value);
```

## CWPanlSetStringValue

Description The Mac OS version of `CWPanlSetStringValue`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlSetStringValue(
   PanelParamBlkPtr  ppb,
   CWSettingID       settingID,
   const char*       value);
```

## CWPanlShowItem

Description The Mac OS version of `CWPanlShowItem`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlShowItem(
   PanelParamBlkPtr  ppb,
   long              whichItem,
   Boolean           showIt);
```

## CWPanlValidItem

Description The Mac OS version of `CWPanlValidItem`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlValidItem(
   PanelParamBlkPtr  ppb,
   long              whichItem);
```

## CWPanlWriteBooleanSetting

Description The Mac OS version of `CWPanlWriteBooleanSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteBooleanSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   Boolean           value);
```

## CWPanlWriteFloatingPointSetting

Description The Mac OS version of `CWPanlWriteFloatingPointSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteFloatingPointSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   double            value);
```

## CWPanlWriteIntegerSetting

Description The Mac OS version of `CWPanlWriteIntegerSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteIntegerSetting(
   PanelParamBlkPtr  ppb,
   const char*       name,
   long              value);
```

## CWPanlWriteRelativePathAEDesc

Description Contructs an Apple Event descriptor for a given relative path.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteRelativePathAEDesc(
   PanelParamBlkPtr       ppb,
   const CWRelativePath*  path,
```

```
   AEDesc*                 desc);
```

Parameters The parameters for this method include:

| | |
|---|---|
| ppb | Parameter block passed to Mac OS panels, required by the IDE to service plug-in requests. |
| path | Specifies the relative path for which to construct an Apple Event descriptor. |
| desc | Returns an Apple Event descriptor describing the relative path specified in path. The IDE allocates this descriptor, which becomes the property of the plug-in. |

Remarks `CWPanlWriteRelativePathAEDesc` simplifies the task of creating an Apple Event descriptor for a `CWRelativePath` record. Plug-ins call `CWPanlWriteRelativePathAEDesc` in response to a `reqAEGetPref` request, to return an Apple Event descriptor for a relative path setting.

The `AEDesc` returned in `desc` becomes the property of the plug-in. Generally, the plug-in returns the AEDesc object in the `prefsDesc` field of the `PanelParameterBlock`. The plug-in should release the AEDesc when done with it.

See Also "CWPanlReadRelativePathAEDesc" on page 312

"reqAEGetPref" on page 350

## CWPanlWriteRelativePathSetting

Description The Mac OS version of `CWPanlWriteRelativePathSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteRelativePathSetting(
   PanelParamBlkPtr       ppb,
   const char*            name,
   const CWRelativePath*  value);
```

## CWPanlWriteStringSetting

Description The Mac OS version of `CWPanlWriteStringSetting`.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWPanlWriteStringSetting(
```

```
   PanelParamBlkPtr  ppb,
   const char*       name,
   const char*       value);
```

## CWReadBooleanSetting

Description — Reads a boolean value from the top level of a panel's XML input stream.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWReadBooleanSetting(
   CWPluginContext  context,
   const char*      name,
   Boolean*         value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | A C string specifying the name of the XML setting to read. |
| `value` | Returns the boolean value of the named setting. |

Remarks — `CWReadBooleanSetting` returns the value of a top-level boolean XML setting (a boolean value contained in the panel's XML stream, but not in a structure or array). If the IDE finds no boolean setting with the specified name, the IDE returns an error.

`CWReadBooleanSetting` returns an error if the named setting cannot be found or is not boolean. `CWReadBooleanSetting` should only be called in response to a `reqReadSettings` request.

To read a boolean component of an XML structure or array, use `CWGetBooleanValue`.

See Also — "reqReadSettings" on page 364

"CWGetBooleanValue" on page 262

## CWReadFloatingPointSetting

Description — Reads a floating point value from the top level of a panel's XML input stream.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWReadFloatingPointSetting(
   CWPluginContext  context,
   const char*      name,
   double*          value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | A C string specifying the name of the XML setting to read. |
| `value` | Returns the floating point value of the named setting. |

Remarks

`CWReadFloatingPointSetting` returns the value of a top-level floating point XML setting (a floating point value contained in the panel's XML stream, but not in a structure or array). If the IDE finds no floating point value with the specified name, the IDE returns an error.

`CWReadFloatingPointSetting` returns an error if the given setting does not exist or is not a floating point value. Plug-ins should only call `CWReadFloatingPointSetting` should in response to a `reqReadSettings` request.

To read a floating point component of an XML structure or array, use `CWGetFloatingPointValue`.

See Also

"reqReadSettings" on page 364

"CWGetFloatingPointValue" on page 263

## CWReadIntegerSetting

Description

Reads a long integer value from the top level of a panel's XML input stream.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWReadIntegerSetting(
   CWPluginContext  context,
   const char*      name,
   long*            value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| name | A C string specifying the name of the XML setting to read. |
| value | Returns the long integer value of the named setting. |

Remarks

CWReadIntegerSetting returns the value of a top-level integer XML setting (an integer value contained in the panel's XML stream, but not in a structure or array). If the IDE finds no integer setting with the specified name, the IDE returns an error.

CWReadIntegerSetting returns an error if the given setting does not exist or is not an integer value. Plug-ins should only call CWReadIntegerSetting in response to a reqReadSettings request.

To read a CWReadIntegerSetting component of an XML structure or array, use CWGetIntegerValue.

See Also

"reqReadSettings" on page 364

CWGetIntegerValue

## CWReadRelativePathSetting

Description

Reads a relative path value from the top level of a panel's XML input stream.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWReadRelativePathSetting(
   CWPluginContext  context,
   const char*      name,
   CWRelativePath*  value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| name | A C string specifying the name of the XML setting to read. |
| value | Returns the relative path value of the named setting. |

Remarks

`CWReadRelativePathSetting` returns the value of a top-level relative path XML setting (a relative path value contained in the panel's XML stream, but not in a structure or array). If the IDE finds no relative path setting with the specified name, the IDE returns an error.

`CWReadRelativePathSetting` returns an error if the given setting does not exist or is not of relative path type. Plug-ins should only call `CWReadRelativePathSetting` in response to a `reqReadSettings` request.

To read a relative path component of an XML structure or array, use `CWGetRelativePathValue`.

See Also

"reqReadSettings" on page 364

"CWGetRelativePathValue" on page 266

## CWReadStringSetting

Description

Reads a string value from the top level of a panel's XML input stream.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWReadStringSetting(
   CWPluginContext  context,
   const char*      name,
   const char**     value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | A C string specifying the name of the XML setting to read. |
| `value` | Returns a C string containing the value of the named setting. The string returned remains the property of the IDE. |

Remarks

`CWReadStringSetting` returns the value of a top-level string XML setting (a string value contained in the panel's XML stream, not in a structure or array). If the IDE finds no string setting with the specified name, the IDE returns an error. Otherwise, the IDE returns the string setting's value is returned in a newly allocated string.

**CAUTION** The returned string remains the property of the IDE. The IDE can release the string at the end of the pending request. Therefore, to retain the text returned in `value`, copy the string into another string before returning to the IDE.

`CWReadStringSetting` returns an error if the named setting does not exist or is not of string type. Plug-ins should only call `CWReadStringSetting` in response to a `reqReadSettings` request.

To read a string component of an XML structure or array, use `CWGetStringValue`.

See Also "reqReadSettings" on page 364

"CWGetStringValue" on page 266

## CWSetBooleanValue

Description Sets the value of a boolean element of an XML array or structure.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWSetBooleanValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   Boolean          value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the ID of the setting to change. |
| `value` | Specifies the new setting value. |

Remarks `CWSetBooleanValue` sets the type of an XML setting to boolean, and specifies its value. Plug-ins call `CWSetBooleanValue` in response to a `reqWriteSettings` request, to write out the value of a boolean array element or structure field.

If a `CWSet…Value` call has been previously issued for the setting specified by `settingID`, the IDE changes its type to boolean and its value to `value`.

To create a boolean array element setting or structure field setting and obtain its ID, call `CWGetArraySettingElement` or `CWGetStructureSettingField`, respectively. To write out a top-level boolean setting, use `CWWriteBooleanSetting`.

**TIP** `CWSetBooleanValue` can be used to change the value of a top-level setting, whose ID was obtained from `CWGetNamedSetting`. However, `CWWriteBooleanSetting` offers more direct method.

See Also

"reqWriteSettings" on page 368

"CWGetArraySettingElement" on page 259

"CWGetStructureSettingField" on page 267

"CWWriteBooleanSetting" on page 328

## CWSetFloatingPointValue

Description

Sets the value of a floating point element of an XML array or structure.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWSetFloatingPointValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   double           value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the ID of the setting to change. |
| `value` | Specifies the new setting value. |

Remarks

`CWSetFloatingPointValue` sets the type of an XML setting to floating point and specifies its value. Plug-ins call `CWSetFloatingPointValue` in response to a `reqWriteSettings` request, to write out the value of a floating point array element or structure field.

If a `CWSet…Value` call has been previously issued for the setting specified by `settingID`, the IDE changes its type to floating point and changes its value to `value`.

To create a floating point array element setting or structure field setting and obtain its ID, call `CWGetArraySettingElement` or `CWGetStructureSettingField`, respectively. To write out a top-level floating point setting, use `CWWriteFloatingPointSetting`.

**TIP** Plugins can use `CWSetFloatingPointValue` to change the value of a top-level setting, whose ID was obtained from `CWGetNamedSetting`. However, `CWWriteFloatingPointSetting` offers a more direct method.

See Also "reqWriteSettings" on page 368

"CWGetArraySettingElement" on page 259

"CWGetStructureSettingField" on page 267

"CWWriteFloatingPointSetting" on page 329

## CWSetIntegerValue

Description Sets the value of an integer element of an XML array or structure.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWSetIntegerValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   long             value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the ID of the setting to change. |
| `value` | Specifies the new setting value. |

Remarks `CWSetIntegerValue` sets the type of an XML setting to integer, and specifies its value. plug-ins call `CWSetIntegerValue` in

response to a `reqWriteSettings` request, to write out the value of an integer array element or structure field.

If a `CWSet…Value` call has been previously issued for the setting specified by `settingID`, the IDE changes its typeto integer and changes its value to `value`.

To create an integer array element setting or structure field setting and obtain its ID, call `CWGetArraySettingElement` or `CWGetStructureSettingField`, respectively. To write out a top-level integer setting, use `CWWriteIntegerSetting`.

**TIP** Plug-ins can use `CWSetIntegerValue` to change the value of a top-level setting, whose ID was obtained from `CWGetNamedSetting`. However, `CWWriteIntegerSetting` offers a more direct method.

See Also "reqWriteSettings" on page 368

"CWGetArraySettingElement" on page 259

"CWGetStructureSettingField" on page 267

"CWWriteIntegerSetting" on page 330

## CWSetRelativePathValue

Description Sets the value of a relative path element of an XML array or structure.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWSetRelativePathValue(
   CWPluginContext        context,
   CWSettingID            settingID,
   const CWRelativePath*  value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the ID of the setting to change. |
| `value` | Specifies the new setting value. |

Remarks

`CWSetRelativePathValue` sets the type of an XML setting to relative path, and specifies its value. plug-ins call `CWSetRelativePathValue` in response to a `reqWriteSettings` request, to write out the value of a relative path array element or structure field.

If a `CWSet…Value` call has been previously issued for the setting specified by `settingID`, the IDE changes its type to relative path and changes its value to `value`.

To create a relative path array element setting or structure field setting and obtain its ID, call `CWGetArraySettingElement` or `CWGetStructureSettingField`, respectively. To write out a top-level relative path setting, use `CWWriteRelativePathSetting`.

**TIP** Plug-ins can use `CWSetRelativePathValue` to change the value of a top-level setting, whose ID was obtained from `CWGetNamedSetting`. However, `CWWriteRelativePathSetting` offers a more direct method.

See Also

"reqWriteSettings" on page 368

"CWGetArraySettingElement" on page 259

"CWGetStructureSettingField" on page 267

"CWWriteRelativePathSetting" on page 330

## CWSetStringValue

Description

Sets the value of a string element of an XML array or structure.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWSetStringValue(
   CWPluginContext  context,
   CWSettingID      settingID,
   const char*      value);
```

Parameters

The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `settingID` | Specifies the ID of the setting to change. |
| `value` | Specifies the new setting value. |

Remarks

`CWSetStringValue` sets the type of an XML setting to string and specifies its value. Plug-ins call `CWSetStringValue` in response to a `reqWriteSettings` request to write out the value of a string array element or structure field.

If a `CWSet…Value` call has been previously issued for the setting specified by `settingID`, the IDE changes its type to string and changes its value to `value`.

To create a string array element setting or structure field setting and obtain its ID, call `CWGetArraySettingElement` or `CWGetStructureSettingField`, respectively. To write out a top-level string setting, use `CWWriteStringSetting`.

**TIP** Plug-ins can use `CWSetStringValue` to change the value of a top-level setting, whose ID was obtained from `CWGetNamedSetting`. However, `CWWriteStringSetting` offers a more direct method.

See Also

"reqWriteSettings" on page 368

"CWGetArraySettingElement" on page 259

"CWGetStructureSettingField" on page 267

"CWWriteStringSetting" on page 331

## CWWriteBooleanSetting

Description

Writes a boolean value to the top level of a panel's exported XML data.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWWriteBooleanSetting(
   CWPluginContext  context,
   const char*      name,
   Boolean          value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | Specifies the name of the top-level setting to create, as a C string. |
| `value` | Specifies the new setting value. |

Remarks `CWWriteBooleanSetting` writes the value of a top-level boolean setting to the plug-in's XML output stream. Plug-ins should only call `CWWriteBooleanSetting` in response to a `reqWriteSettings` request.

To write a boolean component of an XML structure or array, use `CWPanlSetBooleanValue`.

See Also "reqWriteSettings" on page 368

"CWSetBooleanValue" on page 323

## CWWriteFloatingPointSetting

Description Writes a floating point value to the top level of a panel's exported XML data.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWWriteFloatingPointSetting(
   CWPluginContext  context,
   const char*      name,
   double           value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | Specifies the name of the top-level setting to create, as a C string. |
| `value` | Specifies the new setting value. |

Remarks `CWWriteFloatingPointSetting` writes the value of a top-level floating point setting to the plug-in's XML output stream. Plug-ins should only call `CWWriteFloatingPointSetting` in response to a `reqWriteSettings` request.

To write a floating point component of an XML structure or array, use `CWPanlSetFloatingPointValue` instead.

See Also "reqWriteSettings" on page 368

"CWSetFloatingPointValue" on page 324

## CWWriteIntegerSetting

Description Writes an integer value to the top level of a panel's exported XML data.

Prototype
```
#include <CWDropInPanel.h>
CW_CALLBACK CWWriteIntegerSetting(
   CWPluginContext  context,
   const char*      name,
   long             value);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `name` | Specifies the name of the top-level setting to create, as a C string. |
| `value` | Specifies the new setting value. |

Remarks `CWWriteIntegerSetting` writes the value of a top-level integer setting to the plug-in's XML output stream. Plug-ins should only call `CWWriteIntegerSetting` in response to a `reqWriteSettings` request.

To write a integer component of an XML structure or array, use `CWPanlSetIntegerValue`.

See Also "reqWriteSettings" on page 368

"CWSetIntegerValue" on page 325

## CWWriteRelativePathSetting

Description Writes a relative path value to the top level of a panel's exported XML data.

Prototype
```
#include <CWDropInPanel.h>
```

```
CW_CALLBACK CWWriteRelativePathSetting(
   CWPluginContext        context,
   const char*            name,
   const CWRelativePath*  value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| name | Specifies the name of the top-level setting to create, as a C string. |
| value | Specifies the new setting value. |

Remarks — `CWWriteRelativePathSetting` writes the value of a top-level relative path setting to the plug-in's XML output stream. Plug-ins should only call `CWWriteRelativePathSetting` in response to a `reqWriteSettings` request.

To write a relative path component of an XML structure or array, use `CWPanlSetRelativePathValue`.

See Also — "reqWriteSettings" on page 368

"CWSetRelativePathValue" on page 326

## CWWriteStringSetting

Description — Writes a string value to the top level of a panel's exported XML data.

Prototype

```
#include <CWDropInPanel.h>
CW_CALLBACK CWWriteStringSetting(
   CWPluginContext  context,
   const char*      name,
   const char*      value);
```

Parameters — The parameters for this method include:

| | |
|---|---|
| context | Private, opaque IDE state. |
| name | Specifies the name of the top-level setting to create, as a C string. |
| value | Specifies the new setting value. |

Remarks `CWWriteStringSetting` writes the value of a top-level string setting to the plug-in's XML output stream. Plug-ins should only call `CWWriteStringSetting` in response to a `reqWriteSettings` request.

To write a string component of an XML structure or array, use `CWPanlSetStringValue`.

See Also "reqWriteSettings" on page 368

"CWSetStringValue" on page 327

# User Routines for Settings Panel Plug-ins

This section documents informational entry points specific to panel plug-ins.

The routines documented in this section are:

- CWPlugin_GetHelpInfo Entry Point

## CWPlugin_GetHelpInfo Entry Point

Description An optional entry point implemented by Windows plug-ins to inform the IDE about help information associated with a panel.

Prototype
```
#include <CWDropInPanel.h>
CWPLUGIN_ENTRY (CWPlugin_GetHelpInfo)
   (const CWHelpInfo** helpInfo);
```

Parameters The parameters for this method include:

| | |
|---|---|
| `helpInfo` | The plug-in returns a pointer to help information. |

Remarks Windows plug-ins can use this optional entry point to specify the name of a WinHelp help file to be displayed when the user clicks **Help** in the **Target Settings** dialog.

The IDE searches for plug-in help files in the `Help` directory within the CodeWarrior IDE install directory.

See Also "Help Information Entry Point" in the *IDE SDK Developer's Guide*

"CWHelpInfo" on page 333

# Data Structures for Settings Panel Plug-ins

This section discusses the following topics:

- CWDialog
- CWHelpInfo
- CWSettingID
- PanelFlags
- PanelParamBlkPtr
- PanelParameterBlock

## CWDialog

Description — Specifies the type of a Mac OS panel dialog.

Prototype

```
#include <CWDropInPanel.h>
#if CW_STRICT_DIALOGS
   typedef struct DummyDialog* CWDialog;
#else
   typedef DialogPtr           CWDialog;
#endif
```

Remarks — Depending on the definition of CW_STRICT_DIALOGS, this data type is equivalent to an opaque type or to the Mac OS DialogPtr type.

All new Mac OS panel plug-ins should be compiled with CW_STRICT_DIALOGS enabled and should not use the dialog member of a PanelParameterBlock.

See Also — "CW_STRICT_DIALOGS" on page 345

"PanelParameterBlock" on page 336

## CWHelpInfo

Description — Describes a Windows panel's associated help file to the IDE.

Prototype

```
#include <CWPlugins.h>  /* Windows */
typedef struct CWHelpInfo
{
   short         version;
```

```
   const char *  helpFileName;
} CWHelpInfo;
```

Fields The fields in this structure are:

| | |
|---|---|
| `version` | Specifies the version of the `CWHelpInfo` structure. plug-ins should set this to `kCurrentCWHelpInfoVersion`. |
| `helpFileName` | Specifies the name of a settings panel's associated WinHelp file as a C string. |

Remarks Windows panels optionally return a pointer to a `CWHelpInfo` structure to tell the IDE the name of any associated help file. The help file name should end with a '`.hlp`' extension. This help file is displayed by the IDE when the user clicks the **Help** button in the **Target Settings** dialog, and should be a standard WinHelp file.

See Also "Help Informaton Entry Point" in the *IDE SDK Developer's Guide*

"kCurrentCWHelpInfoVersion" on page 346

## CWSettingID

Description Identifies a container for a simple XML data type, an XML array type, or an XML structure type.

Prototype
```
#include <CWDropInPanel.h>  /* Windows */
#include <CWDropInPanel.h>       /* Mac OS */
typedef struct MWSetting* CWSettingID;
```

Remarks A `CWSettingID` represents an XML setting container, associating an XML name with a data value of a particular type. `CWSettingID`s can store array, structure, and simple types.

Plug-ins call `CWGetNamedSetting` to obtain `CWSettingID`s for simple types. Plug-ins call `CWGetStructureSettingField` to obtain `CWSettingID`s for structure fields, and `CWGetArraySettingElement` to obtain `CWSettingID`s for array elements.

See Also "CWGetNamedSetting" on page 264

"CWGetStructureSettingField" on page 267

"CWGetArraySettingElement" on page 259

## PanelFlags

Description Describes a panel plug-in's capabilities to the IDE.

Prototype
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>        /* Mac OS */

typedef struct PanelFlags {
   unsigned short  rsrcversion;
   CWDataType      dropintype;
   unsigned short  earliestCompatibleAPIVersion;
   unsigned long   dropinflags;
   CWDataType      panelfamily;
   unsigned short  newestAPIVersion;
   unsigned short  dataversion;
   unsigned short  panelscope;
} PanelFlags;
```

Fields The fields in this structure are:

| | |
|---|---|
| `rsrcversion` | Specifies the version of the `PanelFlags` structure. |
| `dropintype` | Specifies the plug-in type (should be `'PanL'` for settings panels). |
| `earliestCompatibleAPIVersion` | |
| | Specifies the earliest API version a plug-in is compatible with. |
| `dropinflags` | Specifies the capabilities of a plug-in. Use a combination of `usesStrictAPI`, `supportsByteSwapping`, and `supportsTextSettings`. |
| `panelfamily` | Specifies the family of a plug-in. See "Standard settings panel family type codes" in the *IDE SDK Developer's Guide*. |
| `newestAPIVersion` | Specifies the most recent API version a plug-in is compatible with. Most plug-ins should use `DROPINPANELAPIVERSION`. |

| | |
|---|---|
| `dataversion` | Specifies the version number of a panel's settings data. |
| `panelscope` | Specifies the scope of a plug-in, which determines which CodeWarrior IDE dialog the plug-in appears in. Use one of `panelScopeGlobal`, `panelScopeProject`, or `panelScopeTarget`. |

Remarks The `PanelFlags` structure reports information to the IDE about a plug-in's capabilities. The `CWPlugin_GetDropInFlags` entry point for a panel plug-in returns a `PanelFlags` structure.

See Also "Specifying Preference Panel Capabilities" in the *IDE SDK Developer's Guide*

"Specifying Panel Family" in the *IDE SDK Developer's Guide*

"PanelFlags Structure" in the *IDE SDK Developer's Guide*

"Settings Panel Flags" in the *IDE SDK Developer's Guide*

## PanelParamBlkPtr

Description A pointer to a `PanelParameterBlock`.

Prototype
```
#include <CWDropInPanel.h>
typedef PanelParameterBlock* PanelParamBlkPtr;
```

Remarks `PanelParamBlkPtr` is a pointer to a panel parameter block, `PanelParameterBlock`. The IDE passes a `PanelParamBlkPtr` to the panel plug-in to communicate information to the panel.

See Also "PanelParameterBlock" on page 336

## PanelParameterBlock

Description Contains information passed to the plug-in by the IDE, and required by the IDE when servicing calls made by panel plug-ins.

Prototype
```
#include <CWDropInPanel.h>
/* parameter block -- this is passed to the dropin
at each request */
```

```
typedef struct PanelParameterBlock {
  /* common to all dropins */
  long   request;
         /* [->]  requested action (see below)   */
  long   version;
         /* [->]  version # of shell's API       */
  void   *context;
         /* [->]  reserved for use by shell      */
  void   *storage;
         /* [<->] reserved for use by the dropin */
  FSSpec targetfile;
         /* [->]  FSSpec of current project      */

  /* specific to panels */
  CWDialog    dialog;
    /* [->]  pointer to PreferencesÉ dialog    */
  Handle      originalPrefs;
    /* [->]  panel's original options data     */
  Handle      currentPrefs;
    /* [<->] panel's current options data      */
  Handle      factoryPrefs;
    /* [<->] panel's "factory" options data    */
  EventRecord *event;
    /* [->]  dialog event (for reqFilterEvent) */
  short       baseItems;
    /* [->]  # of items in dialog shell        */
  short       itemHit;
    /* [<->] for reqFilterEvent and reqItemHit */
  Boolean     canRevert;
    /* [<-]  enable Revert button              */
  Boolean     canFactory;
    /* [<-]  enable Factory button             */
  Boolean     reset;
    /* [<-]  access paths must be reset        */
  Boolean     recompile;
    /* [<-]  files must be recompiled          */
  Boolean     relink;
    /* [<-]  project must be relinked          */
  AEKeyword   prefsKeyword;
    /* [->]  for reqAEGetPref and reqAESetPref */
  AEDesc      prefsDesc;
```

```
    /* [->]  for reqAESetPref                  */
  Boolean     debugOn;
    /* [->] turning on debugging?              */
  FSSpec      oldtargfile;
   /* [->] previous project file FSSpec        */

  /* version 2 API */
  CWPanelCallbacks*       callbacks;

  /* version 3 API */
  Boolean  reparse;          /* [<-] project must
be reparsed   */

  /* version 4 API */
  DragReference   dragref;
       /* [->] for drag-related requests  */
  Rect            dragrect;
       /* [<-] rect to track mouse in     */
  Point           dragmouse;
       /* [->] mouse location during drag */

  /* version 5 API */
  unsigned char   toEndian;
                 /* [->]  for reqByteSwapData, the
                    endian we are swapping to */

  /* CWPro 3 temporary placeholders for opaque
references to prefs data. These will be removed in
Pro 4. */
  CWMemHandle      originalPrefsMemHandle;
  CWMemHandle      currentPrefsMemHandle;
  CWMemHandle      factoryPrefsMemHandle;
  CWMemHandle      panelPrefsMemHandle;

  /* version 11 api */
  long listViewCellRow;
       /* [->]  the cell row of the listView */
  long listViewCellCol;
       /* [->]  the cell row of the listView */
  /*
    These fields are supported only from
DropinPanelPrefVersion 12 and higher for long
```

```
filename support. Older plug-ins will get will use
FSSpec based fields targetFile and oldTargetFile

    Since the IDE is LFN enabled, the will attempt
to convert the internal LFN data struture to
create a valid FSSpec. If the API fails to create a
valid FSSpec, the FSSpec name field would be
filled with the project name.

    The newer plug-ins or those plug-ins that
decide to upgrade to the newer library(PluginLib5)
will have to be aware that these fields are the new
means of accessing the target file and old target
file. The older fsspec based fields will be
deprecated for the newer plug-ins (version 12 and
higher) and will be zeroed out.
*/

  /* version 12 api */
  CWPanelFileSpec  lfnTargetFile;
  CWPanelFileSpec  lfnOldTargetFile;

} PanelParameterBlock, *PanelParameterBlockPtr;
```

Fields

The fields in `PanelParameterBlock` include:

| | |
|---|---|
| `request` | Specifies the action requested of a panel by the IDE. Also determines which of the remaining parameter block fields are required to service the request. |
| `version` | Specifies the current version of the panel API. |
| `context` | Reserved for use by the IDE. Do not modify this field. |
| `storage` | Reserved for use by the panel drop-in. The IDE guarantees that the contents of this field will be preserved between `reqInitPanel` and `reqTermPanel` requests to the panel. Most plug-ins should *not* use this field. See important warning below. |

| | |
|---|---|
| `targetfile` | Specifies the location of the current project file. |
| `dialog` | Contains a pointer to the IDE's **Target Settings** dialog box for plug-ins that clear the `usesStrictAPI` flag (see the *IDE SDK Developer's Guide* for detail about this flag). All new plug-ins should set this flag, and be compiled with `CW_STRICT_DIALOGS` set to true, and so this field should not be used. |
| `originalPrefs` | Contains a copy of the most recently saved settings data. Plug-ins should not modify this field. |
| `currentPrefs` | Contains the current panel settings data. Plug-ins are expected to modify this field. |
| `factoryPrefs` | Contains the default settings data for the panel. Plug-ins modify this field when the IDE sends the `reqGetFactory` request. |
| `event` | Contains a copy of the most recently received (not yet handled) Mac OS event. Plug-ins which implement user items (special controls) may need to examine and possibly modify this field when responding to a `reqFilter` request. |
| `baseItems` | Indicates the number of items in the host dialog, prior to addition of the panel's controls. Plug-ins should subtract this number from `itemHit` when responding to `reqItemHit`, `reqDrawCustomItem`, `reqActivateItem`, `reqDeactivateItem`, `reqHandleKey`, and `reqHandleClick` requests. The resulting adjusted item number corresponds to item numbers in the panel's original `'PPob'` item list. |

| | |
|---|---|
| `itemHit` | Specifies the number of the item with which the user has just finished interacting. Also used to specify **Edit** menu items, for `reqFindStatus` and `reqObeyCommand` requests. Plug-ins can modify this value to simulate hits in other items |
| `canRevert` | Plug-ins set this flag when responding to a `reqItemHit` request, to indicate whether the current settings differ from the most recently saved (original) settings. When set true, the IDE enables the **Revert** button in the **Target Settings** dialog. |
| `canFactory` | Plug-ins set this flag when responding to a `reqItemHit` request, to indicate whether the current settings differ from the factory default settings. When set true, the IDE enables the **Factory Settings** button in the **Target Settings** dialog. |
| `reset` | Plug-ins set this flag when responding to a `reqValidate` request, to indicate whether the current settings require the IDE to re-scan for project files in the project's access paths. When set true, the IDE re-scans for files. |
| `recompile` | Plug-ins set this flag when responding to a `reqValidate` request, to indicate whether the current settings require the IDE to recompile all files in the project. When set true, the IDE recompiles the project. |
| `relink` | Plug-ins set this flag when responding to a `reqValidate` request, to indicate whether the current settings require the IDE to re-link the target executable. When set true, the IDE re-links the project. |
| `prefsKeyword` | Specifies the Apple Event keyword for the pending Apple Event as a four-character code. |

| | |
|---|---|
| `prefsDesc` | Contains the data for the pending Apple Event, in an Apple Event descriptor. The plug-in is responsible for disposing this when responding to a `reqAESetPref` request, and for allocating it when responding to a `reqAEGetPref` request. |
| `debugOn` | Specifies whether the user has enabled debugging in the **Project** menu. |
| `oldtargfile` | Specifies the previous name and location of the current project file, prior to being renamed. |
| `reparse` | Set by a plug-in if the project's files must be reprocessed by the class browser. This field is currently unused. |
| `dragref` | Specifies the Drag Manager drag reference for the current drag operation. The panel uses this value when making calls to the Drag Manager. |
| `dragrect` | Specifies the rectangle that the IDE treats as the drag destination. |
| `dragmouse` | Specifies the current mouse location during a drag operation. |
| `toEndian` | Specifies the byte ordering to which setting data should be converted during a `reqByteSwapData` request (or the *current* byte ordering of the settings data, during a `reqFirstLoad` request). Contains either 1 for "big endian" or 2 for "little endian." |
| `originalPrefsMemHandle` | Obsolete. Do not use. |
| `currentPrefsMemHandle` | Obsolete. Do not use. |
| `factoryPrefsMemHandle` | |

Obsolete. Do not use.

`panelPrefsMemHandle`

Obsolete. Do not use.

`listViewCellRow`

Specifies the row within a list view panel.

`listViewCellCol`

Specifies the column within a list view panel. (The comment in the header file is incorrect - it's the column, as the name implies, not the row.)

`lfnTargetFile`

Specifies the new file name for long filename support. "lfn" stands for "long file name."

`lfnOldTargetFile`

Specifies the old file name for long filename support. "lfn" stands for "long file name."

Remarks

The CodeWarrior IDE issues commands to Mac OS settings panel plug-ins by calling the panel and passing a parameter block data structure, `PanelParameterBlock` to the plug-in's `main()` entry point. The panel parameter block contains information about the kind of action the panel should perform and other information that the panel might need when servicing the IDE requests.

The IDE does not guarantee that allds of the parameter block are valid for every request. See individual requests for details of field validity.

**CAUTION**

All instances of the same plug-in share the `storage` field. That is, the IDE provides one copy of the `storage` field per plug-in, not one per instance of a panel. Thus, if two projects using a settings panel plug-in are open simultaneously, the `storage` field is shared by both panels. This sharing can lead to problems accessing global storage. In practice, plug-ins should not use the `storage` field.

See Also "PanelParameterBlock" on page 336

# Constants for Settings Panel Plug-ins

The predefined symbols for settings panels are:

- `CW_STRICT_DIALOGS`
- `DROPINPANELAPIVERSION`
- `menu_Clear`
- `menu_Copy`
- `menu_Cut`
- `menu_Paste`
- `menu_SelectAll`
- `panelScopeGlobal`
- `panelScopeProject`
- `panelScopeTarget`
- `reqActivateItem`
- `reqAEGetPref`
- `reqAESetPref`
- `reqByteSwapData`
- `reqDeactivateItem`
- `reqDragDrop`
- `reqDragEnter`
- `reqDragExit`
- `reqDragWithin`
- `reqDrawCustomItem`
- `reqFilter`
- `reqFindStatus`
- `reqFirstLoad`
- `reqGetData`
- `reqGetFactory`
- `reqHandleClick`
- `reqHandleKey`

- reqInitDialog
- reqInitPanel
- reqItemHit
- reqObeyCommand
- reqPutData
- reqReadSettings
- reqRenameProject
- reqSetupDebug
- reqTermDialog
- reqTermPanel
- reqUpdatePref
- reqValidate
- reqWriteSettings
- supportsByteSwapping
- supportsTextSettings
- usesStrictAPI

## CW_STRICT_DIALOGS

Description

A compile-time switch that controls whether a Mac OS hosted settings panel can use the Mac OS dialog manager.

Prototype

```
#include <CWDropInPanel.h>
#define CW_STRICT_DIALOGS 0
```

Remarks

When CW_STRICT_DIALOGS is defined as any nonzero value, settings panels for a Mac OS host may not utilize Mac OS dialog manager routines to manipulate settings panel controls. Instead, a panel plug-in must rely entirely on the settings panel API to draw, get, and set dialog items.

CW_STRICT_DIALOGS controls the type of the dialog field in the PanelParameterBlock passed to the plug-in. When true, dialog is an anonymous pointer type. When false, dialog is a Mac OS DialogPtr. This define controls compile-time syntactic checks, not runtime behavior of the IDE.

`CW_STRICT_DIALOGS` should be set `true` (nonzero) for all current and future Mac OS plug-ins. The IDE no longer support settings panels compiled with `CW_STRICT_DIALOGS` defined as `false`.

**NOTE** All Mac OS settings panels should define `CW_STRICT_DIALOGS` as true and should also set the `usesStrictAPI` bit in their `dropinflags`.

See Also "Settings Panel Flags" in the *IDE SDK Developer's Guide*

## DROPINPANELAPIVERSION

Description Specifies the current version of the settings panel plug-in API at compile time.

Prototype
```
#include <CWDropInPanel.h>  /* Windows */
#include <CWDropInPanel.h>       /* Mac OS */
```

Remarks This predefined symbol specifies the current version of the settings panel plug-in API. This value is most useful in specifying compatible IDE versions in the `PanelFlags` structure returned by a panel's `CWPlugin_GetDropInFlags` entry point.

See Also "Specifying Preference Panel Capabilities" in the *IDE SDK Developer's Guide*

## kCurrentCWHelpInfoVersion

Description Indicates the current version of a `CWHelpInfo` structure.

Prototype
```
#include "CWPlugins.h"
```

Remarks Windows plug-ins should set the `version` field of a `CWHelpInfo` structure to this value.

See Also "CWHelpInfo" on page 333

"CWPlugin_GetHelpInfo Entry Point" on page 332

## menu_Clear

Description Represents the **Clear** command in the **Edit** menu.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this value to Mac OS panel plug-ins during `reqFindStatus` and `reqObeyCommand` requests in the `itemHit` field of the `PanelParameterBlock`, to indicate the relevant **Edit** menu item.

See Also "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"reqFindStatus" on page 357

"reqObeyCommand" on page 363

## menu_Copy

Description Represents the **Copy** command in the **Edit** menu.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this value to Mac OS panel plug-ins during `reqFindStatus` and `reqObeyCommand` requests in the `itemHit` field of the `PanelParameterBlock`, to indicate the relevant **Edit** menu item.

See Also "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"reqFindStatus" on page 357

"reqObeyCommand" on page 363

## menu_Cut

Description Represents the **Cut** command in the **Edit** menu.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this value to Mac OS panel plug-ins during `reqFindStatus` and `reqObeyCommand` requests in the `itemHit` field of the `PanelParameterBlock`, to indicate the relevant **Edit** menu item.

See Also "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"reqFindStatus" on page 357

"reqObeyCommand" on page 363

## menu_Paste

Description — Represents the **Paste** command in the **Edit** menu.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks — The IDE sends this value to Mac OS panel plug-ins during `reqFindStatus` and `reqObeyCommand` requests in the `itemHit` field of the `PanelParameterBlock`, to indicate the relevant **Edit** menu item.

See Also — "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"reqFindStatus" on page 357

"reqObeyCommand" on page 363

## menu_SelectAll

Description — Represents the **Select All** command in the **Edit** menu.

Prototype
```
#include <CWDropInPanel.h>
enum {
```

Remarks — The IDE sends this value to Mac OS panel plug-ins during `reqFindStatus` and `reqObeyCommand` requests in the `itemHit` field of the `PanelParameterBlock`, to indicate the relevant **Edit** menu item.

See Also — "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"reqFindStatus" on page 357

"reqObeyCommand" on page 363

## panelScopeGlobal

Description — Indicates that a settings panel should appear in the **Edit > Preferences** dialog.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks — Settings panels return this value in the `panelscope` field of the `PanelFlags` structure, from their `CWPlugin_GetDropInFlags` entry point.

Settings panels which specify a scope of `panelScopeGlobal` appear in the **Preferences** dialog, and are always enabled, regardless of whether a project is open.

See Also — "PanelFlags Structure" in the *IDE SDK Developer's Guide*

## panelScopeProject

Description — Indicates that a settings panel should appear in the **Version Control Settings** dialog box.

Prototype — `#include <CWDropInPanel.h>`

Remarks — Settings panels return this value in the `panelscope` field of the `PanelFlags` structure, from their `CWPlugin_GetDropInFlags` entry point.

Settings panels which specify a scope of `panelScopeProject` appear in the **Version Control Settings** dialog box and are always enabled, regardless of whether a project is open. Currently, only version control plug-ins should use this scope.

See Also — "PanelFlags Structure" in the *IDE SDK Developer's Guide*

## panelScopeTarget

Description — Indicates that a settings panel should appear in the **Edit > Target Settings** dialog.

Prototype — `#include <CWDropInPanel.h>`

Remarks — Settings panels return this value in the `panelscope` field of the `PanelFlags` structure, from their `CWPlugin_GetDropInFlags` entry point.

Settings panels that specify a scope of `panelScopeTarget` appear in the **Target Settings** dialog. The IDE enables these panels if at least one project is open (and that project uses plug-ins associated with the settings panel). P associated with compilers and linkers use this scope.

See Also — "PanelFlags Structure" in the *IDE SDK Developer's Guide*

## reqActivateItem

Description — Requests that a Mac OS panel redraw a custom dialog item to show it has input focus.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE sends this request when a custom dialog box item acquires input focus. Plug-ins should respond by highlighting the custom item.

Mac OS — On entry:

- `currentPrefs` contains the current settings data.
- `itemHit` contains the number of the custom dialog item to highlight.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also — "Managing Input Focus" in the *IDE SDK Developer's Guide*

"Managing Input Focus (Mac OS)" in the *IDE SDK Developer's Guide*

## reqAEGetPref

Description — Requests that a Mac OS panel return the value of a setting in response to an Apple Event.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE asks the panel to access an item of settings information based on an Apple Event.

Mac OS — On entry:

- `currentPrefs` contains the settings data to extract the item from.
- `prefsKeyword` contains the 4 character (32-bit) Apple Event keyword specifying the setting to return.

On exit:

- `prefsDesc` contains an Apple Event descriptor containing the data of the requested setting. The plug-in must allocate event using `AECreateDesc` from the Mac OS toolbox.

See Also "Apple Event Dictionary ('aete') Resource" in the *IDE SDK Developer's Guide*

## reqAESetPref

Description Requests that a Mac OS panel change the value of a setting in response to an Apple Event.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE asks the panel to store an item of settings information based on an Apple Event.

Mac OS On entry:

- `currentPrefs` contains the settings data on which to operate.
- `prefsKeyword` contains the 4 character (32-bit) Apple Event keyword specifying the setting to modify.
- `prefsDesc` contains an Apple Event descriptor containing the new data for the specified setting.

On exit:

- `currentPrefs` contains the changed settings data.

See Also "Apple Event Dictionary ('aete') Resource" in the *IDE SDK Developer's Guide*

## reqByteSwapData

Description Asks the panel to adjust its settings data for endian-ness.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE sends this request to adjust a panel's settings data to little-endian or big-endian format.

Mac OS On entry:

- `currentPrefs` contains the settings data on which to operate.
- `toEndian` indicates the endian-ness to which the plug-in must convert its data.

On exit:

- `currentPrefs` contains the swapped settings data.

See Also "Handling a reqByteSwapData Request in the *IDE SDK Developer's Guide*

## reqDeactivateItem

Description Requests that a Mac OS panel redraw a custom control that no longer has input focus.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE sends this request when a custom dialog item loses input focus. plug-ins should respond by un-highlighting the custom dialog item.

Mac OS On entry

- `currentPrefs` contains a handle to a copy of the panel's current settings data.
- `itemHit` contains the dialog item to draw without the input focus.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also "Managing Input Focus" in the *IDE SDK Developer's Guide*

"Managing Input Focus (Mac OS)" in the *IDE SDK Developer's Guide*

## reqDragDrop

Description Informs a Mac OS panel that a dragged item has been dropped on it.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE informs the panel that the user has dropped an object on an item. A panel normally responds by extracting data from the drop using Drag Manager routines and by updating its current settings data.

Mac OS On entry:

- `dragref` contains the Drag Manager drag reference value of the current drag operation.
- `dragmouse` contains the mouse location, in local coordinates.
- `dialog` contains a pointer the **Target Settings** dialog box.

- `currentPrefs` contains the settings data on which to operate.
- `itemHit` contains the dialog item onto which the user has dragged the object.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- If the panel sets `itemHit` to a non-zero value, the IDE sends a `reqItemHit` request to the panel with `itemHit` containing the item to act on.

See Also

"Handling Drag and Drop" in the *IDE SDK Developer's Guide*

"reqDragEnter" on page 353

"reqDragExit" on page 354

"reqDragWithin" on page 355

## reqDragEnter

Description

Informs a Mac OS panel that a dragged item has been dragged, but not dropped, onto it.

Prototype

```
#include <CWDropInPanel.h>
```

Remarks

The IDE informs the panel that the user has just dragged, but not dropped, an object onto one of its items. The panel should call the appropriate Drag Manager routines to handle user feedback if the item can receive the object being dragged.

Mac OS

On entry:

- `dragref` contains the Drag Manager drag reference value of the current drag operation.
- `dragmouse` contains the mouse location, in local coordinates.
- `dialog` contains a pointer the **Target Settings** dialog box.
- `currentPrefs` contains the settings data on which to operate.
- `itemHit` contains the dialog item onto which the user has dragged the object.
- `baseItems` contains the number of control items that the IDE has already placed in the Target Setings dialog box.

On exit:

- `dragrect` optionally contains new dimensions that delimit the area that the item responds to subsequent drag requests.

Typically a panel plug-in decreases the values in `dragrect` to ignore scroll bars or increases the values in `dragrect` to enable autoscrolling.

The plug-in also returns an error code, which the IDE interprets as follows:

- `noErr` means the object can be dropped onto the item and the IDE can continue to send `reqDragWithin`, `reqDragExit`, and `reqDragDrop` requests for this drag operation
- `dragNotAcceptedErr` means the item supports dragging and dropping but not for objects of the kind that is currently being dragged. The IDE should not send any more drag requests for the current drag operation
- `paramErr` means the item does not support dragging and dropping. The IDE should not send any more drag requests for the current drag operation

See Also "Handlnig Drag and Drop" in the *IDE SDK Developer's Guide*

"reqDragDrop" on page 352

"reqDragExit" on page 354

"reqDragWithin" on page 355

## reqDragExit

Description Informs a Mac OS panel that a dragged item has been dragged, but not dropped, out of it.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE informs the panel that the user has dragged an object out of an item. The panel should call appropriate Drag Manager routines to handle user feedback for the item.

Mac OS On entry:

- `dragref` contains the Drag Manager drag reference value of the current drag operation.

- `dragmouse` contains the mouse location, in local coordinates.
- `dialog` contains a pointer the **Target Settings** dialog.
- `currentPrefs` contains the settings data on which to operate.
- `itemHit` contains the dialog item onto which the user has dragged the object.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also "Handling Drag and Drop" in the *IDE SDK Developer's Guide*

"reqDragDrop" on page 352

"reqDragEnter" on page 353

"reqDragWithin" on page 355

## reqDragWithin

Description Informs a Mac OS panel that a dragged item has been dragged, but not dropped, within it.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE informs the panel that the user has dragged, but not dropped, an object within an item. The IDE sends this request to allow the panel to track the user's mouse movements during a drag operation and to perform any additional drop point highlighting that may be required.

Mac OS On entry:

- `dragref` contains the Drag Manager drag reference value of the current drag operation.
- `dragmouse` contains the mouse location, in local coordinates.
- `dialog` contains a pointer the **Target Settings** dialog box.
- `currentPrefs` contains the settings data on which to operate.
- `itemHit` contains the dialog item onto which the user has dragged the object.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also "Handling Drag and Drop" in the *IDE SDK Developer's Guide*

"reqDragDrop" on page 352

"reqDragEnter" on page 353

"reqDragExit" on page 354

## reqDrawCustomItem

Description — Asks a Mac OS panel to draw a custom dialog item.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE asks the panel to draw a custom dialog box item. The panel should save and restore any port characteristics it modifies.

Mac OS — On entry:

- `itemHit` contains the dialog item to draw.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also — "Drawing Custom Items" in the *IDE SDK Developer's Guide*

## reqFilter

Description — Asks a Mac OS panel to respond to a low-level Mac OS event.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE asks the panel to process a Mac OS event. The panel can use this call to handle custom dialog controls.

Mac OS — On entry:

- `event` contains a Mac OS event.
- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- `itemHit` contains the number of the item in the **Target Settings** dialog box that the user selected.

See Also — "Filtering Low Level Events" in the *IDE SDK Developer's Guide*

## reqFindStatus

Description — Asks a Mac OS panel to determine the enabled state of an **Edit** menu item when a custom dialog item has input focus.

Prototype

```
#include <CWDropInPanel.h>
```

Remarks — The IDE sends this request to query the panel about **Edit** menu commands it supports for the dialog item that has the input focus. The panel returns the status of the item specified in the last `reqActivateItem` request. The IDE always sends a `reqActivateItem` request before sending a `reqFindStatus` request.

The IDE automatically supports standard text field items. It only sends the `reqFindStatus` request for custom dialog items.

Mac OS — On entry:

- `itemHit` contains the value of the Edit menu command that the dialog item does or doesn't support.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- the plug-in sets `itemHit` to `true` if the item supports the **Edit** command or `false` if not.

See Also

## reqFirstLoad

Description — Informs a panel that a new target has been loaded.

Prototype

```
#include <CWDropInPanel.h>
```

Remarks — The IDE sends all panels this request when a new target is loaded. Most plug-ins do not need to respond to this request.

Mac OS — On entry:

- `currentPrefs` contains the settings data on which to operate.
- `toEndian` indicates the current endian-ness of the data.
- `targetFile` specifies the location of the current target file.

**NOTE** `toEndian` specifies the current endian-ness of the data, rather than the endian-ness to which the plug-in should convert, unlike the `reqByteSwapData` request.

See Also "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

## reqGetData

Description Asks a panel to extract data values from its panel.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this request to ask the panel to copy the current settings of its controls into its settings handle. The IDE sends this request when the user saves the current settings.

Windows A plug-in calls `CWPanelGetCurrentPrefs` to obtain its current preferences data handle. Handles can be resized using `CWResizeMemHandle`. A plug-in extracts values from its panel UI items using calls such as `CWPanelGetItemValue` and `CWPanelGetItemText`, and stores the item values in its current preferences handle directly.

Mac OS On entry:

- `currentPrefs` contains the settings data on which to operate.
- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- `currentPrefs` contains the settings data retrieved from the panel's dialog controls.

See Also "Handling a reqGetData Request" in the *IDE SDK Developer's Guide*

## reqGetFactory

Description Asks a panel to return its default settings.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE asks the panel to return its default settings data.

Windows A plug-in calls `CWPanelGetFactoryPrefs` to obtain its factory settings handle. The plug-in then modifies the handle contents to contain default values for all settings.

Mac OS On entry:

- `factoryPrefs` contains the settings data on which to operate.
- `dialog` contains a pointer to the **Target Settings** dialog box (if `dialog` is not `NULL`, the dialog box is currently being displayed).
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- `factoryPrefs` contains the panel's default settings data

See Also "Handling a reqGetFactory Request" in the *IDE SDK Developer's Guide*

## reqHandleClick

Description Asks a Mac OS panel to act on a mouse click on a custom dialog item.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this request when a panel's custom dialog item receives a mouse click. The IDE only sends this request if the item is active.

Mac OS On entry:

- `event` contains the Mac OS event record specifying the mouse click.
- `currentPrefs` contains a handle to a copy of the panel's current settings data.
- `itemHit` contains the dialog item that is the target of the mouse click.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- If the panel sets `itemHit` to a non-zero value, the IDE sends a `reqItemHit` request to the panel with `itemHit` containing the item on which to act.

See Also "Handling User Interaction" in the *IDE SDK Developer's Guide*

## reqHandleKey

Description Asks a Mac OS panel to act on a key press directed at a custom dialog item.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this request when a panel's custom dialog item receives a keyboard event. The IDE only sends this request if the item is active.

Mac OS On entry:

- `event` contains the Mac OS event record specifying the keyboard event.
- `currentPrefs` contains a handle to a copy of the panel's current settings data.
- `itemHit` contains the dialog item that is the target of the keyboard event.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- If the panel sets `itemHit` to a non-zero value, the CodeWarrior IDE will send a `reqItemHit` request to the panel with `itemHit` containing the item on which to act.

See Also "Handling User Interaction" in the *IDE SDK Developer's Guide*

## reqInitDialog

Description Asks a panel to prepare to be displayed.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this request just before a panel is displayed when the user selects the panel in the **Target Settings** dialog. In response to this request, a panel should construct its user interface.

Windows Panels which include a list box control must construct the contents of the item's list using `CWPanelInsertListItem` during the `reqInitDialog` request. The IDE does not support constructing list boxes from resource descriptions. Panels can also set item values with `CWPanelSetItemValue` and enable and disable items with `CWPanelEnableItem`.

Mac OS On entry:

- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also "Handling a reqInitDialog Request" in the *IDE SDK Developer's Guide*

## reqInitPanel

Description Asks a panel plug-in to initialize its state.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE sends this request when a plug-in is first loaded into memory. In response, plug-ins should initialize any internal state. This request is a deprecated synonym for the `reqInitialize` request.

Mac OS On entry:

- `version` contains the runtime version of the panel plug-in API that the IDE supports.
- `storage` contains the value of a pointer that the IDE saves between requests to the panel until the IDE sends a `reqTermPanel` request.
- `targetfile` contains the Mac OS file specification of the active project.

See Also "Handling a reqInitialize (reqInitPanel) Request" in the *IDE SDK Developer's Guide*

## reqItemHit

Description Informs the panel of user interaction with a dialog item.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks

The IDE sends this request immediately after user interaction with a control. In response, plug-ins normally get, set, enable, disable, and show or hide other items.

Before returning to the IDE and after accounting for any changes in its settings data resulting from the user interaction, a plug-in should indicate whether the current panel settings match the most recently saved settings, and the factory default settings. The IDE uses this information to enable and disable the **Revert Panel** and **Factory Settings** buttons.

Windows

Windows panels set the state of the factory flag using `CWPanelSetFactoryFlag` and the state of the revert flag using `CWPanelSetRevertFlag`. Plug-ins obtain the current settings handle with `CWPanelGetCurrentPrefs`, the original (most recently saved) settings with `CWPanelGetOriginalPrefs`, and the factory default settings with `CWPanelGetFactoryPrefs`.

Mac OS

On entry:

- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.
- `itemHit` contains the number of the item in the panel that the user selected.
- `originalPrefs` contains the settings at the time the **Target Settings** dialog first appeared or the settings panel was first displayed.
- `factoryPrefs` contains the settings the panel returned to the IDE for the `reqGetFactory`.
- `currentPrefs` contains the settings data on which to operate.

On exit:

- `currentPrefs` contains the changed settings data.
- `canRevert` is true if changes in the settings data requires the IDE to activate the **Target Settings** dialog box Revert button.
- `canFactory` is true if changes in the settings data requires the IDE to activate the **Target Settings** dialog box Factory button.

See Also

"Handling a reqItemHit Request" in the *IDE SDK Developer's Guide*

## reqObeyCommand

Description — Asks a Mac OS panel to act on an **Edit** menu command.

Prototype

```
#include <CWDropInPanel.h>
```

Remarks — The IDE sends this request when the user applies an **Edit** menu command to a custom panel item having input focus. The request applies to the item specified in the last `reqActivateItem` request. The IDE always sends `reqActivateItem` and `reqFindStatus` requests before sending a `reqObeyCommand` request.

The IDE automatically supports **Edit** menu commands for standard text field items. It only sends the `reqFindStatus` request for custom dialog items.

Mac OS — On entry:

- `itemHit` contains the value of the command to perform. `itemHit` only specifies one of the commands that the panel supports, based on previous `reqFindStatus` requests.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

On exit:

- if the panel sets `itemHit` to a non-zero value, the CodeWarrior IDE will send a `reqItemHit` request to the panel with `itemHit` containing the item on which to act.

See Also — "Handling Edit Menu Commands" in the *IDE SDK Developer's Guide*

"Managing Input Focus" in the *IDE SDK Developer's Guide*

## reqPutData

Description — Asks a panel to install its settings in its dialog items.

Prototype

```
#include <CWDropInPanel.h>
```

Remarks — The IDE sends this request to indicate that the panel should install values from its settings handle in its panel controls. The IDE sends this request prior to displaying the panel's user interface items.

Panels install values in controls with `CWPanelSetItemValue`, `CWPanelSetItemText`, and `CWPanelSetItemTextHandle`.

Panels enable and disable items with `CWPanelEnableItem`. Panels hide and show items with `CWPanelShowItem`.

Windows — A panel obtains its current settings handle with `CWPanelGetCurrentPrefs`.

Mac OS — On entry:

- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.
- `currentPrefs` contains the on which to settings data to operate.

See Also — "Handling a `reqPutData` Request" in the *IDE SDK Developer's Guide*

## reqReadSettings

Description — Asks a panel to import XML settings data.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE sends the `reqReadSettings` request when importing a project from XML. A plug-in should respond by reading all expected name-value pairs from the XML input stream with calls such as `CWReadIntegerSetting`, `CWGetIntegerValue`, `CWGetArraySettingElement`, `CWGetStructureSettingField`, and `CWGetNamedSetting`.

A panel returns the newly read settings to the IDE by storing them in its current settings handle. A plug-in can resize the handle by calling `CWResizeMemHandle`.

Windows — Windows plug-ins read XML settings into the current settings handle, obtained by calling `CWPanelGetCurrentPrefs`.

Mac OS — On entry:

- `currentPrefs` contains the settings data on which to operate.

See Also — "Handling a `reqReadSettings` Request" in the *IDE SDK Developer's Guide*

## reqRenameProject

Description — Informs the panel that the project name has changed.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE asks the panel to change its settings information based on a new project name. The IDE sends this request when creating a new project based on a project stationery document. The IDE does *not* send this request when the user renames a project using Windows Explorer or the Mac OS Finder.

Mac OS — On entry:

- `oldtargfile` contains the Mac OS file specification for the old target file.
- `currentPrefs` contains the settings data on which to operate.

On exit:

- `currentPrefs` contains the changed settings data.

See Also — "Handling a `reqRenameProject` Request" in the *IDE SDK Developer's Guide*

## reqSetupDebug

Description — Informs the panel that debugging has been enabled or disabled.

Prototype — `#include <CWDropInPanel.h>`

Remarks — The IDE asks the panel to change its settings information to support debugging of the current project. If the state of debugging does not affect a panel, this request can be ignored.

Windows — Windows plug-ins can determine whether debugging is enabled by calling `CWPanelGetDebugFlag`.

Mac OS — On entry:

- `currentPrefs` contains the settings data on which to operate.
- `debugOn` is `true` if debugging the project is enabled or `false` if debugging is disabled.

On exit:

- `currentPrefs` contains the changed settings data.

See Also "Handling a `reqSetupDebug` Request" in the *IDE SDK Developer's Guide*

"CWPanelGetDebugFlag" on page 276

## reqTermDialog

Description Informs a panel that its user interface is about to be closed.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE asks the panel to prepare to be removed from the **Target Settings** dialog box. The IDE sends this request when the user changes panels or when the user closes the **Target Settings** dialog box.

Mac OS On entry:

- `dialog` contains a pointer to the **Target Settings** dialog box.
- `baseItems` contains the number of control items that the IDE has already placed in the **Target Settings** dialog box.

See Also "Handling a `reqTermDialog` Request in the *IDE SDK Developer's Guide*

## reqTermPanel

Description Informs the panel that it is about to be unloaded from memory.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks The IDE issues this request prior to unloading a panel from memory. This constant is a deprecated synonym for the `reqTerminate` request.

Plug-ins should clean up internal state and free any resources they acquired when responding to the `reqInitPanel` request.

Mac OS On entry:

- `version` contains the runtime version of the panel plug-in API that the IDE supports.
- `storage` contains the value of a pointer that the IDE saved between requests to the panel since the IDE sent a `reqInitPanel` request.

- `targetfile` contains the Mac OS file specification of the active project.

See Also "Handling a `reqTerminate` Request" in the *IDE SDK Developer's Guide*

## reqUpdatePref

Description Asks a panel to update the version of its settings data.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE asks the panel to update an older version of its settings data to the latest version. plug-ins modify the contents of the current settings handle to return the updated settings to the IDE.

**NOTE** Plug-ins must always store the data version in the first 16-bit integer of the settings data handle.

Typically, plug-ins construct a new settings handle containing default values for current settings and then copy and convert any values still supported from the old settings data. The current default settings can be constructed using the same code that responds to the `reqGetFactory` request. The current settings handle may need to be expanded, by calling `CWResizeMemHandle`.

Windows Windows plug-ins obtain the current settings data handle by calling `CWPanelGetCurrentPrefs`. Plug-ins return updated settings by modifying the handle's contents directly.

Mac OS On entry:

- `currentPrefs` contains the settings data on which to operate.

On exit:

- `currentPrefs` contains the changed settings data.

See Also "Handling a `reqUpdatePref` Request" in the *IDE SDK Developer's Guide*

## reqValidate

Description Asks a plug-in to determine any actions required by the IDE in response to changes in the plug-in's settings.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE sends this request to determine whether changes in the panel's settings (the differences between the original state and the current state) require the project to reset its file paths, to be recompiled, or to be relinked.

Windows Windows plug-ins obtain the current settings by calling `CWPanelGetCurrentPrefs` and the most recently saved settings by calling `CWPanelGetOriginalPrefs`.

To indicate whether project paths should be reset, a plug-in calls `CWPanelSetResetPathsFlag`. To indicate whether the project should be recompiled, a plug-in calls `CWPanelSetRecompileFlag`. To indicate whether the project should be relinked, a plug-in calls `CWPanelSetRelinkFlag`. To indicate whether the browse information for the current project should be reparsed, a plug-in calls `CWPanelSetReparseFlag`.

Mac OS On entry:

- `originalPrefs` contains the most recently saved settings data.
- `currentPrefs` contains the current settings data.

On exit:

- `reset` is true if the project's file paths should be reset.
- `recompile` is true if the project should be recompiled.
- `relink` is true if the project should be relinked.
- `reparse` is true if the project's files should be reprocessed by the class browser. The IDE does not use this flag.

See Also "Handling a `reqValidate` Request" in the *IDE SDK Developer's Guide*

## reqWriteSettings

Description Asks a plug-in to export its settings data as XML.

Prototype `#include <CWDropInPanel.h>`

Remarks The IDE sends this request to tell a plug-in to export its settings as XML. In response, a plug-in should call

The IDE sends the `reqWriteSettings` request when exporting a project to XML. A plug-in should respond by writing its settings data as name-value pairs to the XML output stream, by using calls such as `CWWriteIntegerSetting`, `CWSetIntegerValue`, `CWGetArraySettingElement`, `CWGetStructureSettingField`, and `CWGetNamedSetting`.

Windows — Windows panels obtain their current settings handle to write as XML by calling `CWPanelGetCurrentPrefs`.

Mac OS — On entry:

- `currentPrefs` contains the current settings data.

See Also — "Handling a `reqWriteSettings` Request" in the *IDE SDK Developer's Guide*

## supportsByteSwapping

Description — A panel flag indicating that a plug-in knows how to swap the byte ordering of its settings data.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks — A panel sets this flag in its `PanelFlags` to indicate that it supports the `reqByteSwapData` request. Panels should support this request if at all possible.

See Also — "Handling a `reqByteSwapData` Request" in the *IDE SDK Developer's Guide*

"PanelFlags Structure" in the *IDE SDK Developer's Guide*

"PanelFlags" on page 335

"reqByteSwapData" on page 351

## supportsTextSettings

Description — A panel flag indicating that a plug-in supports XML import and export of its settings data.

Prototype
```
#include <CWDropInPanel.h>
```

Remarks A panel sets this flag in its `PanelFlags` to indicate that it supports the `reqReadSettings` and `reqWriteSettings` requests, used when importing and exporting XML data, respectively.

In response to these requests, a panel should read and write a series of XML settings corresponding to its settings data. Panels should support these requests if at all possible.

See Also "Importing and Exporting Settings Data" in the *IDE SDK Developer's Guide*

"PanelFlags" on page 335

### usesStrictAPI

Description A panel flag indicating that a Mac OS plug-in uses exclusively the CodeWarrior Plug-in API to manipulate user interface controls.

Prototype `#include <CWDropInPanel.h>`

Remarks Panel plug-ins set this bit in the `dropinflags` field of their `DropinFlags` structure to indicate that they utilize only plug-in API routines for manipulating user interface controls, rather than Mac OS dialog manager routines. This setting allows the IDE to construct a panel's user interface with more flexibility, without necessarily creating or exposing a Mac OS dialog manager window.

All new Mac OS panel plug-ins should set this flag, and should also enable `CW_STRICT_DIALOGS` at compile time, to help enforce dialog access using the API only.

See Also "DropinFlags Structure" in the *IDE SDK Developer's Guide*

"CW_STRICT_DIALOGS" on page 345

"PanelFlags" on page 335

## Settings Panel Result Codes

The IDE supports returning additional error codes from panel plug-ins. This section documents the panel-specific error codes.

The API defines the following settings panel error codes:

- kBadPrefVersion
- kMissingPrefErr
- kSettingNotFoundErr
- kSettingTypeMismatchErr
- kInvalidCallbackErr
- kSettingOutOfRangeErr

## kBadPrefVersion

Description Indicates that a panel cannot convert its preference data to the requested version.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>        /* Mac OS   */
```

Remarks A plug-in returns this error code to the IDE when they receive a request to convert a version of the settings data that they do not understand to the current version. This situation arises, for example, when a project containing a newer version of the plug-in data is opened by an IDE running an older version of a plug-in. It also happens when the IDE asks a plug-in to an old version of its data that it may no longer support.

## kMissingPrefErr

Description Unused.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>        /* Mac OS   */
```

## kSettingNotFoundErr

Description Indicates that an XML setting by the specified name could not be found.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>        /* Mac OS   */
```

Remarks The IDE returns this error code when a plug-in calls either `CWGetNamedSetting` or one of the `CWRead` calls, to obtain a setting which does not appear in the plug-in's input XML stream.

## kSettingTypeMismatchErr

Description — Indicates that the requested setting was not of the expected type.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>         /* Mac OS   */
```

Remarks — The IDE returns this error code when a panel plug-in attempts to read an XML settings, and a setting by the requested name is available, but the type of the setting does not match that implied by the API call.

For example, the IDE returns this result if a plug-in attempts to read a string settings using `CWGetIntegerValue`.

## kInvalidCallbackErr

Description — Indicates that the called routine is not available during the current request.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>         /* Mac OS   */
```

Remarks — The IDE returns this error code when a panel plug-in calls an API routine that is not supported for the current request. For example, the IDE returns this value when plug-ins call one of the `CWRead` or `CWWrite` routines, or one of the other XML import or export routines, during a request other than reqReadSettings or reqWriteSettings.

## kSettingOutOfRangeErr

Description — The IDE uses this error code only internally.

Definition
```
#include <CWDropInPanel.h>   /* Windows */
#include <CWDropInPanel.h>         /* Mac OS   */
```

Remarks — The does not currently return this error code to panel plug-ins. This may change in the future.

# 7

# Version Control System Plug-in API

The CodeWarrior IDE supports version control system (VCS) plug-ins. This chapter describes the CodeWarrior IDE Plug-in API for implementing VCS plug-ins.

This chapter covers the following topics:

- Plug-In Callbacks
- VCS Requests
- VCS API Version 1 Compatibility

## Plug-In Callbacks

Callbacks let a plug-in get information from the IDE, send communicate information back to the IDE, ask the IDE to perform actions, and inquire into file states. The VCS API exposes both standard callbacks and callbacks specific to VCS plug-ins.

Version 1 of the VCS API does not support all of these callbacks. See the later section on V1 compatibility mode for which callbacks are available to be used. A callback returns an error of type `CWResult` under the following circumstances:

- A plug-in tries to use a callback in an inappropriate mode.
- A plug-in passes in an invalid parameter.
- A plug-in fails.

Check the return error values of the callbacks in your code to ensure proper operation.

The IDE specifies all files as `CWFileSpec` objects. On the Mac OS, the IDE uses a standard `FSSpec`. On Windows, the IDE usesa structure with one member variable, `path`, which contains the absolute path to the file or directory.

## Standard Callbacks

The following standard callbacks are accessible to VCS plug-ins:

| Callback | 1 | 2 | 3 |
|---|---|---|---|
| `CWGetPluginRequest` | X | | X |
| `CWDonePluginRequest` | X | | X |
| `CWGetAPIVersion` | X | | X |
| `CWGetIDEInfo` | X | | |
| `CWGetCallbackOSError` | X | | |
| `CWSetPluginOSError` | | | |
| `CWGetFileText` | | | |
| `CWReleaseFileText` | | | |
| `CWReportMessage` | | | X |
| `CWAlert` | | | X |
| `CWShowStatus` | | | X |
| `CWUserBreak` | | | X |
| `CWGetNamedPreferences` | | | X |
| `CWStorePluginData` | | | |
| `CWGetPluginData` | | | |
| `CWCreateNewTextDocument` | | | X |
| `CWAllocateMemory` | X | | |
| `CWFreeMemory` | X | | |
| `CWAllocMemHandle` | X | | X |
| `CWFreeMemHandle` | X | | X |

| Callback | 1 | 2 | 3 |
|---|---|---|---|
| CWGetMemHandleSize | X | | X |
| CWResizeMemHandle | X | | X |
| CWLockMemHandle | X | | X |
| CWUnlockMemHandle | X | | X |
| CWPreDialog | X | X | X |
| CWPostDialog | X | X | X |
| CWPreFileAction | | X | |
| CWPostFileAction | | X | |

1: callback can be used during reqInitalize and reqTerminate under Pro 4 IDE.

2: callback is new with plug-in API Version 9 (Pro 4 IDE)

3: callback works with version 1 plug-ins

The following table describes callbacks that have somewhat different behaviors for VCS plug-ins:

| Callback | How it differs |
|---|---|
| CWGetPluginData | These two functions can be used by a VCS plug-in to store non-volatile information associated with a project. Each project has its unique data storage area. These functions have behavioral differences for VCS plug-ins in that the data is stored projectwide and not on a pertarget basis. The filenumber passed in as an argument should always be -1. Any tag that is not all lowercase letters can be used. |
| CWStorePluginData | as CWGetPluginData |
| CWReportMessage | This function will display a message inside of the VCS messages window instead of the errors & warnings window. Any file and line information that is passed in with the message is ignored for VCS plug-ins. |

| Callback | How it differs |
|---|---|
| CWPreDialog | This function takes the `context` that is passed in to the main entry point as its only argument. It tells the IDE to prepare for the plug-in to display a dialog. By calling this function, the IDE can disable any windows and make preparations for the Dialog Manager to be called so it can function properly. |
| CWPostDialog | This function takes as its argument the `context` passed into the main entry poing. It is used by the plug-in to notify the IDE that the plug-in's dialog is finished displaying and has been destroyed so the IDE can reset the windows for the user. |
| CWPreFileAction | This callback takes as its arguments the `context` passed to the main entry point along with a `CWFileSpec` that contains the appropriate file system specification for a file.<br><br>The plug-in can call this function before it attempts to do any type of processing of a file. By calling `CWPreFileAction`, the IDE will make sure that it can do everything possible to insure accessibility of the file by, for example, closing down any access paths the IDE has to the file so the plug-in can open it for exclusive read/writes. |
| CWPostFileAction | Plug-ins that process files should use this callback after all processing of a file is done and all of the plug-in's access paths to the file have been closed. This then allows the IDE to reestablish any access it needs to the file in order to function. The callback takes the `context` that is passed to a plug-in's main entry point along with a `CWFileSpec` indicating which file has just finished being processed by the plug-in. |

### VCS Callbacks

The VCS extension of the base plug-in API features the following VCS specific callbacks. Your plug-in can use these callbacks to initiate actions, retrieve information from the IDE, and send information back to the IDE. The following table shows the VCS callbacks:

| Callback | 1 | 2 |
|---|---|---|
| CWAllowV1Compatibility | | |
| CWGetComment | | |
| CWFileStateChanged | | |
| CWVCSStateChanged | | |
| CWGetProjectFileSpecifier | | |
| CWIsAdvancedRequest | | |
| CWIsRecursiveRequest | | |
| CWIsCommandSupportedRequest | | |
| CWGetDatabaseConnectionInfo | | |
| CWGetCommandStatus | | |
| CWSetCommandStatus | | |
| CWGetVCSItemCount | | |
| CWGetVCSItem | | |
| CWSetVCSItem | | |
| CWGetVCSPointerStorage | | |
| CWSetVCSPointerStorage | | |
| CWDoVisualDifference | X | |
| CWCompletionRatio | | X |
| CWSetCommandDescription | | X |

1: not supported in all older IDEs (Pro2 and earlier)

2: not supported in version 1

As with other callbacks, the first argument to every callback routine contains the `context` object sent to the plug-in's main entry point when it is called by the IDE. If a plug-in calls a callback and while running in a mode that does not allow the callback, the IDE returns `cwErrInvalidCallback`.

### CWAllowV1Compatibility

Description

`CWAllowV1Compatibility` lets plug-ins tell the IDE whether they can run as version 1 plug-ins. It also lets plug-ins gracefully exit if an older version of the IDE calls them.

Prototype

```
CW_CALLBACK CWAllowV1Compatibility(
   CWPluginContext context,
   Boolean canHandleV1Mode,
   Boolean *isV1);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `canHandleV1Mode` | When set to `true`, lets the plug-in run as a version 1 plug-in if the IDE does not recognize version 7+ plug-ins. In other words, this setting lets a plug-in run on an older IDE. When `canHandleV1Mode` is set to `false`, the callback returns an error if the IDE cannot run the plug-in. |
| `isV1` | Specifies whether the plug-in runs as a version 1 plug-in. true indicates that the plug-in runs as a version 1 argument. In that case, the IDE does not send certain requests, and the plug-in cannot use certain callbacks. false indicates that the plug-in runs as a version 7+ plug-in, can handle the full set of requests, and can use the full set of callbacks. |

Remarks

Version 7+ plug-ins must call this callback before otherwise communicating with the IDE. It ensures functionality (either through compatibility emulation by the IDE or by failing to load) in IDE versions earlier than Pro 4.

**NOTE** If `canHandleV1Mode` returns an error, the plug-in should immediately return the error to the IDE, so that the IDE can unload the plug-in. Failure to do so can crash the IDE or the system.

### CWGetComment

Description `CWGetComment` displays a window that asks the user for a comment to go with the file in the VCS database.

Prototype
```
CW_CALLBACK CWGetComment(
   CWPluginContext context,
   const char *pPrompt,
   const char *pComment,
   const long lBufferSize);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `pPrompt` | A pointer to a string that appears as the prompt |
| `pComment` | On return, this parameter contains a pointer to a string that contains the user's comment. |
| `lBufferSize` | A long integer that indicates the maximum length of the buffer in bytes |

Remarks The plug-in can call this method to display a comment dialog box. This method lets the plug-in get a line of comment text from the user.

The function returns `cwNoErr` if the operation succeeded. If the user cancels the operation, the function returns `cwErrUserCanceled`.

### CWFileStateChanged

Description `CWFileStateChanged` tells the IDE that the state of a file changed. This method has been superceded by `CWVCSStateChanged`.

Prototype
```
CW_CALLBACK CWFileStateChanged(
   CWPluginContext context,
   const CWFileSpec *file,
   CWVCSCheckoutState eCheckoutState,
   const CWVCSVersion version);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `file` | A pointer to a file specification. |
| `eCheckoutState` | The new state of the file in question. |
| `version` | The new version of the file in question. |

Remarks This is a deprecated version of `CWVCSStateChanged`. The two routines are identical except that `CWVCSStateChanged` passes the version parameter by reference rather than by value.

**NOTE** The version 8+ API headers no longer declare this method. However, the plug-in API still supports it for backward compatibility. In order to use this routine, plug-ins must define `CWFileStateChanged` as `extern`.

### CWVCSStateChanged

Description `CWVCSStateChanged` tells the IDE when the state of a file in the VCS database has changed.

Prototype
```
CW_CALLBACK CWVCSStateChanged(
   CWPluginContext context,
   const CWFileSpec* file,
   CWVCSCheckoutState eCheckoutState,
   const CWVCSVersion* version);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `file` | A pointer to a file specification. |
| `eCheckoutState` | The new state of the file in question. |
| `version` | The new version of the file in question. |

Remarks The plug-in must use this callback whenever it changes a file on the disk. Possible changes includes changing the file's checkout state due to changes in the VCS database and changing local file's information (such as modification date or locked state). Unless the plug-in uses this callback, the IDE cannot know that the plug-in has changed the file in any way.

The `eCheckoutState` argument must be one of the constants from the following enumeration:

```
enum  // checkout state
{
cwCheckoutStateUnknown
   // unknown
cwCheckoutStateNotCheckedOut
   // not checked out
cwCheckoutStateCheckedOut
   // checked out
cwCheckoutStateNotInDatabase
   // not in database
cwCheckoutStateMultiplyCheckedOut
   // multiply checked out
cwCheckoutStateNotCheckedOutShared
   //not checked out and shared
cwCheckoutStateCheckedOutShared
   // checked out and shared
cwCheckoutStateMultiplyCheckedOutShared
   // multiply checked out and shared
cwCheckoutStateNotCheckedOutBranched
   // not checked out and branched
cwCheckoutStateCheckedOutBranched
   //checked out and branched
cwCheckoutStateMultiplyCheckedOutBranched
   // checked out and branched
cwCheckoutStateNotCheckedOutSharedBranched
   // not checked out, shared and branched
cwCheckoutStateCheckedOutSharedBranched
   // checked out, shared and branched
cwCheckoutStateMultipleCheckedSharedOutBranched
   // checked out, shared and branched
cwCheckoutStateCheckedOutExclusive
   // exclusively checked out
cwCheckoutStateCheckedOutExclusiveShared
   // exclusively checked out and shared
cwCheckoutStateCheckedOutExclusiveBranched
   // exclusively checked out and branched
cwCheckoutStateCheckedOutExclusiveSharedBranche
   // exclusively checked out,
   // shared and branched
cwCheckoutStateMultiplyCheckedOutMask
```

```
   // multiply checked out mask
cwCheckoutStateSharedMask
   // shared mask
cwCheckoutStateBranchedMask
   // branched mask
cwCheckoutStateExclusiveMask
   // exclusive mask
};
```

The `version` argument must be a value from the `CWVCSVersion` structure:

```
typedef struct CWVCSVersion  // version
{
   CWVCSVersionForm  eVersionForm;
      // version form
   CWVCSVersionData  sVersionData;
      // version data
}
```

The version form value must be one of the values from the following enumeration:

```
enum  // version form
{
   cwVersionFormNone     // no record
   cwVersionFormNumeric  // intergral numeric
   cwVersionFormAlpha    // alphabetic
   cwVersionFormDate     // date / time
   cwVersionFormLabel    // label
};
```

The version form value describes which member of the `CWVCSVersionData` union is occupied.

```
typedef union CWVCSVersionData  // version data
{
   unsigned long numeric;  // integral numeric
   char *pAlpha;           // alphabetic
   CWVCSDateTime date;     // date / time
   char *pLabel;           // label
}
```

The following table describes the possible version form values:

| Value | Description |
|---|---|
| `None` | No version information for this item is provided. |
| `Numeric` | In the numeric case the version is an integer, specifically an unsigned long. |
| `Alphanumeric` | In this case the version is represented by a character string. An example of this would be "`1.3.6a2`". |
| `Date` | In the date case the standard library `struct tm` format is used. Any function from the standard library in `<time.h>` can be used to work with these times and do time differences. |
| `Label` | The label case is essentially the same as the alphanumeric case, but is included for clarity. |

### CWDoVisualDifference

Description `CWDoVisualDifference` tells the IDE to display a window showing the contents of two files.

Prototype
```
CW_CALLBACK CWDoVisualDifference(
   CWPluginContext context,
   const CWFileSpec *file1,
   const char *pTitle1,
   const char *pText1,
   unsigned long lengthText1,
   const CWFileSpec *file2,
   const char *pTitle2,
   const char *pText2,
   unsigned long lengthText2);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `file1` | If the file is on the local disk, , a pointer to `CWFileSpec` object that defines the file. Otherwise, `NULL`. |
| `pTitle1` | If the file is on the local disk, `NULL`. Otherwise, a pointer to the name of the file. |

| | |
|---|---|
| pText1 | If the file is on the local disk, NULL. Otherwise, a pointer to the text of the file. |
| lengthText1 | If the file is on the local disk, 0. Otherwise, the length of the text to be displayed, in bytes. |
| file2 | as file1 |
| pTitle2 | as pTitle1 |
| pText2 | as pText1 |
| lengthText2 | as lengthText1 |

Remarks

If the user doesn't cancel the operation, this method modifies the second file. If one file is local, you should specify it as file2, so that any differences between the local copy and the one stored in the database can be applied.

### CWCompletionRatio

Description

CWCompletionRatio tells the IDE .

Prototype

```
CW_CALLBACK CWCompletionRatio(
   CWPluginContext context,
   int totalItems,
   int completedItems);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| context | Private, opaque IDE state. |
| totalItems | The total number of items the plug-in must process in this operation. |
| completedItems | The number of items the plug-in has processed so far. |

Remarks

Plug-ins use this method to report their status to the IDE while performing a long task. For example, a plug-in could periodically use this callback while performing a recursive operation on a directory. When it receives this callback the IDE displays a visual progress bar to the user.

If your plug-in does not call this function, the IDE displays an indeterminate animated progress bar instead.

### CWGetProjectFileSpecifier

`CWGetProjectFileSpecifier` gets the `CWFileSpec` for the project file the plug-in is being asked to process.

Prototype

```
CW_CALLBACK CWGetProjectFileSpecifier(
   CWPluginContext context,
   CWFileSpec *projectFileSpec);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `totalItems` | The total number of items the plug-in must process in this operation. |
| `completedItems` | The number of items the plug-in has processed so far. |

### CWIsAdvancedRequest

`CWIsAdvancedRequest` indicates whether the most recent request from the IDE was an advanced request.

Prototype

```
CW_CALLBACK CWIsAdvancedRequest(
   CWPluginContext context,
   Boolean *isAdvanced);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isAdvanced` | On return, this parameter contains `true` if the most recent request is advanced or `false` if not. |

Remarks

If the request was sent in advanced mode, the plug-in should show the user a dialog box that lets the user choose the more advanced options for a command. For example, to process an advanced history command, the plug-in might show the user a dialog box that would let the user choose to filter the display by user name.

### CWIsRecursiveRequest

`CWIsAdvancedRequest` indicates whether the most recent request from the IDE was a recursive request.

Prototype

```
CW_CALLBACK CWIsRecursiveRequest(
   CWPluginContext context,
   Boolean *isRecursive);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isRecursive` | On return, this parameter contains `true` if the most recent request is recursive or `false` if not. |

Remarks

This callback can be used to determine if the request was sent in the recursive mode. If the request was sent in recursive mode and a directory is encountered in the `CWVCSItem` list of items to process, the plug-in should apply the command to all files in the directory and recursively on any directories the item contains.

### CWIsCommandSupportedRequest

`CWIsCommandSupportedRequest` indicates whether the IDE sent the most recent command to determine whether the plug-in supports the command, rather than to have the plug-in perform the command.

Prototype

```
CW_CALLBACK CWIsCommandSupportedRequest(
   CWPluginContext context,
   Boolean *isCommandSupported);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `isCommandSupported` | On return, this parameter contains `true` if the most recent request is recursive or `false` if not. |

Remarks

The plug-in uses `isCommandSupported` during request negotiation. If the IDE sent the most recent command in this mode, the plug-in should set the command status to one of the following constants:

```
cwCommandStatusCommandUnknown
   // plug-in does not recognize command
cwCommandStatusUnsupported
   // plug-in cannot perform command
```

```
cwCommandStatusSupported
   // plug-in can perform command
```

`CWIsCommandSupportedRequest` has only two valid responses: `cwCommandStatusSupported` and `cwCommandStatusUnsupported`. During execution mode, if the IDE makes a request about which it did not previously query, the plug-in should return `cwCommandStatusCommandUnknown`.

If the IDE sends a command in this mode, the plug-in should not perform the command.

### CWSetCommandDescription

`CWSetCommandDescription` lets a plug-in set custom strings in the VCS menus and in the VCS progress dialog box.

Prototype

```
CW_CALLBACK CWSetCommandDescription(
   CWPluginContext context,
   CWVCSCommandDescription *description);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `description` | A pointer to the command description structure that holds custom strings for the current command. |

Remarks

Plug-ins can use this callback to return more information about the command to the IDE. These descriptions can be used by the IDE to better reflect the appropriate terminology for your command in the VCS menus and dialogs.

After a plug-in receives a negotiation request, the plug-in can use this callback to specify custom strings to display in the user interface. This callback works only in the negotiation stage.

A plug-in specifies information about a command by populating the fields of a `CWVCSCommandDescription` structure:

```
typedef struct CWVCSCommandDescription
{
  long  version;
  char  menuItem[40];
```

```
    char  progressMessage[200];
} CWVCSCommandDescription;
```

When creating a command description structure, a plug-in must set its version field to an appropriate non-zero value. The IDE stores the current version of the command description structure in `cwCommandDescriptionVersion`. Your plug-in can use that constant for the version.

In version 1 of the command description, you can set the `menuItem` string to be a short one or two word description of your command. The IDE uses `menuItem` in the VCS menus. The IDE uses the `progressMessage` string to display more detailed information about the command in the VCS progress dialog box. If the plug-in does not call `CWShowStatus`, the IDE uses the `progressMessage` string as the status message in the VCS progress dialog box.

### CWGetDatabaseConnectionInfo

`CWGetDatabaseConnectionInfo` lets the plug-in obtain the current database connection information.

Prototype

```
CW_CALLBACK CWGetDatabaseConnectionInfo(
   CWPluginContext context,
   CWVCSDatabaseConnection *dbConnection);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `dbConnection` | On return, this parameter contains a pointer to a structure that contains details about the database connection. |

Remarks

This callback lets the plug-in obtain the current database connection information, including:

- The path to the database directory (if applicable)
- The path to the user's local root directory
- The username and password for the user's local root directory

The returned structure has the following form:

```
typedef struct CWVCSDatabaseConnection
{
```

```
    CWFileSpec  sDatabasePath;
    CWFileSpec  sProjectRoot;
    char        *pUsername;
    char        *pPassword;
};
```

### CWGetCommandStatus

`CWGetCommandStatus` gets the IDE's perception of the status of the current operation.

Prototype

```
CW_CALLBACK CWGetCommandStatus(
   CWPluginContext context,
   CWVCSCommandStatus *status);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `status` | On return, this parameter contains a pointer to one of the values from the CWCVSCommandStatus enumeration. |

Remarks

This callback returns the IDE's perception of the current status of the operation. A plug-in can update the state of the operation by using `CWSetCommandStatus`. The following enumeration shows the possible values that the IDE can return:

```
enum  // command status
{
    cwCommandStatusCommandUnknown,
    cwCommandStatusUnknown,
    cwCommandStatusUnsupported,
    cwCommandStatusSupported,
    cwCommandStatusSucceeded,
    cwCommandStatusFailed,
    cwCommandStatusPartial,
    cwCommandStatusCancelled,
    cwCommandStatusConnectionLost,
    cwCommandStatusInvalidLogin
};
```

### CWSetCommandStatus

`CWSetCommandStatus` sets the status of the current operation.

Prototype

```
CW_CALLBACK CWSetCommandStatus(
  CWPluginContext context,
  CWVCSCommandStatus status);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `status` | One of the values from the CWCVSCommandStatus enumeration. See `CWGetCommandStatus` for a list of possible values. |

Remarks

Plug-ins can use this callback to change the completion status of the current command. Plug-ins should set the completion state of an individual item by using `CWSetVCSItem`.

See Also

"CWGetCommandStatus" on page 390

### CWGetVCSItemCount

`CWGetVCSItemCount` gets the number of items to be processed for a given request.

Prototype

```
CW_CALLBACK CWGetVCSItemCount(
  CWPluginContext context,
  unsigned long *count);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `count` | On return, this parameter contains a pointer to a long integer containing the number of items to be processed in the current request. |

Remarks

When the IDE calls a VCS plug-in with certain commands, the IDE can specify a list of items (files or directories) to be processed.

### CWGetVCSItem

`CWGetVCSItem` gets a specified item from a list of items to be processed.

Prototype

```
CW_CALLBACK CWGetVCSItem(
   CWPluginContext context,
   long index,
   CWVCSItem *item);
```

Parameters

The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `index` | The index value of the item to get. This index starts at 0. |
| `item` | On return, this parameter contains a pointer to the item to process. |

Remarks

The returned item matches the following structure:

```
typedef struct CWVCSItem
{
   CWFileSpec          fsItem;
   CWVCSItemStatus     eItemStatus;
   CWVCSVersion        version;
   // following field added for version 8 API:
   CWVCSCheckoutState  eCheckoutState;
}
```

The `fsItem` member of the structure contains the `CWFileSpec` that specifies the file or directory to be processed. The `eItemStatus` member contains the completion state of the operation on that member. The following enumeration defines the possible completion states:

```
enum  // item status
{
   cwItemStatusUnprocessed,
   cwItemStatusUnknown,
   cwItemStatusSucceeded,
   cwItemStatusFailed,
   cwItemStatusCancelled
};
```

After the plug-in finishes processing an item, it should change `eItemStatus` to the appropriate code and call `CWSetVCSItem` with the updated `CWVCSItem` structure.

`version` is a `CWVCSVersion` structure in which the IDE returns the current version of the file. See `CWVCSStateChanged` for the version structure.

`eCheckoutState` indicates the current check out state of the file. See `CWVCSStateChanged` for the constants that a plug-in can use for this value.

See Also "CWVCSStateChanged" on page 381

### CWSetVCSItem

`CWSetVCSItem` updates information about an item that the plug-in has processed.

Prototype

```
CW_CALLBACK CWSetVCSItem(
   CWPluginContext context,
   long index,
   CWVCSItem *item);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `index` | The index value of the item to set. This index starts at 0. |
| `item` | A pointer to the item about which to update information. |

Remarks Plug-ins use this callback to update information about an item that the plug-in has processed.

**NOTE** Plug-ins must set the value of the `CWVCSCheckoutState` field in the `CWVCSItem` data structure prior to calling `CWSetVCSItem`.

See Also "CWGetVCSItem" on page 391

### CWGetVCSPointerStorage

`CWGetVCSPointerStorage` lets a plug-in get the contents of a thread-specific storage area.

Prototype

```
CW_CALLBACK CWGetVCSPointerStorage(
   CWPluginContext context,
```

```
   void **storage);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `storage` | The address of a pointer to the contents of the private storage block. |

Remarks Version 7+ of the VCS API lets plug-ins have one non-volatile storage area for each thread on which the IDE calls the plug-in. By examining the pointer that provides access to the storage area, a plug-in can determine the thread from which the plug-in is being called.

### CWSetVCSPointerStorage

`CWSetVCSPointerStorage` lets a plug-in set the contents of a thread-specific storage area.

Prototype
```
CCW_CALLBACK CWSetVCSPointerStorage(
   CWPluginContext context,
   void *storage);
```

Parameters The following table shows the parameters for this method:

| | |
|---|---|
| `context` | Private, opaque IDE state. |
| `storage` | A pointer to the information to store in the private storage block. |

Remarks Version 7+ of the VCS API lets plug-ins have one non-volatile storage area for each thread on which the IDE calls the plug-in. This callback lets a plug-in set the contents of a per-thread storage area.

## VCS Commands

The IDE uses two modes of operation to communicate with VCS plug-ins: negotiation and execution.

### Determining the Mode

Every time the plug-in receives a command from the IDE, it should use the `CWIsCommandSupportedRequest` to determine whether the IDE wants the plug-in to run the command or wants to query

the plug-in about the command. If `CWIsCommandSupportedRequest` returns `true`, the IDE wants to know whether the plug-in supports the most recent command. In other words, if `CWIsCommandSupportedRequest` returns `true`, the IDE has enter negotiation mode. If `CWIsCommandSupportedRequest` returns `false`, the IDE has entered command mode.

### Negotiation Mode

After performing an initialization sequence, the IDE queries the VCS plug-in to determine which commands the plug-in supports. The IDE uses this information to construct and enable the VCS menu within the IDE. In this mode, the plug-in should not execute the command. The plug-in should indicate whether it supports the command. The IDE queries about every possible command.

`CWIsCommandSupportedRequest` has only two valid responses: `cwCommandStatusSupported` and `cwCommandStatusUnsupported`. During execution mode, if the IDE makes a request about which it did not previously query, the plug-in should return `cwCommandStatusCommandUnknown`.

### Execution Mode

In execution mode, the IDE asks the VCS plug-in to perform version control services. When a plug-in receives a command (rather than a query) from the IDE, the plug-in should then use two callbacks to determine exactly what the IDE wants the plug-in to do:

- `CWIsAdvancedRequest`, to see if the IDE wants the plug-in to get more detail from the user before executing the command.
- `CWIsRecursiveRequest`, to see if the IDE wants the plug-in to apply the command recursively.

### Command Types

The IDE can pass five types of execution mode commands to a VCS plug-in:

- Initialization and Termination
- Database Connection and Disconnection
- Queries

- Information
- File Processing

### Advanced Options

When the IDE needs to have the user specify advanced options for a VCS operation, it has the plug-in display a dialog box, in which users can specify various advanced options. The plug-in then performs the operation, using the options specified by the user.

### Reporting Status

Plug-ins use a two-tiered approach to report their status while processing a command. Plug-ins use `CWSetCommandStatus` to report status for the command. Plug-ins also report the status of each item to be processed in a request by creating a `CWVCSItem` object for each item and updating the `eItemStatus` field in each object at various points during processing.

The plug-in starts by setting the high-level command status with `CWSetCommandStatus`. If the plug-in must report status before fully processing the command, it should return a value of `cwComandStatusUnknown`. If the plug-in successfully processed all items, it should return a value of `cwCommandStatusSucceeded`. If the plug-in could process no items, it should return a value of `cwCommandStatusFailed`. If the plug-in successfully processed some but not all items, it should return a value of `cwCommandStatusPartial`. If the user cancels the operation, the plug-in should return a value of `cwCommandStatusCancelled`.

After it has set the high-level status for a command, the plug-in returns additional detail about each item that it processed as part of processing the command. Before processing any item, the plug-in should create a `CWVCSItem` object for each item. The plug-in should set the `eItemStatus` field of each `CWCVSItem` object to `cwItemStatusUnknown`. Then the plug-in should prepare to process the items. When the plug-in is ready to start processing the items, it should set the `eItemStatus` field of each `CWCVSItem` object to `cwItemStatusProcessed`. As the plug-in processes each item, it should set the `eItemStatus` field of each `CWCVSItem` object to `cwItemStatusSucceeded`, `cwItemStatusFailed`, or `cwItemStatusCancelled`, depending on its ability to process the

item and on whether the user canceled the operation. Changing the status of each object at certain times lets the IDE determine how much processing the plug-in was able to do if an unexpected event arises.

# VCS Requests

The IDE can send a number of requests (also called commands) to the VCS plug-in. This

The following enumeration shows all the requests that the IDE can send to a VCS plug-in:

```
enum  // IDE requests to VCS plug-in
{
   reqInit,
   reqTerminate,
   reqPrefsChange,          // *
   reqIdle,                 // *
   reqDatabaseConnect,
   reqDatabaseDisconnect,
   reqDatabaseVariables,
   reqFileAdd,
   reqFileCheckin,
   reqFileCheckout,
   reqFileComment,
   reqFileDelete,
   reqFileDestroy,
   reqFileDifference,
   reqFileGet,
   reqFileHistory,
   reqFileLabel,
   reqFileProperties,
   reqFilePurge,
   reqFileRename,
   reqFileRollback,
   reqFileStatus,
   reqFileUndoCheckout,
   reqFileVersion,
   reqFileBranch,           // *
   reqFileShare,            // *
   reqFileView              // *
```

```
};
```

**NOTE** The IDE does not send the requests with an asterisk in the comment to version 1 plug-ins.

Each request (or command) description includes a small table indicating whether the plug-in must support the request and whether the request can be advanced or recursive.

For example, the following table indicates that the plug-in must support the request but that the IDE cannot send the request in advanced or recursive mode:

| **REQUIRED** | ADVANCED | RECURSIVE |
|---|---|---|

## Initialization and Termination

The IDE uses two commands to tell the VCS plug-in it is being loaded or unloaded. These commands let the plug-in initialize or clean up its data, respectively.

**CAUTION** Plug-ins can use only the standard memory callbacks (`CWGetAPIVersion`, `CWGetPluginRequest`, `CWDonePluginRequest`, and `CWGetIDEInfo`) during initialization and termination requests.

### reqInitalize

| **REQUIRED** | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE sends this command immediately after it loads the plug-in. When the plug-in receives this command, it should perform any initialization procedures that let it prepar for further commands.

Header — `CWPlugins.h`

Returns status with —

```
CWSetCommandStatus();
CWDonePluginRequest();
entry point return value
```

See Also — “reqInitialize” on page 127

"CWSetCommandStatus" on page 391

"CWDonePluginRequest" on page 45

### reqTerminate

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description The IDE sends this command to tell the VCS plug-in that it is about to be unloaded. The plug-in should finish any file operations and release any memory it uses before responding to this command.

Header `CWPlugins.h`

Returns status with
```
CWSetCommandStatus();
CWDonePluginRequest();
entry point return value
```

See Also "reqTerminate" on page 128

"CWSetCommandStatus" on page 391

"CWDonePluginRequest" on page 45

## Database Connection and Disconnection

The IDE uses two commands for connecting and disconnecting to a VCS database.

### reqDatabaseConnect

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description The IDE uses this command to tell the VCS plug-in to connect to its database.

`pDatabaseConnection` specifies the connection information. The plug-in should store this information, with any other session specific information, in the `context` field. The IDE retains the context information for the duration of the session and passes it to the plug-in on all subsequent requests. The IDE does not modify the context information of VCS plug-ins. The plug-in must allocate the memory for the context information.

Header `DropInVCS.h`

Callbacks used `CWGetDatabaseConnectionInfo();`

Returns status with `CWSetCommandStatus()`

See Also "CWGetDatabaseConnectionInfo" on page 389

"CWSetCommandStatus" on page 391

### reqDatabaseDisconnect

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description The IDE uses this command to tell the VCS plug-in to disconnect from its database.

At this time, the plug-in should release the memory being used to store the session information in `context`.

Header DropInVCS.h

Returns status with `CWSetCommandStatus();`

See Also "CWSetCommandStatus" on page 391

## Queries

The IDE uses two commands to query a plug-in.

### reqAbout

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description The IDE uses this command to tell the VCS plug-in to output its identification information.

The plug-in need not display this information in a dialog box. Instead, the plug-in can display the information an IDE text view, which users can print.

Header CWPlugins.h

Callbacks available memory routines
`CWPreDialog()`
`CWPostDialog();`

Returns status with `CWDonePluginRequest();`

See Also "CWPreDialog" on page 73

"CWPostDialog" on page 72

"CWDonePluginRequest" on page 45

#### reqDatabaseVariables

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — This command tells the VCS plug-in to output its initialization variables.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();`

See Also — "CWSetCommandStatus" on page 391

## Information

The IDE uses two commands to deal with information updates.

#### reqIdle

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to advance any periodic operations it may have in progress.

Header — `CWPlugins.h`

Callbacks available — memory callbacks

```
CWPreDialog();
CWPostDialog();
CWGetAPIVersion();
CWGetIDEInfo();
```

Returns status with — `CWDonePluginRequest();`

See Also — "CWPreDialog" on page 73

"CWPostDialog" on page 72

"CWGetAPIVersion" on page 52

"CWDonePluginRequest" on page 45

### reqPrefsChange

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in that the user changed values in one of its preference panels.

Header — `CWPlugins.h`

Callbacks available — All universal plug-in callbacks.

Returns status with — `CWDonePluginRequest();`

See Also — "CWDonePluginRequest" on page 45

## File Processing

Commands that change the checkout state of files must update (if possible) the version field of `pItemData` in the `pItemList`. Items have a status of unprocessed when the plug-in starts a request. The plug-in must set the status for each item before finishing the request. See "Reporting Status" on page 396.

The overall command status should only be set to success or failure if all items have the corresponding status. When the user cancels an operatin, the IDE checks each item to determine the appropriate action to take for each.

### reqFileAdd

| REQUIRED | **ADVANCED** | **RECURSIVE** |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to add a list of files to the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileBranch

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to branch in a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileCheckin

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to check in a list of files into the database.

Header — `DropInVCS.h`

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileCheckout

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to check out a list of files from the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileComment

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description: The IDE uses this command to tell the VCS plug-in to change the comment of a list of files in the database.

Header: DropInVCS.h

Returns status with:
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also: "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileDelete

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description: The IDE uses this command to tell the VCS plug-in to delete of a list of files from the database.

Header: DropInVCS.h

Returns status with:
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also: "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileDestroy

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description: The IDE uses this command to tell the VCS plug-in to destroy of a list of files in the database. This command has the same effect as a delete followed by a purge.

Header: DropInVCS.h

Returns status with:
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also: "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileDifference

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to output a difference listing between a list of files in the database and those local.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();` `CWSetVCSItem();`

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileGet

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to get a list of files from the database.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();` `CWSetVCSItem();`

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileHistory

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to output a history listing for a list of files in the database.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();` `CWSetVCSItem();`

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileLabel

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to label a list of files in the database. The start version field is used to indicate label to be applied.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();`

See Also — "CWSetCommandStatus" on page 391

### reqFileProperties

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to output the properties of a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFilePurge

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to permenantly remove a list of files from the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileRename

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to rename a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileRollback

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to rollback a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileShare

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to share in a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileStatus

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to output the status of a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileUndoCheckout

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to cancel the checkout of a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileVersion

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to retrieve the version and checkout state of a list of files in the database.

Header — DropInVCS.h

Returns status with —
```
CWSetCommandStatus();
CWSetVCSItem();
```

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

### reqFileView

| REQUIRED | ADVANCED | RECURSIVE |
|---|---|---|

Description — The IDE uses this command to tell the VCS plug-in to display the contents of a list of files from the database.

Header — DropInVCS.h

Returns status with — `CWSetCommandStatus();` `CWSetVCSItem();`

See Also — "CWSetCommandStatus" on page 391

"CWSetVCSItem" on page 393

# VCS API Version 1 Compatibility

The plug-in libraries that you link against when writing version 7+ and later VCS plug-ins allow for backwards compatibility. That is, you can run a version 7+ plug-in under an IDE built prior to the Pro 4 IDE, from CodeWarrior 10 and up. Plug-ins running on those versions of the IDE must only use specific callbacks and do not receive certain requests.

The following sections detail the overall behavioral differences, which callbacks are supported when running in V1 compatibility mode, and which requests are not sent in V1 compatibility mode.

## Version 1 VCS API

If you are writing a version 7+ plug-in and want it to run as a version 1 plug-in, your plug-in must:

- Pass `true` as the argument to all calls to `CWAllowV1Compatibility`.
- Assume the behavior of a V1 plug-in.
- Never use any of the unmapped callbacks.
- Never expect to receive any requests specific to later versions of the API.

### Installing on a Pre-Pro 4 CodeWarrior Installation

To properly run a version 7+ plug-in on a version of the IDE earlier Pro 4 CodeWarrior IDE, `PluginLib4.dll` on the user's system must be replaced with the one in the SDK to gain access to the new VCS callbacks and compatibility code. Without it, version 7+ VCS plug-ins cannot function.

### Behavioral Differences

When a VCS plug-in runs as a version 1 plug-in, it should expect the following major behavioral differences:

- The IDE never gives idle time to the plug-in (see "reqIdle" on page 401). The plug-in must do all of its processing during requests.
- The IDE sends no notification about preferences changes.
- The IDE always prepares files before calling the plug-in's main entry point. The plug-in needs to perform no pre- or post-file actions, but users can experience long delays.
- The IDE processes all events before calling the plug-in. The plug-in never sees events.

You can write a plug-in that is intended to run as a version 1 plug-in in two ways. You can implement work-arounds for the missing featrues. For example, you could write a Time Manager task to mimic `reqIdle`. If you use work-arounds, you can test them by calling `CWAllowV1Compatibility` and checking the `isV1` value.

The other way involves writing your plug-in such that it never needs the missing features. If you choose this method of creating a plug-in, your plug-in must set certain flags to tell the IDE what to expect. Your plug-in should specify the following as the capability flags in the flag resource or entry point return structure:

```
flags.dropinflags =
  vcsDoesntPrePostSingleFile |
  vcsDoesntPrePostRecursiveFile |
  vcsRequiresEvents;
```

**NOTE** The IDE puts all the constants, version structures (struct `tm`), VCS items, and the file structures (`FSSpec` on Mac, full path on Windows) in the version 7+ format. When porting an older plug-in,

remember the differences in the structures and change how you access their members accordingly.

### Supported Callbacks

The functionality of the version 1 VCS API limits the callbacks that a plug-in can use when it runs as a version 1 plug-in. Such a plug-in can only use the following callbacks:

Standard callbacks:

- `CWGetPluginRequest`
- `CWDonePluginRequest`
- `CWGetAPIVersion`
- `CWReportMessage`
- `CWAlert`
- `CWShowStatus`
- `CWUserBreak`
- `CWGetNamedPreferences`
- `CWCreateNewTextDocument`
- `CWAllocMemHandle`
- `CWFreeMemHandle`
- `CWGetMemHandleSize`
- `CWResizeMemHandle`
- `CWLockMemHandle`
- `CWUnlockMemHandle`
- `CWPreDialog`
- `CWPostDialog`

VCS-specific callbacks:

- `CWAllowV1Compatibility`
- `CWGetComment`
- `CWDoVisualDifference` (Pro 2 and later only)
- `CWGetProjectFileSpecifier`
- `CWIsAdvancedRequest`

- `CWIsRecursiveRequest`
- `CWIsCommandSupportedRequest`
- `CWGetDatabaseConnectionInfo`
- `CWGetCommandStatus`
- `CWSetCommandStatus`
- `CWGetVCSItemCount`
- `CWGetVCSItem`
- `CWSetVCSItem`

Plug-ins can use only the following callbacks during initialization and termination requests: `CWGetPluginRequest`, `CWDonePluginRequest`, `CWPreDialog`, `CWPostDialog`, and `CWGetAPIVersion`.

If you try to use a callback that is not supported in the version 1 VCS API, the IDE returns an error and ignores the callback.

### Unsupported Requests

A version 1 plug-in does not receive the following requests:

- `reqIdle`
- `reqPrefsChange`
- `reqFileBranch`
- `reqFileShare`
- `reqFileView`

## Porting a Version 1 VCS Plug-in to Version 7+

In order to ease the process of porting an existing version 1 VCS plug-in to version 7+, a header file called `DropInVCS_V1Compatibility.h` can be included. This header file lets you avoid renaming all the constants and structure types that are supported in the old Version 1 API. You must change your logical structure for the following changed structures:

- `CWVCSDateTime`
- `CWVCSItemData`
- `CWVCSFileSpecifier`

In general, you have two options for porting a version 1 plug-in to the new API. You can create your own version 1 structures from the old header and translate from the new accessor to the old parameter block structure on entry and reverse on exit. In this case, you must also implement your own glue routines for the callbacks that accept version 1 structures and translate them to version 7+ structures when calling back to the IDE. Although this method allows existing code to work, using newer callbacks directly in the code can cause much extra work, thanks to translating between formats.

As your second option, you can eliminate all the version 1 callbacks and parameter block references and rewrite your code to use the version 7+ API directly. The following process describes how to rewrite a plug-in for version 7+:

1) Change the callbacks you use to the new VCS callbacks and standard plug-in callbacks.

2) Eliminate any access to a parameter block and replace it with the accessor routines.

3) Insert calls to the `CWPreFileAction` and `CWPostFileAction` callbacks when working with files.

4) Modify the format of your main entry point to make the required calls to `CWAllowV1Compatibility` and `CWDonePluginRequest`.

5) Modify your `Flag` resource or entry point to use the new Version 3 Flag format.

6) Examine each point where you use a `CWVCSDateTime` and `CWVCSItem` structure to be sure that you are using the proper version 7+ structures.

The tables below map old callbacks to new callbacks and parameter block entries to accessors.

### V1 to V7 Callback Mappings

Version 7 plug-ins use the following callbacks for the function pointer entries in the version 1 parameter block:

| Version 1 Callback | Version 7 Callback |
|---|---|
| pVCSPreDialogRoutine | CWPreDialog |
| pVCSPostDialogRoutine | CWPostDialog |
| pVCSMessageOutputRoutine | CWReportMessage |
| pVCSReportProgressRoutine | CWShowStatus |
| pVCSGetPreferencesRoutine | CWGetNamedPreferences |
| pVCSCreateDocumentRoutine | CWCreateNewTextDocument |
| pVCSYieldTimeRoutine | CWUserBreak |
| pVCSGetCommentRoutine | CWGetComment |
| pVCSUpdateCheckoutStateRoutine | CWFileStateChanged |

### V1 Param Block Members to Accessor Mappings

| V1 PB Member | Retrieval Accessor | Assignment Accessor |
|---|---|---|
| request | CWGetPluginRequest | |
| version | CWGetAPIVersion | |
| context | CWGetVCSPointerStorage | CWSetVCSPointerStorage |
| storage | | |
| targetfile | CWGetProjectFileSpecifier | |
| bAdvanced | CWIsAdvancedRequest | |
| bRecursive | CWIsRecursiveRequest | |
| bCheckIfSupported | CWIsCommandSuportedRequest | |
| eCommandStatus | CWGetCommandStatus | CWSetCommandStatus |
| sDatabasePath | CWGetDatabaseConnectionInfo | |
| sProjectRoot | CWGetDatabaseConnectionInfo | |
| rcUsername | CWGetDatabaseConnectionInfo | |
| rcPassword | CWGetDatabaseConnectionInfo | |

| V1 PB Member | Retrieval Accessor | Assignment Accessor |
|---|---|---|
| lItemCount | CWGetVCSItemCount | |
| pItemList | CWGetVCSItem | CWSetVCSItem |

# Section 2: COM API

This section includes the following chapters:

- Introduction to the COM API
- Access Paths
- Application
- Collections
- Commands
- Components
- Creatable Items
- Designs
- Dialog Services
- Documents
- Error Info
- Files
- Menus
- Messages
- Projects
- Symbols
- Targets
- Text
- Toolbar
- Version Control
- Windows

# 8

# Introduction to the COM API

COM is Microsoft's Component Object Model. You can learn more about COM on the web at:

```
http://msdn.microsoft.com
```

For information on writing IDE plug-ins, see the *IDE SDK Developer's Guide*. The information needed to write plug-ins is mainly in that manual.

This chapter contains the following sections:

- Requirements — what you'll need to develop COM plug-ins
- What You Should Already Know — what this manual assumes you know about COM programming
- Starting Points — how to use this manual

## Requirements

To write COM programs that control the CodeWarrior IDE, you'll need a CodeWarrior package that comes with the tools and files needed to develop software for the operating system or computer platform on which your program will run.

Follow the instructions in the QuickStart guide of your CodeWarrior product to install the software.

# What You Should Already Know

The manual shows you how to use the CodeWarrior COM APIs in your programs to manipulate the CodeWarrior IDE.

It is assumed that you have some experience with an object-oriented language such as C++, Java, or VBScript and are familiar with Microsoft COM.

If you are not yet familiar with Microsoft COM, the following website has everything you need to learn the basics of COM, including tutorials:

`http://microsoft.com/com/default.asp`

# Starting Points

The COM API exposes two kinds of interfaces: Services and Callbacks.

## Services

The IDE exposes services that you can call through an interface pointer. Most of the interfaces exposed by the IDE are services.

Examples of services include:

- `ICodeWarriorApp`
- `ICodeWarriorMenu`
- `ICodeWarriorWindow`

## Callbacks

In some cases, the IDE calls back into your code. For such an interface, you inherit and implement the abstract interface in full, since every method has been declared as pure virtual. You must write the whole thing from scratch. No inherited implementation exists, only an inherited interface. COM and Java share this feature: objects inherit only interfaces.

Examples of callbacks include:

- `ICodeWarriorToggleButtonToolbarItem`
- `ICodeWarriorPopupMenuToolbarItem`
- `ICodeWarriorCustomToolbarItem`

# 9

# Access Paths

This chapter shows how to use the Access Paths API to create and manipulate access paths in the CodeWarrior IDE.

## Access Paths API Reference

This section describes the methods contained in the following interfaces:

- ICodeWarriorAccessPath
- ICodeWarriorAccessPaths
- ICodeWarriorUserTree

The following data types are used with these interfaces:

- EAccessPathLocation
- EAccessPathType
- EUserDefinedTree

## ICodeWarriorAccessPath

This interface represents a CodeWarrior access path.

### Inherited Interfaces

- IDispatch
- IUnknown

### Methods

This interface exposes the following methods:

| | |
|---|---|
| get_AccessPathLocation | get_SubDirectories |
| get_AccessPathType | get_UserTree |
| get_Path | put_AccessPathLocation |
| get_Recursive | put_Recursive |

## get_AccessPathLocation

This method gets the origin of this access path.

```
virtual HRESULT AccessPathLocation(
    EAccessPathLocation *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a value within the range defined by the EAccessPathLocation enumeration, indicating the origin of this access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_AccessPathType

This method gets the type of this access path.

```
virtual HRESULT get_AccessPathType(
    EAccessPathType *pval) = 0;
```

`pval`

On return, this parameter a pointer to a value in the range defined by the EAccessPathType enumeration, representing whether this access path is a user path or a system path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Path

This method gets a file specification for this access path.

```
virtual HRESULT get_Path(IFileSpec **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the folder for this access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Recursive

This method gets whether an access path is recursive or not.

```
virtual HRESULT get_Recursive(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if this access path is recursive or `false` if this access path is not recursive.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SubDirectories

This method gets a list of all subfolders contained by the folder pointed to by this access path.

```
virtual HRESULT get_SubDirectories(
    ICodeWarriorAccessPathCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the list of access paths, one for each subfolder contained by the folder pointed to by this access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_UserTree

If this access path has a user-defined origin, this method gets the corresponding user tree object. If this access path instead uses one of the origins defined in EAccessPathLocation, this method gets nothing.

```
virtual HRESULT get_UserTree(
    ICodeWarriorUserTree **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the user tree for this access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed. This method can also return nothing if you specify one of the access paths defined in the EAccessPathLocation enumeration.

See Also "EAccessPathLocation" on page 440

## put_AccessPathLocation

This method sets the origin of this access path.

```
virtual HRESULT AccessPathLocation(
    EAccessPathLocation val) = 0;
```

`val`

Set this parameter to a value within the range defined by the EAccessPathLocation enumeration, indicating the origin of this access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Recursive

This method sets whether this access path is recursive.

```
virtual HRESULT put_Recursive(
    VARIANT_BOOL pval) = 0;
```

`pval`

Set this parameter to `true` if this access path is recursive or `false` if this access path is not recursive.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorAccessPaths

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| ApplyChanges | get_SystemAccessPaths |
| CreateAccessPath | get_UserAccessPaths |
| CreateAccessPathByFileSpec | put_AlwaysSearchUserPaths |
| CreateAccessPathByPosition | RemoveAccessPath |
| get_AlwaysSearchUserPaths | |

## ApplyChanges

This method applies any changes you have made to this access path. You must call this method in order for changes you make to take effect.

```
virtual HRESULT ApplyChanges(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CreateAccessPath

This method creates a new access path by using a string to specify the new access path. To remove an access path, use `RemoveAccessPath`.

```
virtual HRESULT CreateAccessPath(
    BSTR path,
    VARIANT_BOOL Recursion,
```

```
    EAccessPathLocation inLocation,
    EAccessPathType inType,
    ICodeWarriorAccessPath **pval) = 0;
```

`path`

The full path to the folder you want to add.

`Recursion`

Set this parameter to `true` if you would like the CodeWarrior IDE to search subfolders of this access path. Otherwise, set it to `false`.

`inLocation`

A value within the range defined by the EAccessPathLocation enumeration, indicating the origin of the new access path.

`inType`

A value in the range defined by the EAccessPathType enumeration, indicating whether this is a user path or a system path.

`pval`

On return, this parameter contains the address of a pointer to the newly created access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "RemoveAccessPath" on page 435

## CreateAccessPathByFileSpec

This method creates a new access path by using the `IFileSpec` interface. To remove an access path, use `RemoveAccessPath`.

```
virtual HRESULT CreateAccessPathByFileSpec(
    IFileSpec *path,
    VARIANT_BOOL Recursion,
    EAccessPathLocation inLocation,
```

```
    EAccessPathType inType,
    ICodeWarriorAccessPath **pval) = 0;
```

`path`

A pointer to the IFileSpec interface representing the folder you want to add.

`Recursion`

Set this parameter to `true` if you would like the CodeWarrior IDE to search subfolders of this access path. Otherwise, set it to `false`.

`inLocation`

A value within the range defined by the EAccessPathLocation enumeration, indicating the origin of this access path.

`inType`

A value in the range defined by the EAccessPathType enumeration, indicating whether this is a user path or a system path.

`pval`

On return, this parameter contains the address of a pointer to the newly created access path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "RemoveAccessPath" on page 435

## CreateAccessPathByPosition

This method creates a new access path by using the `EAccessPathLocation` interface. To remove an access path, use `RemoveAccessPath`.

```
virtual HRESULT CreateAccessPathByPosition(
    BSTR path,
    VARIANT_BOOL Recursion,
```

```
    EAccessPathLocation inLocation,
    EAccessPathType inType,
    BSTR userTreeName,
    long position,
    ICodeWarriorAccessPath **pval) = 0;
```

`path`

The path you want to add.

`Recursion`

Set this parameter to `true` if you would like the CodeWarrior IDE to search subfolders of this access path. Otherwise, set it to `false`.

`inLocation`

A value within the range defined by the EAccessPathLocation enumeration, indicating the origin of this access path.

`inType`

A value in the range defined by the EAccessPathType enumeration, indicating whether this is a user path or a system path.

`userTreeName`

The name of the user tree to which the path is being added.

`position`

An integer indicating the position for the new path.

`pval`

On return, this parameter contains the address of a pointer to the newaccess path.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also “RemoveAccessPath” on page 435

## get_AlwaysSearchUserPaths

This method obtains the state of the **Always Search User Paths** option. When enabled, this option tells CodeWarrior to always search user paths before searching system paths.

```
virtual HRESULT get_AlwaysSearchUserPaths(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if this option is enabled or `false` if this option is disabled.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SystemAccessPaths

This method gets a list of all system access paths in this collection. The system paths collection contains all compiler-relative paths.

```
virtual HRESULT get_SystemAccessPaths(
    ICodeWarriorAccessPathCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all system access paths.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_UserAccessPaths

This method gets a list of all user access paths in this collection. The user paths collection contains all project-relative paths.

```
virtual HRESULT get_UserAccessPaths(
    ICodeWarriorAccessPathCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all user access paths.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## put_AlwaysSearchUserPaths

This method sets the state of the **Always Search User Paths** option. When enabled, this option tells the CodeWarrior IDE to always search user paths before searching system paths.

```
virtual HRESULT put_AlwaysSearchUserPaths(
    VARIANT_BOOL pval) = 0;
```

`pval`

Set this parameter to `true` if this option is enabled or `false` if this option is disabled.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveAccessPath

This method removes an access path from the list of access paths. To create an access path, use `CreateAccessPath`, `CreateAccessPathByFileSpec`, or `CreateAccessPathByPosition`.

```
virtual HRESULT RemoveAccessPath(
    ICodeWarriorAccessPath* pval) = 0;
```

`pval`

A pointer to the access path to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CreateAccessPath" on page 429

"CreateAccessPathByFileSpec" on page 430

"CreateAccessPathByPosition" on page 431

## ICodeWarriorUserTree

The ICodeWarriorUserTree interface lets you work with user-defined access paths.

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| get_KeyName | put_KeyName |
| get_Name | put_Name |
| get_Type | put_Type |
| get_Value | put_Value |

## get_KeyName

This method gets the key name of the current user tree.

```
virtual HRESULT  get_KeyName(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to the key name of the current user tree.

## get_Name

This method gets the name of this user tree.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of this user tree.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Type

This method gets the type of this user tree.

```
virtual HRESULT get_Type(
    EUserDefinedTree *val) = 0;
```

`val`

On return, this parameter contains a pointer to a value in the range defined by the EUserDefinedTree enumeration.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Value

This method gets the value of this user tree.

```
virtual HRESULT get_Value(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the value of this user tree.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_KeyName

This method sets the key name of the current user tree.

```
virtual HRESULT put_KeyName(
    BSTR val) = 0;
```

`val`

The string to which to set the key name of the current user tree.

## put_Name

This method sets the name of this user tree.

```
virtual HRESULT put_Name(
    BSTR val) = 0;
```

`val`

The name of this user tree.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Type

This method sets the type of this user tree.

```
virtual HRESULT put_Type(
```

```
    EUserDefinedTree val) = 0;
```

`val`

A value in the range defined by the EUserDefinedTree enumeration.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Value

This method sets the value of this user tree.

```
virtual HRESULT put_Value(
    BSTR val) = 0;
```

`val`

The value of this user tree.

## Access Paths Data Types

The following data types are used with the Access Paths API:

- EAccessPathLocation
- EAccessPathType
- EUserDefinedTree

### EAccessPathLocation

This enumeration describes the origin of an access path.

**Table 9.1 EAccessPathLocation Enumeration**

| Constant | Description |
|---|---|
| `kAbsolute` | An absolute (that is, fully qualified) file path. |
| `kProjectRelative` | A file path relative to the location of the project file. |
| `kCompilerRelative` | A file path relative to the location of the compiler's executable file. |
| `kSystemRelative` | A file path relative to the location of the operating system files. |
| `kUserDefined` | A file path relative to a user-defined location. |

### EAccessPathType

This enumeration describes the type of an access path.

**Table 9.2 EAccessPathType Enumeration**

| Constant | Description |
|---|---|
| `kUserPath` | A user-specified path. |
| `kSystemPath` | A system path. |

### EUserDefinedTree

This enumeration describes the type of a user tree.

**Table 9.3 EUserDefinedTree Enumeration**

| Constant | Description |
|---|---|
| `kAbsoluteFilePath` | An absolute (that is, fully qualified) file path. |
| `kEnvironment` | A path stored as an environment variable. |
| `kRegistry` | A path stored in the registry. |

# 10

# Application

This chapter describes the Application API to work with and receive events from the CodeWarrior IDE about the application object..

This chapter contains the following sections:

- Application API Overview
- Application API Reference

## Application API Overview

The Application API is a set of interfaces that allows a plug-in to manipulate and receive events from the CodeWarrior IDE.

You can use the application object API to manipulate application properties, for project and target management, document and file management, command management, and other tasks.

# Application API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorApp`
- `ICodeWarriorAppEvents`
- `ICodeWarriorCompare`

These interfaces use the following data types:

- `ECodeWarriorConvertOption`
- `ECodeWarriorRevertPanelOption`
- `ECodeWarriorProjectOption`
- `ECodeWarriorSaveOption`
- `ECodeWarriorVCSInteractionOption`
- `Standard Folder Names`

## ICodeWarriorApp

This is the CodeWarrior application object. Use it to manipulate application properties, for project and target management, document and file management, command management, and other miscellaneous tasks.

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| AddCreatableItem | get_VersionControl |
| AddUserTree | get_Visible |
| AttemptModify | ImportProject |
| CreateProject | ImportProjectByFileSpec |
| CreateProjectByFileSpec | IsBuildInProgress |
| CreateUserTree | OpenDocument |
| DoCommand | OpenProject |
| FindDesignForDataModel | OpenProjectWithOptions |
| FindLogicalFolder | OpenProjectByFileSpec |
| get_ActiveDocument | OpenProjectByFileSpecWithOptions |
| get_Application | OpenTextDocument |
| get_CompareInterface | OpenTextDocumentByFileSpec |
| get_CreatableItems | OpenUntitledTextDocument |
| get_Debugger | put_AllowUserInteraction |
| get_DefaultProject | put_Visible |
| get_DefaultProjectDocument | QueueDeferredAction |
| get_Documents | Quit |
| get_FullName | RemoveCreatableItem |
| get_Name | RemoveNamedPluginData |
| GetNamedPluginData | RemoveUserTree |

**Application**
*AddCreatableItem*

| | |
|---|---|
| get_Projects | SetNamedPluginData |
| GetSetting | SetSetting |
| get_UserTrees | |

## AddCreatableItem

Use this method to add a creatable item to the CodeWarrior IDE. Creatable items encapsulate the items visible in the **New** window. See "Creatable Items" on page 523 for more information on creatable items.

```
virtual HRESULT AddCreatableItem(
    IUnknown *item) = 0;
```

`item`

The creatable item to add to the CodeWarrior IDE.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## AddUserTree

This method adds an existing user tree to the application.

```
virtual HRESULT AddUserTree(
    ICodeWarriorUserTree *pval) = 0;
```

`pval`

A pointer to the user tree to add to the application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorUserTree" on page 436

## AttemptModify

Use this method to request that a CodeWarrior file be made writable.

Prototype

```
virtual HRESULT AttemptModify(
    IFileSpec *fileSpec,
    ECodeWarriorVCSInteractionOption uiParameter,
    ICodeWarriorProject *project) = 0;
```

Parameters

`fileSpec`

A pointer to the `IFileSpec` interface containing the file in question.

`uiParameter`

A `ECodeWarriorVCSInteractionOption` set to a value in the range defined by the ECodeWarriorVCSInteractionOption enumeration, representing how the IDE should handle user interaction.

`project`

If the file is in a project that has version control enabled, use a pointer to the `ICodeWarriorProject` interface. Otherwise, use NULL.

Returns

`S_OK` if the file was found and made writable, `S_FALSE` if the file cannot be modified, or `E_ABORT` if the user cancelled the operation.

## CreateProject

Use this method to create a new project in the CodeWarrior application by specifying a file path.

```
virtual HRESULT CreateProject(
    BSTR filePath,
    BSTR linkerName,
    BSTR designName,
    BSTR targetName,
```

```
    VARIANT_BOOL fMakeVisible,
    ICodeWarriorProject **pval) = 0;
```

`filepath`

The full path to the new project file. CodeWarrior creates this file. It should not exist prior to this call.

`linkerName`

The name of the linker used in this project. CodeWarrior configures the new project to use the linker you specify here. You can set this value to NULL or an empty string to use the default values from the project.

`designName`

The name of the initial design in this project. CodeWarrior creates a new design with the name specified. You can set this value to NULL or an empty string to use the default values from the project.

`targetName`

The name of the initial target in this project. CodeWarrior creates a new target with the name specified. You can set this value to NULL or an empty string to use the default values from the project.

`fMakeVisible`

Set this parameter to `true` if this project should be visible to users or `false` if not.

`pval`

On return, this parameter contains the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## CreateProjectByFileSpec

Use this method to create a new project in the CodeWarrior application, by file specification.

```
virtual HRESULT CreateProjectByFileSpec(
    IFileSpec *projectFileSpec,
    BSTR linkerName,
    BSTR designName,
    BSTR targetName,
    IFileSpec *stationeryFileSpec,
    VARIANT_BOOL fMakeVisible,
    ICodeWarriorProject **pval) = 0;
```

`projectFileSpec`

A pointer to the `IFileSpec` interface. CodeWarrior creates this file. It should not exist prior to this call.

`linkerName`

The name of the linker used in this project. CodeWarrior configures the new project to use the linker you specify here. You can set this value to NULL or an empty string to use the default values from the project.

`designName`

The name of the initial design in this project. CodeWarrior creates a new design with the name specified. You can set this value to NULL or an empty string to use the default values from the project.

`targetName`

The name of the initial target in this project. CodeWarrior creates a new target with the name specified. You can set this value to NULL or an empty string to use the default values from the project.

`stationeryFileSpec`

If this project is to be based on existing stationery, use a pointer to the `IFileSpec` interface set to a stationery project file. If not,

use NULL.

`fMakeVisible`

Set this parameter to `true` if this project should be visible to users or `false` if not.

`pval`

On return, this parameter contains the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorProject" on page 630

## CreateUserTree

This method creates a new user tree.

```
virtual HRESULT CreateUserTree(
    BSTR displayName,
    BSTR value,
    EUserDefinedTree type,
    BSTR keyName,
    ICodeWarriorUserTree **pVal) = 0;
```

`displayName`

The name of the user tree that will appear in the IDE.

`value`

The value string of the user tree.

`type`

The type of the tree, which must be one of the values specified by the EUserDefinedTree Tree enumeration.

`keyName`

The key name of the user tree.

`pval`

On return, this parameter contains the address of a pointer to the new user tree.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EUserDefinedTree" on page 441

"ICodeWarriorUserTree" on page 436

## DoCommand

Use this method to invoke a command in the CodeWarrior IDE.

```
virtual HRESULT DoCommand(
    long commandID) = 0;
```

`commandID`

Set this `long` value to the command ID of the command to invoke. The command ID must be previously registered with the IDE.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Commands API Overview" on page 493

## FindDesignForDataModel

Use this method

```
virtual HRESULT FindDesignForDataModel(
    IUnknown *dataModel,
    ICodeWarriorDesign **project) = 0;
```

`dataModel`

Supply a pointer to the `IUnknown` interface containing the data model corresponding to the design you are looking for.

`project`

On return, this parameter contains the address of a pointer to the design corresponding to the specified data model.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDesign" on page 542

## FindLogicalFolder

Use this method to obtain a file specification for one of the standard folders used by the CodeWarrior IDE. A list of these folder names is provided under "Standard Folder Names" on page 484.

```
virtual HRESULT FindLogicalFolder(
    BSTR folderName,
    IFileSpec **folder) = 0;
```

`folderName`

The name of the folder you want. For a list of accepted folder names, see "Standard Folder Names" on page 484.

`folder`

On return, this parameter contains the address of a pointer toa file specification for the folder in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_ActiveDocument

Call this method to obtain the currently active document in the CodeWarrior application.

```
virtual HRESULT get_ActiveDocument(
    ICodeWarriorDocument **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the active document in the CodeWarrior application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDocument" on page 572

## get_Application

Call this method to obtain the CodeWarrior application object.

```
virtual HRESULT get_Application(
    IDispatch **pval) = 0;
```

`pval`

Upon return this parameter contains the address of a pointer to the CodeWarrior application object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_CompareInterface

This method gives access the comparison dialog, so that the ICodeWarriorCompare interface can be used to compare files and folders.

```
virtual HRESULT get_CompareInterface(
   ICodeWarriorCompare **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the comparison information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorCompare" on page 479

## get_CreatableItems

Call this method to obtain a collection of all creatable items in the CodeWarrior application.

```
virtual HRESULT get_CreatableItems(
   ICodeWarriorCreatableItemCollection **pval
   ) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all creatable items in the CodeWarrior application.

## get_Debugger

This method gets an object that defines the current debugger.

```
virtual HRESULT get_Debugger(
```

```
    ICodeWarriorDebugger **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the object that defines the current debugger.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_DefaultProject

Use this method to obtain the default project object in the CodeWarrior application.

```
virtual HRESULT get_DefaultProject(
    ICodeWarriorProject **project) = 0;
```

`project`

On return, this parameter contains the address of a pointer to the default project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## get_DefaultProjectDocument

Call this method to obtain the default project document in the CodeWarrior application.

```
virtual HRESULT get_DefaultProjectDocument(
    ICodeWarriorProjectDocument **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the default project document in the CodeWarrior application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectDocument" on page 580

## get_Documents

Call this method to obtain a collection of all open documents in the CodeWarrior application.

```
virtual HRESULT get_Documents(
    ICodeWarriorDocumentCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer toa collection of all open documents in the CodeWarrior application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FullName

Call this method to obtain the full path of the CodeWarrior application file.

```
virtual HRESULT get_FullName(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the full path to the application file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

Call this method to obtain the name of the CodeWarrior application file.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of the application file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetNamedPluginData

Use this method to obtain plug-in data from a given plug-in.

```
virtual HRESULT GetNamedPluginData(
    BSTR resourceName,
    IStream **pluginData) = 0;
```

`resourceName`

The name of the plug-in resource you want to obtain data from.

`pluginData`

On return, this parameter contains the address of a pointer to the data for plug-in resource specified.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Projects

Call this method to obtain a collection of all currently open projects in the CodeWarrior application.

```
virtual HRESULT get_Projects(
    ICodeWarriorProjectCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer toa collection of all currently open projects in the CodeWarrior application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetSetting

Use this method to obtain the value of a given IDE preference setting.

```
virtual HRESULT GetSetting(
    BSTR settingsName,
    VARIANT *pval) = 0;
```

`settingsName`

The name of the setting value to get.

`pval`

On return, this parameter contains the value of the specified setting.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_UserTrees

This method gets the user-defined trees, as a collection.

```
virtual HRESULT get_UserTrees(
    ICodeWarriorUserTreeCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection that holds the user-defined trees.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_VersionControl

Use this method to obtain the version control interface to the CodeWarrior application.

```
virtual HRESULT get_VersionControl(
    ICodeWarriorVersionControl **vcs) = 0;
```

`vcs`

On return, this parameter contains the address of a pointer to the version control interface to the CodeWarrior application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorVersionControl" on page 804

## get_Visible

Call this method to obtain the visible state of the CodeWarrior application.

```
virtual HRESULT get_Visible(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter is set to `true` if the application is visible or `false` if the application is not visible.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ImportProject

Use this method to import an XML project file into the CodeWarrior IDE, specifying the full path to the import file.

```
virtual HRESULT ImportProject(
    BSTR textFilePath,
    BSTR projectFilePath,
    VARIANT_BOOL fMakeVisible,
    ICodeWarriorProject **pval) = 0;
```

`textFilePath`

The full path to the XML file you are importing.

`projectFilePath`

The full path to the new project file. This file must not exist. It is created by CodeWarrior.

`fMakeVisible`

Set this parameter to`true` if this operation is to be visible to the user or `false` if the operation should be hidden from the user.

`pval`

On return, this parameter contains the address of a pointer to the resulting project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## ImportProjectByFileSpec

Use this method to import an XML project file into the CodeWarrior IDE, specifying a file specification to the import file.

```
virtual HRESULT ImportProjectByFileSpec(
    IFileSpec *textFileSpec,
    IFileSpec *projectFileSpec,
    VARIANT_BOOL fMakeVisible,
    ICodeWarriorProject **pval) = 0;
```

`textFileSpec`

A pointer to the `IFileSpec` interface containing the file specification for the XML file you are importing.

`projectFileSpec`

A pointer to the `IFileSpec` interface containing the file specification for the new project file. This file must not exist. It is created by CodeWarrior.

`fMakeVisible`

Set this parameter to `true` if this operation is to be visible to the user or `false` if the operation should be hidden from the user.

`pval`

On return, this parameter contains the the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

**Application**
*IsBuildInProgress*

See Also "IFileSpec" on page 599

"ICodeWarriorProject" on page 630

## IsBuildInProgress

Use this method to determine if a build is currently in progress in the CodeWarrior IDE.

```
virtual HRESULT IsBuildInProgress(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter is set to `true` if a build is in progress or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## OpenDocument

This method opens a document specified by a full file path.

```
virtual HRESULT OpenDocument(
    BSTR filePath) = 0;
```

`filePath`

The full path to the document to open.

## OpenProject

Use this method to open a project in the CodeWarrior IDE, by specifying the project file by full path.

```
virtual HRESULT OpenProject(
    BSTR filePath,
    VARIANT_BOOL fMakeVisible,
    ECodeWarriorConvertOption convertOption,
    ECodeWarriorRevertPanelOption revertOption,
    ICodeWarriorProject **pval) = 0;
```

`filePath`

The full path to the project file.

`fMakeVisible`

Set this parameter to `true` if this operation is to be visible to the user or `false` if the operation should be hidden from the user.

`convertOption`

A value in the range defined by the `ECodeWarriorConvertOption` enumeration, representing how the CodeWarrior IDE should handle this project if the project is found to be a project created by an older version of the IDE.

`revertOption`

A value in the range defined by the enumeration `ECodeWarriorRevertPanelOption`, representing whether revert is allowed in settings panels of the project being opened.

`pval`

On return, this parameter contains the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorConvertOption" on page 482

"ECodeWarriorRevertPanelOption" on page 482

"ICodeWarriorProject" on page 630

## OpenProjectWithOptions

Use this method to open a project in the CodeWarrior IDE, by specifying the project file by full path and applying certain options.

```
virtual HRESULT  OpenProjectWithOptions(
    BSTR filePath,
    VARIANT_BOOL fMakeVisible,
    ECodeWarriorConvertOption convertOption,
    ECodeWarriorRevertPanelOption revertOption,
    ECodeWarriorProjectOption projectOption,
    ICodeWarriorProject **pval) = 0;
```

`filePath`

The full path to the project file.

`fMakeVisible`

Set this parameter to `true` if this operation is to be visible to the user or `false` if the operation should be hidden from the user.

`convertOption`

A value in the range defined by the `ECodeWarriorConvertOption` enumeration, indicating how the CodeWarrior IDE should handle this project if the project is found to be a project created by an older version of the IDE.

`revertOption`

A value in the range defined by the enumeration `ECodeWarriorRevertPanelOption`, indicating whether revert is allowed in settings panels of the project being opened.

`projectOption`

A value in the range defined by the enumeration `ECodeWarriorProjectOption`, indicating whether to cache

subprojects when the project is opened.

`pval`

On return, this parameter contains the address of a pointer to the specified project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorConvertOption" on page 482

"ECodeWarriorRevertPanelOption" on page 482

"ECodeWarriorProjectOption" on page 483

"ICodeWarriorProject" on page 630

## OpenProjectByFileSpec

This method opens a project in the CodeWarrior IDE, by specifying the project file with a file specification.

```
virtual HRESULT OpenProjectByFileSpec(
    IFileSpec *fileSpec,
    VARIANT_BOOL fMakeVisible,
    ECodeWarriorConvertOption convertOption,
    ECodeWarriorRevertPanelOption revertOption,
    CodeWarriorProject **pval) = 0;
```

`fileSpec`

A pointer to the `IFileSpec` interface containing the file specification of the project file to open.

`fMakeVisible`

Set this parameter to `true` if this operation is to be visible or `false` if it is to be hidden from the user.

`convertOption`

A value in the range defined by the `ECodeWarriorConvertOption` enumeration, representing

how the CodeWarrior IDE should handle this project if the project is found to be a project created by an older version of the IDE.

`revertOption`

A value in the range defined by the enumeration `ECodeWarriorRevertPanelOption`, representing whether revert is allowed in settings panels of the project being opened.

`pval`

On return, this parameter contains the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ECodeWarriorConvertOption" on page 482

"ECodeWarriorRevertPanelOption" on page 482

"ICodeWarriorProject" on page 630

## OpenProjectByFileSpecWithOptions

This method opens a project in the CodeWarrior IDE, by specifying the project file with a file specification and applying certain options.

```
virtual HRESULT OpenProjectByFileSpecWithOptions(
    IFileSpec *fileSpec,
    VARIANT_BOOL fMakeVisible,
    ECodeWarriorConvertOption convertOption,
    ECodeWarriorRevertPanelOption revertOption,
    ECodeWarriorProjectOption projectOption,
    ICodeWarriorProject **pval) = 0;
```

`fileSpec`

A pointer to the `IFileSpec` interface containing the file specification of the project file to open.

`fMakeVisible`

Set this parameter to `true` if this operation is to be visible or

`false` if it is to be hidden from the user.

`convertOption`

A value in the range defined by the `ECodeWarriorConvertOption` enumeration, representing how the CodeWarrior IDE should handle this project if the project is found to be a project created by an older version of the IDE.

`revertOption`

A value in the range defined by the enumeration `ECodeWarriorRevertPanelOption`, representing whether revert is allowed in settings panels of the project being opened.

`projectOption`

A value in the range defined by the enumeration `ECodeWarriorProjectOption`, indicating whether to cache subprojects when the project is opened.

`pval`

On return, this parameter contains the address of a pointer to the new project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ECodeWarriorConvertOption" on page 482

"ECodeWarriorRevertPanelOption" on page 482

"ECodeWarriorProjectOption" on page 483

"ICodeWarriorProject" on page 630

## OpenTextDocument

Use this method to open and optionally create a text document in the CodeWarrior IDE by specifying the full path.

```
virtual HRESULT OpenTextDocument(
    BSTR inPath,
    VARIANT_BOOL create,
    ICodeWarriorTextDocument **document) = 0;
```

`inPath`

The full path for the file to open.

`create`

Set this parameter to `true` if the CodeWarrior IDE should create the file if it does not exist or false otherwise.

`document`

On return, this parameter contains the address of a pointer to the specified document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTextDocument" on page 583

## OpenTextDocumentByFileSpec

Use this method to open and optionally create a text document in the CodeWarrior IDE specifying the file specification.

```
virtual HRESULT OpenTextDocumentByFileSpec(
    IFileSpec *fileSpec,
    VARIANT_BOOL create,
    ICodeWarriorTextDocument **document) = 0;
```

`fileSpec`

A pointer to the `IFileSpec` interface containing the file to

open.

`create`

Set this parameter to`true` if the CodeWarrior IDE should create the file if it does not exist or `false` if CodeWarrior should not create the file.

`document`

On return, this parameter contains the address of a pointer to the document specified.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorTextDocument" on page 583

## OpenUntitledTextDocument

Use this method to open a new text document window with no associated file in the CodeWarrior IDE.

```
virtual HRESULT OpenUntitledTextDocument(
    ICodeWarriorTextDocument **document) = 0;
```

`document`

On return, this parameter contains the address of a pointer to thenew text document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTextDocument" on page 583

## put_AllowUserInteraction

Use this method to set whether or not the CodeWarrior IDE should allow user interaction.

```
virtual HRESULT put_AllowUserInteraction(
    VARIANT_BOOL pval) = 0;
```

`pval`

Set this parameter to `true` if the IDE should allow user interaction or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Visible

Call this method to set the visibile state of the CodeWarrior application.

```
virtual HRESULT put_Visible(
    VARIANT_BOOL val) = 0;
```

`val`

Set this parameter to `true` if the application is visible or `false` if the application is not visible.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## QueueDeferredAction

Use this method to queue a deferred action in the CodeWarrior IDE.

```
virtual HRESULT QueueDeferredAction(
    IUnknown *action) = 0;
```

`action`

A pointer to the `IUnknown` interface containing the deferred action. The deferred action must be previously registered with the IDE.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Commands API Overview" on page 493

## Quit

This method closes the CodeWarrior IDE, applying a save option in the process.

```
virtual HRESULT  Quit(
    ECodeWarriorSaveOption val) = 0;
```

`val`

A value in the range defined by the enumeration `ECodeWarriorSaveOption`, indicating whether to save all the files open in the IDE, ask the user whether to save, or save none of the files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also `"ECodeWarriorSaveOption" on page 483`

## RemoveCreatableItem

Use this method to remove a creatable item to the CodeWarrior IDE. Creatable items encapsulate the items visible in the **New** window.

```
virtual HRESULT RemoveCreatableItem(
    IUnknown *item) = 0;
```

`item`

A pointer to the `IUnknown` interface, containing the creatable item to be removed from the CodeWarrior IDE.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Creatable Items" on page 523

## RemoveNamedPluginData

Use this method to remove the plug-in data for a given plug-in.

```
virtual HRESULT RemoveNamedPluginData(
    BSTR resourceName)
```

`resourceName`

The name of the plug-in resource you want to modify.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveUserTree

This method removes a specified user tree.

```
virtual HRESULT RemoveUserTree(
    ICodeWarriorUserTree *pval) = 0;
```

`pval`

A pointer to the user tree to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorUserTree" on page 436

## SetNamedPluginData

Use this method to set the plug-in data for a given plug-in.

```
virtual HRESULT SetNamedPluginData(
    BSTR resourceName,
    IStream *pluginData) = 0;
```

`resourceName`

The name of the plug-in resource you want to modify.

`pluginData`

A pointer to the `IStream` interface containing the data to load into the plug-in.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetSetting

Use this method to set the value of a given IDE preference setting.

```
virtual HRESULT SetSetting(
    BSTR settingsName,
    VARIANT pval) = 0;
```

`settingsName`

The name of the setting value to modify.

`pval`

The new value of the specified setting.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorAppEvents

This interface lets plug-ins respond to certain events in the CodeWarrior IDE. The methods outlined below are called by the IDE when a corresponding event occurs.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| DataModelCreated | ProjectVisible |
| DataModelLoaded | QueryQuit |
| Application Data Types | Quit |
| ProjectOpened | Startup |

## DataModelCreated

The CodeWarrior IDE calls this method when it creates a data model.

```
virtual HRESULT DataModelCreated(
    IUnknown *dataModel,
    VARIANT_BOOL fFromStorage) = 0;
```

`dataModel`

When the IDE calls this method, this parameter contains the created data model.

`fFromStorage`

When the IDE calls this method, this parameter contains `true` if the data model is from storage or `false` if the data model is not from storage.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## DataModelLoaded

The CodeWarrior IDE calls this method when it loads a data model.

```
virtual HRESULT DataModelLoaded(
    IUnknown *dataModel) = 0;
```

`dataModel`

When the IDE calls this method, this parameter contains the loaded data model.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ProjectOpened

The CodeWarrior IDE calls this method when it opens a project.

```
virtual HRESULT ProjectOpened(
    ICodeWarriorProject *project,
    VARIANT_BOOL fVisible) = 0;
```

`project`

When the IDE calls this method, this parameter contains the opened project.

`fVisible`

When the IDE calls this method, this parameter contains `true` if the project is visible, or `false` if the project is not visible.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also “ICodeWarriorProject” on page 630

## ProjectVisible

The CodeWarrior IDE calls this method when it makes an invisible project visible.

```
virtual HRESULT ProjectVisible(
    ICodeWarriorProject *project) = 0;
```

`project`

When the IDE calls this method, this parameter contains the visible project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## QueryQuit

The CodeWarrior IDE calls this method when it wants to quit. Your plug-in should determine whether it is safe to quit, and return a success or failure code accordingly.

```
virtual HRESULT QueryQuit(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Quit

The CodeWarrior IDE calls this method when it quits.

```
virtual HRESULT Quit(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Startup

The CodeWarrior IDE calls this method when it starts.

```
virtual HRESULT Startup(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorCompare

This interface provides methods for comparing files and folders.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| CompareFiles | CompareFolders |
| CompareFilesByFileSpec | |

## CompareFiles

This method compares the contents of two files, optionally comparing case and white space. The results of the comparison appear in the File Compare Results window in the IDE.

```
virtual HRESULT CompareFiles(
    BSTR srcFile,
    BSTR destFile,
    VARIANT_BOOL ignoreCase,
    VARIANT_BOOL ignoreSpace) = 0;
```

`srcFile`

The first file to compare.

`destFile`

The second file to compare.

`ignoreCase`

`true` if you want to ignore case in this comparison or `false` if you want to compare case.

`ignoreSpace`

`true` if you want to ignore white space or `false` if you want to

compare white space.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CompareFilesByFileSpec

This method compares the contents of two files, as indicated by file specifications, optionally comparing case and white space. The results of the comparison appear in the File Compare Results window in the IDE.

```
virtual HRESULT CompareFilesByFileSpec(
    IFileSpec *srcFile,
    IFileSpec *destFile,
    VARIANT_BOOL ignoreCase,
    VARIANT_BOOL ignoreSpace) = 0;
```

`srcFile`

A pointer to the first file to compare.

`destFile`

A pointer to the second file to compare

`ignoreCase`

`true` if you want to ignore case in this comparison or `false` if you want to compare case.

`ignoreSpace`

`true` if you want to ignore white space or `false` if you want to compare white space.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CompareFolders

This method compares the contents of two folders, optionally comparing case, white space, files that exist in only one folder or the other, and the contents of text files. The results of the comparison appear in the Folder Compare Results window in the IDE.

```
virtual HRESULT CompareFolders(
    BSTR srcFolder,
    BSTR destFolder,
    VARIANT_BOOL inIgnoreCase,
    VARIANT_BOOL inIgnoreSpace,
    VARIANT_BOOL showDifferentFiles,
    VARIANT_BOOL compareTextFileContents) = 0;
```

`srcFile`

The first folder to compare.

`destFile`

The second folder to compare

`ignoreCase`

`true` if you want to ignore case in this comparison or `false` if you want to compare case.

`ignoreSpace`

`true` if you want to ignore white space or `false` if you want to compare white space.

`showDifferentFiles`

`true` to show files that exist in one folder but not the other or `false` to ignore such files.

`compareTextFileContents`

`true` to compare the contents of text files within the two folders or `false` to ignore the contents of text files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Application Data Types

The following data types are used with the Application API:

- `ECodeWarriorConvertOption`
- `ECodeWarriorRevertPanelOption`
- `ECodeWarriorProjectOption`
- `ECodeWarriorSaveOption`
- `ECodeWarriorVCSInteractionOption`
- `Standard Folder Names`

### ECodeWarriorConvertOption

This enumeration is used to describe how to treat a project being opened via the `OpenProject` and `OpenProjectByFileSpec` methods of `ICodeWarriorApp`.

**Table 10.1 ECodeWarriorConvertOption enumeration**

| Constant | Description |
|---|---|
| `kCWConvertYes` | Convert the project without user interaction. |
| `kCWConvertNo` | Do not convert the project. |
| `kCWConvertAsk` | Ask the user whether to convert the project or not. |

### ECodeWarriorRevertPanelOption

This enumeration is used to describe whether revert is allowed in the settings panels of a project being opened via the `OpenProject` and `OpenProjectByFileSpec` methods of `ICodeWarriorApp`.

**Table 10.2 ECodeWarriorRevertPanelOption enumeration**

| Constant | Description |
|---|---|
| `kCWDonotRevertPanel` | Do not allow the user to revert settings. |
| `kCWAllowPanelRevert` | Allow the user to revert settings. |

### ECodeWarriorProjectOption

This enumeration is used to describe whether revert is allowed in the settings panels of a project being opened via the `OpenProjectWithOptions` and `OpenProjectByFileSpecWithOptions` methods of `ICodeWarriorApp`.

**Table 10.3 ECodeWarriorProjectOption enumeration**

| Constant | Description |
|---|---|
| kCWNone | Apply the default settings when opening a project. |
| kCWDisableSubProjectCaching | Disable the caching of sub projects when opening a project. |

### ECodeWarriorSaveOption

This enumeration describes settings for saving files when making the CodeWarrior IDE Quit. It is used by the `Quit` method of `ICodeWarriorApp`.

**Table 10.4 ECodeWarriorSaveOption enumeration**

| Constant | Description |
|---|---|
| kCWAskSave | Asks the user whether to save all the files before closing the IDE. |
| kCWSaveAll | Saves all the files before closing the IDE. |
| kCWSaveNone | Closes the IDE without saving any files. |

### ECodeWarriorVCSInteractionOption

This enumeration is used to describe how user interaction should be handled when a version control operation is performed by the CodeWarrior IDE. It is used in the `AttemptModify` method of `ICodeWarriorApp`.

**Table 10.5 ECodeWarriorVCSInteraction enumeration**

| Constant | Description |
|---|---|
| `kCWAsk` | Ask the user whether to make version control changes |
| `kCWDoNothing` | Do not make version control changes |
| `kCWUseDefault` | Use the defaul version control behavior when making changes - useful when working with invisible projects |

### Standard Folder Names

These folder names represent standard folders within the CodeWarrior folder and are for use with the `FindLogicalFolder` method of `ICodeWarriorApp`.

**Table 10.6 Standard folder name enumeration**

| Constant | Description |
|---|---|
| `kMWStationeryFolder` | The folder where CodeWarrior project stationery is stored |
| `kMWRadStationeryFolder` | The folder where CodeWarrior RAD stationery is stored |
| `kMWCompilerFolder` | The folder where the CodeWarrior IDE resides |
| `kMWPluginsFolder` | The folder where CodeWarrior plug-ins reside |
| `kLocalizedResourcesFolder` | The folder where localized resources reside |

# 11

# Collections

This chapter describes how to use the Collections API to create and manage Collections in the CodeWarrior IDE.

This chapter contains the following sections:

- Collections API Overview
- Using the Collections API
- Collections API Reference

## Collections API Overview

The Collections API is a set of interfaces that allows a plug-in to create and manipulate collections of IDE-related objects. A collection is a class that holds a list of similar items. The CodeWarrior IDE uses collections to hold lists of IDE-related objects.

## Using the Collections API

Most of the collections returned by the IDE are read-only. Calling **Add** or **Remove** methods on them returns `E_FAIL`. The **Add** and **Remove** methods are provided for collections that users create to pass into the IDE.

# Collections API Reference

The Collections API contains numerous interfaces for working with numerous types of data. However, all collections in this API implement the same methods and behaviors. This section describes a single generic collection that applies to all CodeWarrior collections. CodeWarrior collections are provided for each of the data types in Table 11.1.

**Table 11.1 Data Types with Associated Collections**

| |
|---|
| BSTR |
| ICodeWarriorAccessPath |
| ICodeWarriorBaseClass |
| ICodeWarriorClass |
| ICodeWarriorComponent |
| ICodeWarriorComponentEvent |
| ICodeWarriorComponentEventSet |
| ICodeWarriorComponentProperty |
| ICodeWarriorCreatableItem |
| ICodeWarriorDataMember |
| ICodeWarriorDesign |
| ICodeWarriorDocument |
| ICodeWarriorMessage |
| ICodeWarriorMethod |
| ICodeWarriorProject |
| ICodeWarriorProjectFile |
| ICodeWarriorSubTarget |
| ICodeWarriorSymbol |
| ICodeWarriorTarget |
| ICodeWarriorTargetFile |
| ICodeWarriorUserTree |
| IFileSpec |

## CodeWarrior Collections

This is a generic description of all collection interfaces provided by the CodeWarrior COM API. This description applies to all CodeWarrior collection interfaces.

As a rule, the name of each CodeWarrior collection interface is constructed by taking the name of the data interface for the collection (for example, `ICodeWarriorAccessPath`), and appending the word "`Collection`" to the end of it (as in `ICodeWarriorAccessPathCollection`). All of the collection data types are listed in Table 11.1 on page 488.

**NOTE** The exception to this rule is `IBSTRCollection`, where "I" is prepended to the data type name.

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

Every CodeWarrior collection interface provides these methods:

| | |
|---|---|
| Add | get_ReadOnly |
| get_Count | Item |
| get__NewEnum | Remove |

## Add

This method appends an item to a collection. The `get_Count` method reflects whether or not this method can be used.

```
virtual HRESULT Add(
    VarType *var) = 0;
```

`var`

One of the collection data types listed in Table 11.1 on page 488.

**NOTE** For the `BSTR` collection data type, use a `BSTR` instead of a pointer to a `BSTR`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Count

This method gets the number of items in a collection.

```
virtual HRESULT get_Count(
    long *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to the number of items contained in this collection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get__NewEnum

This method gets an enumerator for a collection.

```
virtual HRESULT get__NewEnum(
    IDispatch **pval) = 0;
```

`pval`

Upon return, this parameter the address of a pointer toan enumerator for this collection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_ReadOnly

This method gets the read-only status of a collection. The result of this method determines whether the **Add** and **Remove** methods of a collections may be used.

**NOTE** All CodeWarrior-generated collections are read only. Only user-generated collections can be modified.

```
virtual HRESULT get_ReadOnly(
    VARIANT_BOOL *bool) = 0;
```

`bool`

On return, this parameter is set to `true` if the collection is read-only or `false` if the collection is modifiable.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Item

This method gets an item from a collection.

```
virtual HRESULT Item(
    long index,
    VarType *var) = 0;
```

`index`

The index of the item you want.

`var`

One of the collection data types listed in Table 11.1 on page 488. On return, this parameter contains a pointer to the requested item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Remove

This method removes an item from a collection. The `get_Count` method reflects whether or not this method can be used.

```
virtual HRESULT Remove(
    VarType *var) = 0;
```

`var`

One of the collection data types listed in Table 11.1 on page 488.

**NOTE** For the `BSTR` collection data type, use a `BSTR` instead of a pointer to a `BSTR`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# 12

# Commands

This chapter shows how to use the Command API to allow plug-ins to intercept commands from the CodeWarrior IDE.

This chapter contains the following sections:

- Commands API Overview
- Using the Commands API
- Commands API Reference

## Commands API Overview

The Command API allows plug-ins to respond to commands from the CodeWarrior IDE.

The commands interface allows users to define command groups and assign certain command features at initialization and during run time.

All interfaces defined in the commands API are pure abstract base classes. All interfaces defined in this section inherit from `IUnknown`.

Command groups are created only when the IDE launches. Run time manipulation of commands is achieved via `ICodeWarriorCommandHandler::GetCommandStatus()`.

# Using the Commands API

Creating a command group to intercept user events within the IDE typically involves several steps and can involve several interfaces. However, some of the most common uses of command groups are for creating menus and menu items at IDE launch and enabling menu items to perform desired actions. Typical steps for creating a command group, such as menus, involve:

- Creating a Command Group
- Assigning a Command Handler
- Registering a Command
- Displaying a Command Group

The Commands API also uses data types, as described in this section:

- Commands Data Types

### Creating a Command Group

All commands are created with the `ICodeWarriorCommandRegistry` interface. However, you must first provide a service provider interface (`IServiceProvider`) before you can create a command group. You also must know the GUID of the CodeWarrior Service ID as well as the Interface ID. Listing 12.1 demonstrates how to use the `QueryService()` method when creating a new command group.

**Listing 12.1 Example Code - Creating a Command Group**

```
ICodeWarriorCommandRegistry *cmdRegistry;

// Here we query the service provider to get the command registry
// interface.

servProv->QueryService(
  SID_SCodeWarriorCommandRegistry,
  IID_ICodeWarriorCommandRegistry, &cmdRegistry);

// If the command is supported by the IDE then we can create
// our command info and register our commands
```

```
if( cmdRegistry ){

  // Assign command handlers if we want to here

  // Create the command group here, which will be used for our
  // menu with the title "My Menu"
  BSTR bstr = SysAllocString( OLESTR("My Menu"));
  cmdRegistry->CreateNewCommandGroup( kToolbarTestPluginID,
      cmdGroup_TestPlugin, bstr, cmdGroup_Nothing );

  // Get toolbar icon info if any

  // Register Commands

  // Release
  }
```

### Assigning a Command Handler

Assigning a command handler to a command group item allows that item to respond to events handled from a particular command. We can create a reference to an interface by creating a command handler and then registering it in the `commandHandler` field of the `SRegisterCommandInfo` structure. Listing 12.2 shows how to assign a command handler that will be used for a menu item, which is demonstrated in Listing 12.3.

**Listing 12.2 Example Code - Assigning a Command Handler**

```
ICodeWarriorWindowManager *windowMgr = NULL;

    servProv->QueryService(SID_SCodeWarriorWindowManager,
        IID_ICodeWarriorWindowManager, &windowMgr);

    /* Handle commands for creating a new window */
    ICodeWarriorCommandHandler *cmdHandler = new
        ExampleCommandHandler(windowMgr);
```

### Registering a Command

Once you have a command group, you can register individual commands. All commands should be registered with the

`RegisterCommand()` method from the `ICodeWarriorCommandHandler` interface. The `commandHandler` field of the `SRegisterCommandInfo` structure contains a pointer to the interface whose routines you want to access for this object. Listing 12.2 shows how to assign a command handler for a command group item.

In order to respond to commands sent by the IDE, your plug-in must register a command handler for the particular command (`commandID`) you want the plug-in group (`commandGroupID`) to intercept within the main plug-in (`pluginID`). An example of using the command registry is shown in Listing 12.3.

**Listing 12.3 Example Code - Registering a Command**

```
  // A new menu item identified by cmd_NewPluginWindow will be
  // added to the command group specified by cmdGroup_TestPlugin
  // You will need to make a similar call for each item in you
  // menu.

  SysReAllocString(&bstr, OLESTR("My New Window"));
  SRegisterCommandInfo cmdInfo;
  cmdInfo.pluginID = kToolbarTestPluginID;
  cmdInfo.commandID = cmd_NewPluginWindow;
  cmdInfo.commandGroupID = cmdGroup_TestPlugin;
  cmdInfo.commandName = bstr;
  cmdInfo.toolbarIcon = tbIconInfo;
  cmdInfo.visibleInMenu = true;
  cmdInfo.itemType = CWCommandItemType_Command;
  cmdInfo.extraInfo.commandHandler = cmdHandler;
  cmdRegistry->RegisterCommand(cmdInfo, cmd_Nothing);

  // Always call Release when you are through with an interface!
  cmdRegistry->Release();
}
```

### Displaying a Command Group

The last step in establishing your command group is displaying it within the IDE so the user can access it. Listing 12.4 demonstrates how to display a command group as a menu on the menu bar at IDE launch.

**Listing 12.4 Example Code - Displaying a Command Group**

```
// Show the command group in a menu
// We will do this by providing a menu manager interface to
// manage our commands

ICodeWarriorMenuManager *menuMgr;
servProv->QueryService(SID_SCodeWarriorMenuManager,
  IID_ICodeWarriorMenuManager, &menuMgr );
if ( menuMgr ){
  menuMgr->ShowCommandGroupMenu(kToolbarTestPluginID,
    cmdGroup_TestPlugin, true);
  menuMgr->Release();
}
```

# Commands API Reference

This section describes the functions contained in the following interfaces:

- ICodeWarriorCommandHandler
- ICodeWarriorCommandRegistry
- ICodeWarriorDeferredAction

The following data types are used with these interfaces:

- Command status
- SRegisterCommandGroup

# ICodeWarriorCommandHandler

This interface allows you to intercept and handle built-in commands as well as custom commands registered by your plug-in.

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| ExecuteCommand | GetCommandStatus |

## ExecuteCommand

The IDE calls this method when a command needs to be executed by your plug-in. Usually this is the result of an associated menu or toolbar button being selected by the user.

```
virtual HRESULT ExecuteCommand(
    CWCommandID inCommandNumber,
    ICodeWarriorCommandHandler *inDefaultHandler
    ) = 0;
```

`inCommandNumber`

The ID of a command handler to be executed. Use a built-in command handler or an external command handler registered by the plug-in via the RegisterCommand method. To handle a built-in command, test this parameter to see if it is equal to the appropriate predefined constant in `CodeWarriorCommandNumbers.h`.

`inDefaultHandler`

The default command handler for this command. If the plug-in does not handle this command, it should call this handler to pass control on to that handler.

Returns `S_OK if this method call succeeded or an appropriate error if it failed.`

See Also "ICodeWarriorCommandHandler" on page 499

"RegisterCommand" on page 503

## GetCommandStatus

This method is called to update menu items at run-time.

```
virtual HRESULT GetCommandStatus(
    CWCommandID inCommandNumber,
    BOOL &outEnabled, SH
    ORT &outCheckedState,
    BSTR &outNewName,
    ICodeWarriorCommandHandler *inDefaultHandler
    ) = 0;
```

`inCommandNumber`

The ID of the command handler to be executed. This may be a built-in command handler or a command handler that was registered by the plug-in.

`outEnabled`

The current enabled state of this command. If the command is enabled, this parameter returns true. Otherwise, it returns false. The visual element for this command in the CodeWarrior IDE is drawn accordingly.

`outCheckedState`

The current checked state of the menu item for this command. If the item is checked, this parameter returns true. Otherwise, it returns false.

`outNewName`

The current name of this command, as it is displayed in the IDE menus or the toolbar tool tips. Set this item to NULL for no change of the current menu item title.

`inDefaultHandler`

The default command handler for this command. If the plug-in does not handle this command, it should call this handler to pass control on to that handler.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Enumeration for Command Status" on page 505

# ICodeWarriorCommandRegistry

This interface allows you to create and dispose of your own custom commands in the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| CreateNewCommandGroup | RegisterCommand |

## CreateNewCommandGroup

This method creates a new command group. A command group is a menu or sub menu. The constant `cmdGroup_Nothing` is used to define a new menu. You will need to call `ICodeWarriorMenuManager::ShowCommandGroupMenu()` to display the menu.

```
virtual HRESULT CreateNewCommandGroup(
    const CWPluginID inPluginID,
    CWCommandGroupID inGroupID,
    BSTR inGroupName,
    CWCommandGroupID inParentGroupID) = 0;
```

`inPluginID`

The ID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inGroupID`

The ID for the group.

`inGroupName`

The name of the group you want to create (that is, the title of the menu).

`inParentGroupID`

The ID of the parent group.

Returns `HRESULT`

See Also `"ICodeWarriorMenuManager" on page 612`

## RegisterCommand

This method registers an external command with the CodeWarrior IDE.

```
virtual HRESULT RegisterCommand(
    const SRegisterCommandInfo &inCmdInfo,
    LONG inInsertBeforeCommandID) = 0;
```

`SRegisterCommandGroup`

This data structure must be filled in with the appropriate IDs, names, and types to be registered as a command.

`inInsertBeforeCommandID`

Specifies the insertion location where your command appears. This is typically `cmd_Nothing`, which is defined in `CodeWarriorCommandNumbers.h`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "SRegisterCommandGroup" on page 506

# ICodeWarriorDeferredAction

`CodeWarriorDeferredAction.h` defines this interface. The method in this interface can be posted on an application-level queue for execution after the handling of the current event.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| Execute | |

## Execute

This method executes a command.

```
virtual HRESULT Execute(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# Commands Data Types

## Command status

The following enumerations in Table 12.1 are used as constants to return the `outCheckedState` parameter of the `ICodeWarriorCommandHandler::GetCommandStatus()` method:

**Table 12.1 Enumeration for Command Status**

| Constant | Description |
|---|---|
| `CWCommand_CheckMark_NoChange` | The specified menu has not changed. |
| `CWCommand_CheckMark_Clear` | The specified menu is to be cleared. |
| `CWCommand_CheckMark_Set` | The specified menu is set. |

## Menu Commands

The following enumeration in Table 12.2 are used to fill out the `itemType` field of the `SRegisterCommandGroup` structure when using the `RegisterCommand()` method:

**Table 12.2 Enumeration for menu commands**

| Constant | Description |
|---|---|
| `CWCommandItemType_Command` | The item is a command |
| `CWCommandItemType_Separator` | The item is a separator on a menu |
| `CWCommandItemType_SubMenu` | The item is a sub menu |

### SRegisterCommandGroup

The `SRegisterCommandGroup` structure is used to register a command and set its properties as a parameter of `ICodeWarriorCommandRegistry::RegisterCommand()`. See Listing 12.3 for an example of registering a command with `SRegisterCommandGroup`. This structure is defined as follows:

```
struct SRegisterCommandInfo {
    CWPluginID          pluginID;
    CWCommandID         commandID;
    CWCommandGroupID    commandGroupID;
    BSTR                commandName;
    CWToolbarIconInfo   toolbarIcon;
    BOOL                visibleInMenu;
    long                itemType;
    union {
      IUnknown          *commandHandler;
      CWCommandGroupID  subGroupID;
      } extraInfo;
    };
```

`pluginID`

The plug-in ID for the plug-in to which the command belongs.

`commandID`

The ID of the command group provides the location of the command within a command group specified by `commandGroupID`. The `commandID` values must be in the range of 10,000 to 10,999.

`commandGroupID`

The command group (menu) to which the item belongs.

`commandName`

The name of the command to be displayed, as specified by `commandID`.

`toolbarIcon`

A toolbar icon reference for the command you are registering. Pass `toolbarIcon_None` for no icon information. This is a platform specific data type.

On the Mac OS, the `CWToolbarIconInfo` is a `Handle` to the item. Mac users need to provide Mac Toolbox calls to get this resource, which are small icon sweet resoures (`ics#`). See `UseResFile()` and `GetIconSuite()` in the Mac Toolbox for more information.

Windows icons must be registered first before they are used. On Windows, icons are identified by an index into bitmaps that are registered via `ICodeWarriorToolBarRegistry::RegisterToolbarIcons()`.

`visibleInMenu`

Set this item to `true` to display the menu item or `false` to hide the menu item from the user.

`itemType`

Specify the type of item in the command group. Use the enumerations specified in Table 12.2.

`commandHandler`

A pointer to the `IUnknown` interface whose methods you want to use. Set this item to `NULL` if you do not need any additional interface routines. Otherwise, you will need to pass a pointer to the interface whose methods you want to access from the command specified in `commandID`.

`subGroupID`

A sub menu group ID, if one exists.

# 13

# Components

This chapter shows how to use the Components API to add your own components in the CodeWarrior IDE.

This chapter contains the following sections:

- Components API Overview
- Components API Reference

## Components API Overview

The Components API is a set of interfaces that allows a plug-in to create and manipulate components in the CodeWarrior IDE.

## Components API Reference

This section describes the functions contained in the following interfaces:

- ICodeWarriorComponent
- ICodeWarriorComponentEvent
- ICodeWarriorComponentEventSet
- ICodeWarriorComponentProperty

# ICodeWarriorComponent

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| get_CanHaveMultipleEventSets | get_EventSets |
| get_Class | get_Methods |
| get_DefaultEvent | get_Properties |
| get_EventConnectionsEnabled | |

## get_CanHaveMultipleEventSets

This method gets whether this component can have multiple event sets.

```
virtual HRESULT get_CanHaveMultipleEventSets(
    BOOL *pval) = 0;
```

`pval`

On return, this parameter is set to `true` if the component can have multiple event sets or `false` if the component cannot have multiple event sets.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Class

The IDE calls this method to obtain the class of this component.

```
virtual HRESULT get_Class(
    ICodeWarriorClass **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the class of this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorClass" on page 668

## get_DefaultEvent

This method gets the default event for this component.

```
virtual HRESULT get_DefaultEvent(
    ICodeWarriorComponentEvent **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer tothe default event for this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorComponentEvent" on page 514

## get_EventConnectionsEnabled

This method gets whether event connections are enabled for this component.

```
virtual HRESULT get_EventConnectionsEnabled(
    BOOL *pval) = 0;
```

`pval`

On return, this parameter is set to `true` if event connections are enabled for this component or `false` if event connections are not enabled.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_EventSets

This method gets the events sets for this component.

```
virtual HRESULT get_EventSets(
    ICodeWarriorComponentEventSetCollection
    **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all the methods for this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_Methods

This method gets all of the methods for this component.

```
virtual HRESULT get_Methods(
    ICodeWarriorMethodCollection **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all the methods for this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_Properties

This method gets all of the properties for this component.

```
virtual HRESULT get_Properties(
    ICodeWarriorComponentPropertyCollection
    **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a collection of all the properties for this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

# ICodeWarriorComponentEvent

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| GetDefaultMethodName | get_Method |
| get_EventSet | get_Name |

## GetDefaultMethodName

This method gets the default method name for this component.

```
virtual HRESULT GetDefaultMethodName(
    IUnknown *modelobject,
    BSTR *pdefname) = 0;
```

`modelobject`

A pointer to the current object.

`pdefname`

On return, this parameter contains the default method name for this component.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_EventSet

This method gets the component event set that this component event belongs to.

```
virtual HRESULT get_EventSet(
    ICodeWarriorComponentEventSet **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the event set that this component event belongs to.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorComponentEventSet" on page 517

## get_Method

This method gets the method for this component event.

```
virtual HRESULT get_Method(
    ICodeWarriorMethod **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the method for this component event.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorMethod" on page 677

## get_Name

This method gets the name of this component event.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

The name of this component event.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorComponentEventSet

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| get_Class | get_EventSetName |
| get_Events | |

## get_Class

This method gets the class for this component event set.

```
virtual HRESULT get_Class(
    ICodeWarriorClass **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the class for this component event set.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorClass" on page 668

## get_Events

This method gets a collection of the events in this component event set.

```
virtual HRESULT get_Events(
    ICodeWarriorComponentEventCollection **pval
    ) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the collection of events for this component event set.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_EventSetName

This method gets the name of this component event set.

```
virtual HRESULT get_EventSetName(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of this component event set.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorComponentProperty

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| get_Getter | get_Setter |
| get_Name | get_Type |

## get_Getter

This method gets the component method that is responsible for getting this component property.

```
virtual HRESULT get_Getter(
    ICodeWarriorMethod **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the component method that is responsible for getting this component property.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also `"ICodeWarriorMethod" on page 677`

## get_Name

This method gets the name of this component property.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of this component property.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Setter

This method gets the component method that is responsible for setting this component property.

```
virtual HRESULT get_Setter(
    ICodeWarriorMethod **pval) = 0;
```

`pval`

Supply the address of a pointer to the  interface. Upon return it contains the component method that is responsible for setting this component property.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorMethod" on page 677

## get_Type

This method gets the type of this component property.

```
virtual HRESULT get_Type(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the type of this component property.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# 14

# Creatable Items

This chapter shows how to use the Creatable Items API to implement your own creatable items for use in the CodeWarrior IDE.

## Creatable Items API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorCreatableItem`
- `ICodeWarriorCreateFileItem`
- `ICodeWarriorCreateObjectItem`
- `ICodeWarriorCreateProjectItem`

The following data types are used with these interfaces:

- Built-in Icon Index Values
- Creatable Item Category Constants
- `ECreateProjectType`

## ICodeWarriorCreatableItem

This interface defines an item that fits into one of the panes of creatable items visible in the **New** window in the CodeWarrior IDE. Creatable items represent stationery or wizards that the user may use to start a project, file or some other item in the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| GetCategory | GetIcon |
| GetDisplayName | InvokesWizard |

## GetCategory

The CodeWarrior IDE calls this method to get the category of this creatable item, which determines where the creatable item is displayed in the New window.

```
virtual HRESULT GetCategory(
    BSTR *category) = 0;
```

`category`

Set this parameter to one of the creatable item category constants already defined for you, representing the category of this creatable item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Creatable Item Category Constants" on page 538

## GetDisplayName

The CodeWarrior IDE calls this method to get the display name for this creatable item. The string you supply is used to display the name of this creatable item in the **New** window.

```
virtual HRESULT GetDisplayName(
    BSTR *displayName) = 0;
```

`displayName`

Set this string to the name of this creatable item as it should appear in CodeWarrior windows and dialog boxes.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetIcon

The CodeWarrior IDE calls this method to get the icon for this creatable item. The icon you supply is displayed next to this creatable item in the New window.

```
virtual HRESULT GetIcon(
    IUnknown *iconList,
    int *index) = 0;
```

`iconList`

A pointer to the `IUnknown` interface containing the icon list that holds the icon for this creatable item.

`index`

Set this integer to one of the predefined icon index values or, if your creatable item uses a custom icon, supply the index in the icon list of the custom icon.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also “Built-in Icon Index Values” on page 538

## InvokesWizard

The CodeWarrior IDE calls this method to discover whether this creatable item invokes a wizard or not. If it does invoke a wizard, the IDE appends the localized string for “Wizard” to the display name of the creatable item (for example, "Java Applet Wizard").

```
virtual HRESULT InvokesWizard(void) = 0;
```

Returns `S_OK` if creating the item invokes a wizard, or `S_FALSE` if creating the item does not invoke a wizard.

# ICodeWarriorCreateFileItem

This interface is used for a creatable file item that is displayed in the **File** pane of creatable items visible in the **New** window in the CodeWarrior IDE.

### Inherited Interfaces

- `ICodeWarriorCreatableItem`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| CanAddFileToProject | CreateAndAddFile |
| CanCreateUntitledFile | CreateUntitledFile |

## CanAddFileToProject

The CodeWarrior IDE calls this method to determine if this creatable item is able to add a file to a project.

```
virtual HRESULT CanAddFileToProject(void) = 0;
```

Returns `S_OK` if this creatable item is able to add files to a project or an appropriate error if this creatable item is not able to add files to a project.

## CanCreateUntitledFile

The CodeWarrior IDE calls this method to determine if this creatable item is able to create an untitled file.

```
virtual HRESULT CanCreateUntitledFile(void) = 0;
```

Returns `S_OK` if this creatable item is able to create an untitled file or an appropriate error if this creatable item is not able to create an untitled file.

## CreateAndAddFile

This method is called by the CodeWarrior IDE when the user instructs it to create a new file with this creatable item selected, and the **Add to project** option is checked.

```
virtual HRESULT CreateAndAddFile(
    IFileSpec *newFileSpec,
    ICodeWarriorProject *project,
    ICodeWarriorTargetCollection *targets,
    VARIANT_BOOL *fileAdded) = 0;
```

`newFileSpec`

A pointer to the `IFileSpec` interface that contains the file specification for the newly created file.

`project`

A pointer to the `ICodeWarriorProject` interface containing the project to which the new file is to be added.

`targets`

A pointer to the ICodeWarriorTargetCollection interface containing a list of the targets to which the new file is to be added.

`fileAdded`

Set this parameter to `true` if the file is sucessfully added to the specified project or `false` if the file could not be added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorProject" on page 630

"Using the Collections API" on page 487

## CreateUntitledFile

The CodeWarrior IDE calls this method when the user instructs the IDE to create a new file with this creatable item selected, and the **Add to project** option is unchecked.

```
virtual HRESULT CreateUntitledFile(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorCreateObjectItem

This interface is used for a creatable file item that is displayed in the **Object** pane of creatable items visible in the **New** window in the CodeWarrior IDE.

### Inherited Interfaces

- `ICodeWarriorCreatableItem`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| AreObjectsCreatedInDesign | CreateObjectInTargets |
| CreateObjectInDesign | NeedsObjectName |

## AreObjectsCreatedInDesign

The CodeWarrior IDE calls this method to determine if this creatable item creates objects in designs.

```
virtual HRESULT AreObjectsCreatedInDesign(
    void) = 0;
```

Returns Return `S_OK` if this creatable item is able to create objects in designs or an appropriate error if this creatable item is not able to create objects in designs.

## CreateObjectInDesign

The CodeWarrior IDE calls this method to instruct this creatable item to create an object in a specific design of a project.

```
virtual HRESULT CreateObjectInDesign(
    BSTR newItemName,
    ICodeWarriorProject *project,
    ICodeWarriorDesign *design) = 0;
```

`newItemName`

The requested name of the new object being created.

`project`

A pointer to the `ICodeWarriorProject` interface. This parameter specifies the project containing the design to which the object is being added.

`design`

A pointer to the `ICodeWarriorDesign` interface. This parameter specifies the design to which the object is being added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

"ICodeWarriorDesign" on page 542

## CreateObjectInTargets

The CodeWarrior IDE calls this method to instruct this creatable item to create an object in a specific target of a project.

```
virtual HRESULT CreateObjectInTargets(
    BSTR newItemName,
    ICodeWarriorProject *project,
    ICodeWarriorTargetCollection *targets) = 0;
```

`newItemName`

The requested name for the new object being created.

`project`

A pointer to the `ICodeWarriorProject` interface. This parameter specifies the project containing the design to which the object is being added.

`targets`

A pointer to the ICodeWarriorTargetCollection interface. This parameter specifies a list of the targets to which the object is being added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

"Using the Collections API" on page 487

## NeedsObjectName

The CodeWarrior IDE calls this method to determine if this creatable item requires a user-specified name. If so, the IDE enables the appropriate option in the **New** dialog..

```
virtual HRESULT NeedsObjectName(void) = 0;
```

Returns `S_OK` if this creatable item requires a user-specified name or an appropriate error if this creatable item does not require a user-specified name.

# ICodeWarriorCreateProjectItem

This interface is used for a creatable file item that is displayed in the **Project** pane of creatable items visible in the **New** window in the CodeWarrior IDE.

### Inherited Interfaces

- `ICodeWarriorCreatableItem`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| CreateInExistingProject | GetCreatedProjectType |
| CreateNewProject | RequiresFileExtension |

## CreateInExistingProject

The CodeWarrior IDE calls this method when the user instructs CodeWarrior to create a new project using this creatable item with the **Add to project** option selected in the **New** window. Your plug-in is expected to create a new project and add it to an existing project as a subproject.

```
virtual HRESULT CreateInExistingProject(
    BSTR newItemName,
    ICodeWarriorProject *project) = 0;
```

`newItemName`

A `BSTR` containing the name of the new project being created.

`project`

A pointer to the `ICodeWarriorProject` interface containing the project to which the new project is being added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## CreateNewProject

The CodeWarrior IDE calls this method when the user instructs IDE to create a new project using this creatable item.

```
virtual HRESULT CreateNewProject(
    IFileSpec *newFileSpec) = 0;
```

`newFileSpec`

A pointer to the `IFileSpec` interface containing a file specification with the user-specified name of the new project and pointing to the location where the new project should be created.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## GetCreatedProjectType

The CodeWarrior IDE calls this method to determine what type of project this creatable item generates.

```
virtual HRESULT GetCreatedProjectType(
    ECreateProjectType *pval) = 0;
```

`pval`

A pointer to a value in the range defined by the `ECreateProjectType` enumeration, reflecting the type of project this creatable item generates.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECreateProjectType" on page 538

## RequiresFileExtension

The CodeWarrior calls this method to determine if this creatable item requires a file extension.

```
virtual HRESULT RequiresFileExtension(
    VARIANT_BOOL *pval) = 0;
```

`pval`

Set this parameter to `true` if this creatable item requires a file extension (such as `.mcp` or `.txt`) for the file to be valid. Set it to `false` if this creatable item does not require a file extension. For example, a Mac OS plug-in might return `false`, because a file extension is not required for the file to be valid on Mac OS.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Creatable Items Data Types

The following data types are used with the Creatable Items API:

- Built-in Icon Index Values
- Creatable Item Category Constants
- `ECreateProjectType`

### Built-in Icon Index Values

CodeWarrior supplies built-in icons for use with creatable items. Table 14.1 shows the indexes of the built-in icons for creatable items.

**Table 14.1 Built-in Icons**

| Constant | Icon | Value | Description |
|---|---|---|---|
| newIconProject |  | -1 | CodeWarrior project files |
| newIconTextFile |  | -2 | CodeWarrior text files |
| newIconCatalog |  | -3 | CodeWarrior catalog files |

### Creatable Item Category Constants

These constants are used to describe the possible categories of creatable items displayed by the CodeWarrior IDE in the New window. Implementations of the `ICodeWarriorCreatableItem` interface should return one of these constants for their category.

**Table 14.2 Creatable Item Categories**

| Constant | Description |
|---|---|
| `kMWNewProjectCategoryName` | Creatable items with this category are displayed in the “Project”pane. |
| `kMWNewFileCategoryName` | Creatable items with this category are displayed in the “File”pane. |
| `kMWNewObjectCategoryName` | Creatable items with this category are displayed in the “Object”pane. |

### ECreateProjectType

CodeWarrior categorizes `ICodeWarriorCreateProjectItem` interfaces with the following types based on the capabilities of the creatable item in question.

**Table 14.3 ECreateProjectType Enumerations**

| Constant | Description |
|---|---|
| createsProjectOnly | Creatable item only creates projects. |
| createsDesign | Creatable item creates and designs. |
| createsTargets | Creatable item creates projects, designs, and targets. |

# 15

# Designs

This chapter shows how to use the Designs API to manage designs in the CodeWarrior IDE.

This chapter contains the following sections:

- Designs API Overview
- Designs API Reference

## Designs API Overview

This API lets you manipulate designs within a project. You can use it to add and remove files and targets, initialize and close designs, and otherwise change the details of designs.

## Designs API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorDesign`
- `ICodeWarriorDesignAttachment`
- `ICodeWarriorDesignEvents`

The following data types are used with these interfaces:

- `ECodeWarriorLinkFlags`

## ICodeWarriorDesign

This interface provides methods for working with designs within the CodeWarrior IDE.

### Inherited Interfaces

- `IDispatch`
- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| AddAttachment | FindAndAddFile2 |
| AddFile | get_BrowserDB |
| AddFile2 | get_DataModel |
| AddFileByFileSpec | get_Name |
| AddFile2ByFileSpec | get_Project |
| CompileFiles | get_Targets |
| CompileFilesAndWaitToComplete | put_Name |
| ContainsTarget | RemoveAttachment |
| FindAndAddFile | RemoveTargetFromDesign |

## AddAttachment

This method adds an attachment to the design.

```
virtual HRESULT AddAttachment(
    const CLSID *attachmentCLSID) = 0;
```

`attachmentCLSID`

A pointer to the attachment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "RemoveAttachment" on page 551

## AddFile

This method adds a file to the design.

```
virtual HRESULT AddFile(
    BSTR path,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

The absolute path to the file you want to add to the design.

`groupPath`

The absolute path to the group within which the new file should be added.

`projectFile`

The address of a pointer to the file you want to add to the project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## AddFile2

This method adds a file to the design and set link flags on the file.

```
virtual HRESULT AddFile2(
    BSTR path,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

The absolute path to the file you want to add to the design.

`groupPath`

The path to the group within which the new file should be added.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

The address of a pointer to the file you want to add to the project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## AddFile2ByFileSpec

This method adds a file to the design, by using a file specification object, and set link flags on the file.

```
virtual HRESULT  AddFile2ByFileSpec(
    IFileSpec *fileSpec,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`fileSpec`

The file specification (as a pointer to an IFileSpec object) that defines the file to add to the project.

`groupPath`

The absolute path to the group within which the new file should be added.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags

enumeration, representing how the linker should link this file.

`projectFile`

The address of a pointer to the file you want to add to the project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## AddFileByFileSpec

This method adds a file to the design, by using a file specification object.

```
virtual HRESULT AddFileByFileSpec(
    IFileSpec *fileSpec,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`fileSpec`

The file specification (as a pointer to an IFileSpec object) that defines the file to add to the project.

`groupPath`

The absolute path to the group within which the new file should be added.

`projectFile`

The address of a pointer to the file you want to add to the project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CompileFiles

This method causes a compilation of the current design.

```
virtual HRESULT CompileFiles(
    ICodeWarriorProjectFileCollection *collection,
    long *cookie) = 0;
```

`collection`

A pointer of type ICodeWarriorProjectFileCollection indicating the collection of files to compile.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## CompileFilesAndWaitToComplete

This method causes a compilation of the current design and returns all the build messages created by the compiler.

```
virtual HRESULT CompileFilesAndWaitToComplete(
    ICodeWarriorProjectFileCollection *collection,
    ICodeWarriorBuildMessages **buildMessages) = 0;
```

`collection`

A pointer of type ICodeWarriorProjectFileCollection indicating the collection of files to compile.

`buildMessages`

On return, this parameter contains the address of a pointer to the build messages generated by the compiler.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## ContainsTarget

This method discovers if the current design contains a particular target.

```
virtual HRESULT ContainsTarget(
    ICodeWarriorTarget *target) = 0;
```

`target`

A pointer to the target you are looking for within the design.

Returns S_OK if the specified target is present within the current design or an appropriate error if not.

## FindAndAddFile

This method finds a file and adds it to the design.

```
virtual HRESULT FindAndAddFile(
    BSTR path,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

Either the absolute (fully qualified) path to the file you want to add to the design or just the name of the file. If you provide just the file name, the IDE searches the access paths and adds the first file of that name that it finds. If you want to add two one files with identical names, use the fully qualified path to each one.

`groupPath`

The absolute path to the group within which the new file should be added.

`projectFile`

On return, this parameter contains the address of a pointer to the project file to which the file was added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## FindAndAddFile2

This method finds a file and adds it to the design. This method also lets you set link flags on the file.

```
virtual HRESULT FindAndAddFile2(
    BSTR path,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

Either the absolute (fully qualified) path to the file you want to add to the design or just the name of the file. If you provide just the file name, the IDE searches the access paths and adds the first file of that name that it finds. If you want to add two one files with identical names, use the fully qualified path to each one.

`groupPath`

The absolute path to the group within which the new file should be added.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file to which the file was added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## get_BrowserDB

This method gets a pointer to a listing of the symbols created by a compilation of the files in the design.

```
virtual HRESULT get_BrowserDB(
    ICodeWarriorSymbolContainer **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to a container holding the symbols created by the latest compliation of the files in the design.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSymbolContainer" on page 694

## get_DataModel

This method gets the data model for this design.

```
virtual HRESULT get_DataModel(
    IUnknown **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the data model for the design.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of a design.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of the design.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Project

This method gets the project object for the project to which the current design belongs.

```
virtual HRESULT get_Project(
    ICodeWarriorProject **pval) = 0;
```

`pval`

Upon return, this parameter contains the address of a pointer to the project that the design belongs to.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## get_Targets

This method gets a list of build targets in this design.

```
virtual HRESULT get_Targets(
    ICodeWarriorTargetCollection **pval) = 0;
```

`pval`

Upon return, this parameter contains a collection of the build targets in this design.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## put_Name

This method to set the name of a design.

```
virtual HRESULT put_Name(
    BSTR pval) = 0;
```

`pval`

The name you are assigning to the design.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveAttachment

This method removes an attachment from the design.

```
virtual HRESULT RemoveAttachment(
    const CLSID *attachmentCLSID) = 0;
```

`*attachmentCLSID`

A pointer to the attachment you want to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "AddAttachment" on page 542

## RemoveTargetFromDesign

This method removes a target from a design

```
virtual HRESULT RemoveTargetFromDesign(
    ICodeWarriorTarget *target) = 0;
```

`*target`

A pointer to the target you want to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorDesignAttachment

This interface provides methods to detect whether certain events performed on a design have completed.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| DesignClosing | RemovingAttachment |
| DesignInitialized | |

## DesignClosing

This method closes the design.

```
virtual HRESULT DesignClosing(
    ICodeWarriorDesign *__MIDL_0015) = 0;
```

`__MIDL_0015`

A pointer to the design to be closed.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## DesignInitialized

This method prepares a design for use.

```
virtual HRESULT DesignInitialized(
    ICodeWarriorDesign *__MIDL_0014) = 0;
```

`__MIDL_0014`

A pointer to the design you want to initialize.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemovingAttachment

Use this method to determine if the CodeWarrior IDE has finished removing an attachment from the design.

```
virtual HRESULT RemovingAttachment(
    ICodeWarriorDesign *__MIDL_0016) = 0;
```

`__MIDL_0016`

A pointer to the attachment being removed.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorDesignEvents

Use this interface to determine if certain events have taken place while working with a design.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| RemovingTarget | TargetAdded |

## RemovingTarget

This method detects whether the CodeWarrior IDE has finished removing a target. (How does one know the target has been removed?}

```
virtual HRESULT RemovingTarget(
    ICodeWarriorTarget *target) = 0;
```

`target`

A pointer to the target being removed.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## TargetAdded

This method detects whether the CodeWarrior IDE has finished adding a target to the design. (How does one know the target has been added?}

```
virtual HRESULT TargetAdded(
    ICodeWarriorTarget *target) = 0;
```

`target`

A pointer to the target being added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Data Types

### ECodeWarriorLinkFlags

This enumeration is used to define linker flags. It is used in the `AddFile2`, AddFile2ByFileSpec, and FindAndAddFile2 methods of the `ICodeWarriorDesign` interface.

**Table 15.1 ECodeWarriorLinkFlags Enumeration**

| Constant | Description |
|---|---|
| cwNoLinkFlags | Set no link flags on this file |
| cwGenerateSymbols | Instruct the linker to only generate symbols |
| cwMergeLibarary | Instruct the linker to link to libraries when building. |
| cwWeakImport | Instruct the linker to use the Weak Import option. This option only works on the Mac OS |
| cwInitBefore | Instruct the linker to use shared libraries. This flag is only valid if the currently mapped compiler support import. This option works only on the Power PC |

# 16

# Dialog Services

This chapter shows how to use the Dialog Services API to manage dialog operations in the CodeWarrior IDE.

This chapter contains the following sections:

- Dialog Services API Overview
- Using the Dialog Services API
- Dialog Services API Reference

## Dialog Services API Overview

The Dialog Services API is a set of interfaces that allows a plug-in to create and manipulate dialog boxes in the CodeWarrior IDE.

## Using the Dialog Services API

This section covers these topics:

- Registering the Command
- Implementing the Command

### Registering the Command

The following code snippet, from PluginMain.cpp, shows how to register a dialog command:

```
/*
 * RegisterCommands
 *
 * Creates a new command group, adds two commands to it, and
 * tells the IDE to display the group in the menu bar.
 */
```

```
static void RegisterCommands(IServiceProvider *servProv)
{
  ICodeWarriorCommandRegistry *cmdRegistry;
  servProv->QueryService(SID_SCodeWarriorCommandRegistry,
    IID_ICodeWarriorCommandRegistry, &cmdRegistry);
  if(cmdRegistry)
  {
    // We don't need the window manager to register commands,
    // but the command handler we're installing will need a
    // reference to it in order to create windows...
    ICodeWarriorWindowManager *windowMgr = NULL;
    servProv->QueryService(SID_SCodeWarriorWindowManager,
      IID_ICodeWarriorWindowManager, &windowMgr);

    ICodeWarriorCommandHandler *cmdHandler = new
      ExampleCommandHandler(windowMgr, servProv);
    BSTR bstr = SysAllocString(OLESTR("Example plugin"));
    cmdRegistry->CreateNewCommandGroup(kToolbarTestPluginID,
      cmdGroup_TestPlugin, bstr, cmdGroup_Nothing);

    CWToolbarIconInfo tbIconInfo =
      GetToolbarIcon(iconIndex_NewPluginWindow);

    // register test dialog services commands
    SysReAllocString(&bstr, OLESTR("Test Info Dialog"));
    cmdInfo.pluginID = kToolbarTestPluginID;
    cmdInfo.commandID = cmd_TestInfoDialog;
    cmdInfo.commandGroupID = cmdGroup_TestPlugin;
    cmdInfo.commandName = bstr;
    cmdInfo.toolbarIcon = tbIconInfo;
    cmdInfo.visibleInMenu = true;
    cmdInfo.itemType = CWCommandItemType_Command;
    cmdInfo.extraInfo.commandHandler = cmdHandler;
    cmdRegistry->RegisterCommand(cmdInfo, cmd_Nothing);

    SysFreeString(bstr);
    FreeToolbarIcon(tbIconInfo);

    cmdRegistry->Release();
  }
```

```
  ICodeWarriorMenuManager *menuMgr;
  servProv->QueryService(SID_SCodeWarriorMenuManager,
    IID_ICodeWarriorMenuManager, &menuMgr);
  if(menuMgr)
  {
    menuMgr->ShowCommandGroupMenu(kToolbarTestPluginID,
      cmdGroup_TestPlugin, true);
    menuMgr->Release();
  }
}
```

## Implementing the Command

The following code snippet, from ExampleCommandHandler.cpp, shows how to implement a dialog command:

```
/*
 *ExecuteCommand
 */

HRESULT STDMETHODCALLTYPE ExampleCommandHandler::ExecuteCommand(
  CWCommandID inCommandNumber,
  ICodeWarriorCommandHandler *inDefaultHandler)
{
  HRESULT result = S_OK;

  switch(inCommandNumber)
  {
    case cmd_TestInfoDialog:
    case cmd_TestWarningDialog:
    case cmd_TestErrorDialog:
    {
      if (mServProv)
      {
        ICodeWarriorDialogServices* dlgSrvc = NULL;
        result =
          mServProv->QueryService(IID_ICodeWarriorDialogServices,
          IID_ICodeWarriorDialogServices, (void**) &dlgSrvc);
        if (SUCCEEDED(result))
        {
          short dialogType = 0;
```

```
          BSTR bstr;
          switch(inCommandNumber)
          {
            case cmd_TestInfoDialog:
              dialogType = cwInfoDialog;
              bstr = SysAllocString(OLESTR("Info OKCancelDialog
                - cwInfoDialog"));
              break;
            case cmd_TestWarningDialog:
              dialogType = cwWarningDialog;
             bstr = SysAllocString(OLESTR("Warning OKCancelDialog
                - cwWarningDialog"));
              break;
            case cmd_TestErrorDialog:
              dialogType = cwErrorDialog;
             bstr = SysAllocString(OLESTR("Error OKCancelDialog -
                cwErrorDialog"));
              break;
          };
          result = dlgSrvc->OKCancelDialog(dialogType, bstr);
          SysFreeString(bstr);

          dlgSrvc->Release();
        }
      }
      break;
    }

    default:
      if(inDefaultHandler)
       result = inDefaultHandler->ExecuteCommand(inCommandNumber,
          inDefaultHandler);
      break;
  }

  return result;
}
```

# Dialog Services API Reference

This section describes the functions contained in the following interface:

- `ICodeWarriorDialogServices`

The ICodeWarriorDialogServices interface uses the following data types:

- `Dialog Box Types`
- `SaveDontSaveDialog Result Types`

## ICodeWarriorDialogServices

This interface allows plug-ins to present dialogs to the user and request feedback from the user.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| `NewItemDialog` | `ReportErrorFromErrorInfo` |
| `OKCancelDialog` | `SaveDontSaveDialog` |
| `OKDialog` | `SetPluginDialogCommandHandler` |
| `PostModalDialog` | `UpdatePluginDialogMenus` |
| `PreModalDialog` | |

## NewItemDialog

This method shows the user a new item dialog.

```
virtual HRESULT NewItemDialog(
    BSTR pageToSelect,
    BSTR itemToSelect) = 0;
```

`pageToSelect`

If the dialog has multiple pages, the page to show to the user. This parameter is optional

`itemToSelect`

The item on the selected page to highlight when the dialog appears to the user. If the dialog has multiple pages, the items is relative to the page. This parameter is optional

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## OKCancelDialog

This method shows the user a dialog box with an **OK** button and a **Cancel** button.

```
virtual HRESULT OKCancelDialog(
    short dialogType,
    BSTR message) = 0;
```

`dialogType`

A value within the range defined by the Dialog Box Types enumeration, indicating the type of dialog box to present to the end user.

`message`

The message you want to display in this dialog.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Dialog Box Types" on page 569

## OKDialog

This method shows the user a dialog with an **OK** button.

```
virtual HRESULT OKDialog(
    short dialogType,
    BSTR message) = 0;
```

`dialogType`

A value within the range defined by the Dialog Box Types enumeration, indicating the type of dialog box to present to the end user.

`message`

The message you want to display in this dialog.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Dialog Box Types" on page 569

## PostModalDialog

This method informs the CodeWarrior IDE that you are done with a modal dialog.

```
PostModalDialog(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## PreModalDialog

This method informs the CodeWarrior IDE that you are about to display a modal dialog. You can then use

SetPluginDialogCommandHandler and UpdatePluginDialogMenus to update the menu while the modal dialog has focus.

```
virtual HRESULT PreModalDialog(
    BOOL fActivateIDE) = 0;
```

`fActivateIDE`

`true` to bring the IDE to the front or `false` to leave it behind other applications (if any).

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "SetPluginDialogCommandHandler" on page 567

"UpdatePluginDialogMenus" on page 568

## ReportErrorFromErrorInfo

This method shows the user an error message in a dialog.

```
virtual HRESULT ReportErrorFromErrorInfo(
    ICodeWarriorErrorInfo *info) = 0;
```

`info`

A pointer to the `ICodeWarriorErrorInfo` interface containing the error message to show.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorErrorInfo" on page 590

## SaveDontSaveDialog

This method shows a message to the user in a dialog with a **Save** button and a **Don't Save** button..

```
virtual HRESULT SaveDontSaveDialog(
    BSTR objectType,
    BSTR objectName,
    long *result) = 0;
```

`objectType`

The type of object being saved. If the object is a file, you may pass NULL for this parameter.

`objectName`

The default name of the object being saved. This name appears in the edit field of the dialog box, and may be edited by the user before saving.

`result`

On return, this parameter contains an integer indicating which option (Save, Don't Save, or Cancel) the user chose.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "SaveDontSaveDialog Result Types" on page 569

## SetPluginDialogCommandHandler

This method sets up a command handler to process menu events while a plugin is showing a modal dialog. Call this method after PreModalDialog(). After using this method, you can use UpdatePluginDialogMenus to update the menu bar while the modal dialog has focus.

```
virtual HRESULT SetPluginDialogCommandHandler(
    ICodeWarriorCommandHandler* inCommandHandler
```

```
) = 0;
```

`inCommandHandler`

A pointer to the command handler to use while a modal dialog has the focus.

See Also "PreModalDialog" on page 565

"UpdatePluginDialogMenus" on page 568

## UpdatePluginDialogMenus

This method updates the menu bar while a modal dialog has the focus. Once a plugin dialog command handler has been set, call this method in your event loop to update the menus. Use this method after calling SetPluginDialogCommandHandler.

```
virtual HRESULT UpdatePluginDialogMenus() = 0;
```

See Also "PreModalDialog" on page 565

"SetPluginDialogCommandHandler" on page 567

## Dialog Services Data Types

The following data types are used with the Dialog Services API:

- Dialog Box Types

### Dialog Box Types

These constants are used to describe the types of dialogs available for use with the `OKDialog` and `OKCancelDialog` methods of the `ICodeWarriorDialogServices` interface.

**Table 16.1 Dialog Box Types**

| Constant | Icon | Description |
|---|---|---|
| `cwInfoDialog` |  | Used to present information to the end user |
| `cwWarningDialog` |  | Used to present a caution or warning to the end user |
| `cwErrorDialog` |  | Used to present an error condition to the end user |

### SaveDontSaveDialog Result Types

The SaveDontSaveDialog method of the `ICodeWarriorDialogServices interface returns one of three possible values, depending on the user's choice:`

- `cwSaveResponse_Save`
- `cwSaveResponse_DontSave`
- `cwSaveResponse_Cancel`

17

# Documents

This chapter shows how to use the Documents API to create and manage documents in the CodeWarrior IDE.

This chapter contains the following sections:

- Documents API Overview
- Documents API Reference

## Documents API Overview

The Documents API is a set of interfaces that allows a plug-in to create and manipulate components in the CodeWarrior IDE.

## Documents API Reference

This section describes the functions contained in the following interfaces:

- ICodeWarriorDocument
- ICodeWarriorProjectDocument
- ICodeWarriorTextDocument

# ICodeWarriorDocument

This interface is used to get information about and control CodeWarrior documents and their windows.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface has the following properties:

| | |
|---|---|
| Activate | get_Width |
| Close | get_XPos |
| get_ActiveDocument | get_YPos |
| get_Dirty | put_Height |
| get_FileSpec | put_Visible |
| get_Height | put_Width |
| get_Name | put_XPos |
| get_ReadOnly | put_YPos |
| get_Visible | Save |

## Activate

This method activates a document. Activating a document makes the document the frontmost document.

```
virtual HRESULT Activate(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Close

This method closes the document window and optionally saves the document.

```
virtual HRESULT Close(
    VARIANT_BOOL bSaveChanges) = 0;
```

`bSaveChanges`

A `VARIANT_BOOL` containing `true` to save the document before closing or `false` to close the document without saving.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_ActiveDocument

This method gets whether a document is the active document.

```
virtual HRESULT get_ActiveDocument(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return it contains `true` if the document is active or `false` if the document is inactive.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Dirty

This method gets the dirty status (whether or not it has been modified since the last save) of a document.

```
virtual HRESULT get_Dirty(
    VARIANT_BOOL *pval) = 0;
```

`pval`

Supply a pointer to the `VARIANT_BOOL` interface. Upon return it contains `true` if the document is dirty (needs to be written to disk), and `false` if the document is not dirty.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FileSpec

This method gets the file specification for a document.

```
virtual HRESULT get_FileSpec(
    IFileSpec **pval) = 0;
```

`pval`

On return, this parametercontains the address of a pointer to the file specification for the document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Height

This method gets the height of a document window.

```
virtual HRESULT get_Height(
    int *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to the current height (in pixels) of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of a document.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to the name of the document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_ReadOnly

This method gets the read-only status of a document.

```
virtual HRESULT get_ReadOnly(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return it contains `true` if the document is read only or `false` if the document is modifiable.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Visible

This method gets the visible status of a document window.

```
virtual HRESULT get_Visible(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a boolean indicating `true` if the document window is visible or `false` if the document window is not visible.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Width

This method gets the width of a document window.

```
virtual HRESULT get_Width(
    int *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to an integer indicating the current width (in pixels) of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_XPos

This method gets the horizontal position of a document window.

```
virtual HRESULT get_XPos(
    int *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to an integer indicating the current horizontal coordinate of the top-left corner of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_YPos

This method gets the vertical position of a document window.

```
virtual HRESULT get_YPos(
    int *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to an integer indicating the current verticle coordinate of the top-left corner of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Height

This method sets the height of a document window.

```
virtual HRESULT put_Height(
    int val) = 0;
```

`val`

An integer set to the new height (in pixels) of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Visible

This method sets the visible state of a document window.

```
virtual HRESULT put_Visible(
    VARIANT_BOOL val) = 0;
```

`val`

A `VARIANT_BOOL` set to `true` if you want the document window made visible or `false` if you want the document window hidden.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Width

This method sets the width of a document window.

```
virtual HRESULT put_Width(
    int val) = 0;
```

`val`

An integer set to the new width (in pixels) of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_XPos

This method sets the horizontal position of a document window.

```
virtual HRESULT put_XPos(
    int val) = 0;
```

`val`

An integer variable set to the new horizontal coordinate of the top-left corner of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_YPos

This method sets the verticle position of a document window.

```
virtual HRESULT put_YPos(
    int val) = 0;
```

`val`

An integer variable set to the new verticle coordinate of the top-left corner of the document window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Save

This method saves a document.

```
virtual HRESULT Save(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorProjectDocument

This interface is used to get information about and control CodeWarrior project documents.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| CollapseGroup | SelectFiles |
| ExpandGroup | SelectedFiles |
| get_Project | |

## CollapseGroup

This method collapses a group in a project window.

```
virtual HRESULT CollapseGroup(
    BSTR groupName) = 0;
```

`groupName`

The name of the group to collapse.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ExpandGroup

This method expands a group in a project window.

```
virtual HRESULT ExpandGroup(
    BSTR groupName) = 0;
```

`groupName`

The name of the group to expand.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Project

This method gets the project object related to this document.

```
virtual HRESULT get_Project(
    ICodeWarriorProject **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer to the project object related to this document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## SelectFiles

This method selects or deselects one or more files in a project.

```
virtual HRESULT SelectFiles(
    ICodeWarriorProjectFileCollection
      *projectFiles,
    VARIANT_BOOL select) = 0;
```

`projectFiles`

A pointer to the `ICodeWarriorProjectFileCollection` interface containing the list of project files to select.

`select`

Set this parameter to `true` if you want to select the files or `false` if you want to deselect the files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## SelectedFiles

This method gets a list of currently selected files in a project.

```
virtual HRESULT SelectedFiles(
    ICodeWarriorProjectFileCollection
    **projectFiles) = 0;
```

`projectFiles`

Supply the address of a pointer to the `ICodeWarriorProjectFileCollection` interface. Upon return it contains a list of the currently selected project files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## ICodeWarriorTextDocument

This interface is used to get information about and control CodeWarrior text documents.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| | SaveACopyAs |
| | SaveACopyAsByFileSpec |
| | SaveAs |
| | SaveAsByFileSpec |
| get_TextEngine | ScrollToSelection |

## get_Project

This method gets the project object associated with this text file.

```
virtual HRESULT get_Project(
    ICodeWarriorProject** project) = 0;
```

`project`

On return, this parameter contains a pointer to the address of the project object associated with this text file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Target

This method gets the target object associated with this text file.

```
virtual HRESULT get_Target(
    ICodeWarriorTarget** target) = 0;
```

`target`

On return, this parameter contains a pointer to the address of the target object associated with this text file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_ProjectFile

This method gets the project file object associated with this text file.

```
virtual HRESULT get_ProjectFile(
    ICodeWarriorProjectFile** projectFile) = 0;
```

`projectFile`

On return, this parameter contains a pointer to the address of the project file object associated with this text file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_TargetFile

This method gets the target file object associated with this text file.

```
virtual HRESULT get_TargetFile(
    ICodeWarriorTargetFile** targetFile) = 0;
```

`targetFile`

On return, this parameter contains a pointer to the address of the target file object associated with this text file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_TextEngine

This method gets the text engine object of a CodeWarrior text document.

```
virtual HRESULT get_TextEngine(
    ICodeWarriorTextEngine **pval) = 0;
```

`pval`

On return, this parameter contains the address of a pointer tothe text engine object for this text document.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTextEngine" on page 768

## SaveACopyAs

This method saves a text file using the **Save A Copy As** dialog box, by specifying the full path of the file.

```
virtual HRESULT SaveACopyAs(
    BSTR val) = 0;
```

`val`

The full path of the file being saved.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SaveACopyAsByFileSpec

This method saves a text file using the **Save A Copy As** dialog box, by specifying the file specification record for the file.

```
virtual HRESULT SaveACopyAsByFileSpec(
    IFileSpec *fileSpec) = 0;
```

`fileSpec`

A pointer to the `IFileSpec` interface containing the file specification for the file being saved.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SaveAs

This method saves a text file using the **Save As** dialog box, by specifying the full path of the file.

```
virtual HRESULT SaveAs(
    BSTR val) = 0;
```

`val`

The full path of the file being saved.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SaveAsByFileSpec

This method saves a text file using the **Save As** dialog box, by specifying the file specification record for the file.

```
virtual HRESULT SaveAsByFileSpec(
    IFileSpec *fileSpec) = 0;
```

`fileSpec`

A pointer to the `IFileSpec` interface containing the file specification for the file being saved.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ScrollToSelection

This method makes the currently selected text appear in the text document's editor window.

```
virtual HRESULT ScrollToSelection(void) = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

**Documents**
*ScrollToSelection*

# 18

# Error Info

This chapter shows how to use the Error Info API to manage and work with error information.

This chapter contains the following sections:

- Error Info API Overview
- Error Info API Reference

## Error Info API Overview

The Error Info API is a set of interfaces that allows a plug-in to work with error information in the CodeWarrior IDE.

## Error Info API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorErrorInfo`

# ICodeWarriorErrorInfo

### Inherited Interfaces

- `IUnknown`

### Methods

This interface has the following methods:

| | |
|---|---|
| `get_Action` | `put_HelpContext` |
| `get_DWORDErr` | `put_HelpFile` |
| `get_HRESULT` | `put_HRESULT` |
| `get_MacOSErr` | `put_MacOSErr` |
| `get_MWErr` | `put_MWErr` |
| `get_Reason` | `put_Reason` |
| `put_Action` | `put_Source` |
| `put_DWORDErr` | |

## get_Action

This method gets the action string associated with the most recent error.

```
virtual HRESULT get_Action(BSTR *actionStr) = 0;
```

`actionStr`

On return, this parameter contains the action string.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_DWORDErr

This method gets the error number of the most recent error.

```
virtual HRESULT get_DWORDErr(DWORD *err) = 0;
```

`err`

On return, this parameter contains a pointer to a DWORD that contains the error number.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_HRESULT

This method gets the HRESULT value for the most recent operation.

```
virtual HRESULT get_HRESULT(HRESULT *err) = 0;
```

`err`

On return, this parameter contains a pointer to an HRESULT that contains the HRESULT value for the most recent operation (0 for no error and other values for errors).

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_MWErr

This method gets the MWErr number for the most recent error.

```
virtual HRESULT get_MWErr(long *err) = 0;
```

`err`

On return, this parameter contains a pointer to a long integer

containing the error number

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_MacOSErr

This method gets the error number of the most recent error on a Mac OS.

```
virtual HRESULT get_MacOSErr(short *err) = 0;
```

`err`

On return, this parameter contains a pointer to a short that holds the error number.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Reason

This method gets a string that contains an explanation of what caused the most recent error.

```
virtual HRESULT get_Reason(BSTR *actionStr) = 0;
```

`actionStr`

On return, this parameter contains a string containing the cause of the error.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Action

This method lets you set the action string for an error message.

```
virtual HRESULT put_Action(BSTR actionStr) = 0;
```

`actionStr`

A string telling the user what action to take to clear the error.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_DWORDErr

This method lets you set the error number for an error.

```
virtual HRESULT put_DWORDErr(DWORD err) = 0;
```

`err`

The number you want to assign to the error.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_HRESULT

This method lets you set the HRESULT value for an error.

```
virtual HRESULT put_HRESULT(HRESULT err) = 0;
```

`err`

The HRESULT value you want to assign to an error.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_HelpContext

This method lets you put the help system into a certain state before displaying a help file. Refer to the operating system documentation for available states for the help system.

```
virtual HRESULT put_HelpContext(
    DWORD helpContext) = 0;
```

`helpContext`

A number indicating the state the help system should be in

when you display a help file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_HelpFile

This method lets you show the user a help file. You can use put_HelpContext to put the help system into a particular state before you call the help file.

```
virtual HRESULT put_HelpFile(BSTR fileName) = 0;
```

`fileName`

The file name (and path, if necessary) of the help system to show the user.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_MWErr

This method lets you set the MWErr value for an error message.

```
virtual HRESULT put_MWErr(long err) = 0;
```

`err`

A number representing an MWErr state.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_MacOSErr

This method lets you set the error number to a value recognized by the Mac OS.

```
virtual HRESULT put_MacOSErr(short err) = 0;
```

`err`

The Mac OS error number to use.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Reason

This method lets you set the reason string for an error message.

```
virtual HRESULT put_Reason(BSTR actionStr) = 0;
```

`actionStr`

A string indicating the reasn the error occured.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Source

This method lets you set the source of the error message.

```
virtual HRESULT put_Source(BSTR sourceStr) = 0;
```

`sourceStr`

A string stating the source of the error.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

**Error Info**
*put_Source*

# 19

# Files

This chapter describes the functions contained in the following interface: IFileSpec

## IFileSpec

This interface allows you to work with file specifications.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| `Clone` | `get_Name` |
| `Copy` | `put_FullPath` |
| `get_FullPath` | `put_Name` |

## Clone

This method creates a duplicate copy of a file specification pointing to the same file as the original.

```
virtual HRESULT Clone(IFileSpec **pval);
```

`pval`

On return, this parameter contains the address of a pointer to an `IFileSpec` object pointing to the same file as the original file specification.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Copy

This method creates a duplicate copy of a file, by specifying the name and location of the new file.

```
virtual HRESULT Copy(IFileSpec *inSpec);
```

`inSpec`

A pointer to the `IFileSpec` interface containing a file specification with the name and the location of the new file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FullPath

This method gets the full path of a file specification.

```
virtual HRESULT get_FullPath(BSTR *path);
```

`pval`

On return, this parameter contains the full path of the file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of a file specification.

```
virtual HRESULT get_Name(BSTR *pval);
```

`pval`

On return, this parametercontains the name of the file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_FullPath

This method sets the path of a file specification.

```
virtual HRESULT put_FullPath(BSTR path);
```

`pval`

The new path for the file specification. The path you supply does not need to point to an existing file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_Name

This method sets the name of a file specification.

```
virtual HRESULT put_Name(BSTR pval);
```

`pval`

The new name of the file. The name you supply does not have to point to an existing file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

**Files**
*put_Name*

# 20

# Menus

This chapter shows how to use the Menus API to create and manage menus in the CodeWarrior IDE.

This chapter contains the following sections:

- Menus API Overview
- Using the Menus API
- Menus API Reference

## Menus API Overview

The Menus API is a set of interfaces that allows a plug-in to create and manipulate menus in the CodeWarrior IDE. The API uses the standard COM interface.

Menu can either be created at IDE initialization or during run time. Menus should be created at IDE launch via the `ICodeWarriorMenuManager` interface while dynamic menus should be created with the `ICodeWarriorMenu` interface.

Run time manipulation of menus (`ICodeWarriorMenu` and `ICodeWarriorMenuHandler`) is not yet implemented .

## Using the Menus API

The header file, `CodeWarriorMenuManager.h` defines all the interfaces for the menu API. To create a menu at launch you will need to create a command handler. See `ICodeWarriorCommandRegistry` for more information on creating a command group at IDE launch.

An example of creating a menu at launch is shown in Listing 20.1.

**Listing 20.1 Creating a menu at launch**

```
ICodeWarriorMenuManager *menuMgr;

servProv->QueryService(SID_SCodeWarriorMenuManager,
    IID_ICodeWarriorMenuManager, &menuMgr);
if(menuMgr)
{
  menuMgr->ShowCommandGroupMenu(kToolbarTestPluginID,
          cmdGroup_TestPlugin, true);
  menuMgr->Release();
}
```

# Menus API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorMenu`
- `ICodeWarriorMenuHandler`
- `ICodeWarriorMenuManager`

## ICodeWarriorMenu

This interface works with the entire menu bar, a single menu in the menu bar, or a single menu item. The methods in this interface allow you to manage menus and menu items at run time. The interface grants no access to key bindings, toolbars, or submenus.

### Inherited Interfaces

- `IUnknown`

**NOTE** ICodeWarriorMenu methods work only with ICodeWarriorMenu interfaces. There is no mechanism for adding or removing an item from a built-in menu at runtime. You can add items to existing menus when CodeWarrior launches using the command registry mechanism. See “Commands API Overview” on page 493 for more information on using the command registry mechanism for creating menus.

### Methods

This interface provides the following methods:

| | |
|---|---|
| `InsertItem` | `SetItemChecked` |
| `RemoveAllItems` | `SetItemEnabled` |
| `RemoveItem` | `SetItemName` |

## InsertItem

This method inserts a menu item on a menu.

```
virtual HRESULT InsertItem(
    BSTR inItemName,
    LONG inBeforeIndex);
```

`inItemName`

The name of the item you wish to appear in the menu.

`inBeforeIndex`

The location of the menu item you wish to insert. The new menu is placed before the value specified in `inBeforeIndex`.

Returns `S_OK if this method call succeeded or an appropriate error if it failed.`

## RemoveAllItems

This method removes all items from a menu.

```
virtual HRESULT RemoveAllItems(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveItem

This method removes a single item from a menu.

```
virtual HRESULT RemoveItem(LONG inItemIndex);
```

`inItemIndex`

Specifies the item index number for the menu item you want to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetItemChecked

This method shows or hides a checkmark next to a menu item.

```
virtual HRESULT SetItemChecked(
    LONG inItemIndex,
    BOOL inNewState);
```

`inItemIndex`

The menu item that is selected.

`inNewState`

Set this paramter to `true` for a check mark next to the menu item or `false` for no checkmark.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetItemEnabled

Enables or diables a specified menu item.

```
virtual HRESULT SetItemEnabled(
    LONG inItemIndex,
    BOOL inNewState);
```

`inItemIndex`

This is a user-defined command ID which is assigned to this menu item when it is created. The command ID must already be registered with the IDE via `RegisterCommand`.

`inNewState`

Specifies whether the menu item is enabled or not. Set `inNewState` to `true` to enable the specified menu item or `false` to disable the menu item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also `RegisterCommand`

## SetItemName

This method changes the name for a menu item.

```
virtual HRESULT SetItemName(
    LONG inItemIndex,
    BSTR inNewName);
```

`inItemIndex`

Specifies the index for the menu item whose name you want to change.

`inNewName`

The name of the menu item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorMenuHandler

This interface handles events and status for menu item plug-ins. To use it, you must create a COM object that inherits from this interface.

Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| `HandleMenuSelection` | `UpdateMenuStatus` |

## HandleMenuSelection

The IDE calls this method to let the plug-in know to perform the action associated with the selected menu item.

```
virtual HRESULT HandleMenuSelection(
    long inItemIndex,
    BSTR inItemName);
```

`inItemIndex`

The item number of the menu item whose event you want to dispatch.

`inItemName`

The name of the menu item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## UpdateMenuStatus

This method updates a menu item.

```
virtual HRESULT UpdateMenuStatus(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorMenuManager

This interface allows you to obtain the interface for the CodeWarrior menu bar.

Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| `CreateTemporaryMenu` | `SetMenusEnabledState` |
| `GetMenusEnabledState` | `ShowCommandGroupMenu` |

## CreateTemporaryMenu

This method creates a temporary menu.

```
virtual HRESULT CreateTemporaryMenu(
    BSTR inMenuTitle,
    ICodeWarriorMenuHandler *inHandler,
    ICodeWarriorMenu *&outMenuInterface) = 0;
```

`inMenuTitle`

The title of the menu you want to create.

`inHandler`

A pointer to the `ICodeWarriorMenuHandler` object you are refering to.

`outMenuInterface`

A reference to a pointer of the `ICodeWarriorMenu` object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also `"ICodeWarriorMenuHandler" on page 610`

`"ICodeWarriorMenu" on page 605`

## GetMenusEnabledState

This method gets whether the menu bar is enabled or disabled.

```
virtual BOOL GetMenusEnabledState() = 0;
```

Returns `true` if the menu bar is enabled or `false` if not.

## SetMenusEnabledState

This method enables or disables the menu bar.

```
virtual HRESULT SetMenusEnabledState(
    BOOL inEnableMenus) = 0;
```

`inEnabledMenus`

Set this parameter to `true` to enable the menu bar or `false` to disable it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ShowCommandGroupMenu

This method shows the menu you have created through the methods in the ICodeWarriorMenu interface. To make the menu appear, you first have to register it, by calling the `IServiceProvider::QueryInterface()` method with the ICodeWarriorMenuManager object.

```
virtual HRESULT ShowCommandGroupMenu(
    CWPluginID inPluginID,
    CWCommandGroupID inCommandGroup,
    BOOL inShow) = 0;
```

`inPluginID`

The ID number of the plug-in you are creating.

`inCommandGroup`

The menu group in which your menu items are to receive commands. You must create a command group first.

`inShow`

Set this parameter to `true` to show the menu or `false` to hide the menu item referred to in the `inCommandGroup` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CreateNewCommandGroup" on page 502

# 21

# Messages

This chapter shows how to use the Messages API to create and manage messages in the CodeWarrior IDE.

This chapter contains the following sections:

- Messages API Overview
- Messages API Reference

## Messages API Overview

The Messages API is a set of interfaces that allows a plug-in to create and manipulate access paths in the CodeWarrior IDE.

## Messages API Reference

This section describes the methods contained in the following interfaces:

- `ICodeWarriorBuildMessages`
- `ICodeWarriorMessage`

The following data type is used with these interfaces:

- `EMsgType`

## ICodeWarriorBuildMessages

This interface allows you to examine errors generated by the CodeWarrior IDE while it builds a project.

### Inherited Interfaces

- `IUnknown`

### Properties

This interface has the following properties:

| | |
|---|---|
| `get_DefinitionCount` | `get_InformationCount` |
| `get_Definitions` | `get_Informations` |
| `get_ErrorCount` | `get_WarningCount` |
| `get_Errors` | `get_Warnings` |

## get_DefinitionCount

This method gets the number of definitions generated during the last build.

```
virtual HRESULT get_DefinitionCount(
    long *count) = 0;
```

`count`

On return, this parameter contains a pointer to the number of definitions generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Definitions

This method gets a collection of definitions generated during the last build.

```
virtual HRESULT get_Definitions(
    ICodeWarriorMessageCollection **errors) = 0;
```

`errors`

On return, this parameter contains a collection of all definitions generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_ErrorCount

Use this method to obtain the number of errors generated during the last build.

```
virtual HRESULT get_ErrorCount(
    long *count) = 0;
```

`count`

Supply a pointer to a `long`. Upon return it contais the number of errors generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Errors

This method gets a collection of errors generated during the last build.

```
virtual HRESULT get_Errors(
    ICodeWarriorMessageCollection **errors) = 0;
```

`errors`

On return, this parameter contains the address of a pointer to a collection of all errors generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_InformationCount

This method gets the number of information items generated during the last build.

```
virtual HRESULT get_InformationCount(
    long *count) = 0;
```

`count`

Supply a pointer to a `long`. Upon return it contais the number of errors generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Informations

This method gets a collection of information items generated during the last build.

```
virtual HRESULT get_Informations(
    ICodeWarriorMessageCollection **info) = 0;
```

`info`

On return, this parameter contains the address of a pointer to a collection of all information items generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_WarningCount

This method gets the number of warnings generated during the last build.

```
virtual HRESULT get_WarningCount(long *count) = 0;
```

`count`

On return, this parameter contains a pointer to the number of warnings generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Warnings

Use this method to obtain a collection of warnings generated during the last build.

```
virtual HRESULT get_Warnings(
    ICodeWarriorMessageCollection **warnings) = 0;
```

`warnings`

On return, this parameter contains the address of a pointer to a collection of all warnings generated during the last build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## ICodeWarriorMessage

This interface defines a message used by the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Properties

This interface contains the following properties:

| | |
|---|---|
| `get_ErrorNumber` | `get_SourceLineNumber` |
| `get_FileSpec` | `get_SourceOffset` |
| `get_MessageLength` | `get_Target` |
| `get_MessageLineCount` | `get_TokenLength` |
| `get_MessageText` | `get_TokenOffset` |
| `get_ProjectFile` | `get_Type` |
| `get_SourceLength` | |

## get_ErrorNumber

This method gets the error number of the most recent error.

```
virtual HRESULT get_ErrorNumber(
    long *errorNumber) = 0;
```

`errorNumber`

On return, this parameter contains a pointer to a long integer that is the error number.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FileSpec

This method gets the file specification associated with the current message.

```
virtual HRESULT get_FileSpec(
    IFileSpec **fileSpec) = 0;
```

`fileSpec`

On return, this parameter contains the address of a pointer to the file specification of the message.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_MessageLength

This method gets the length of the current message, in bytes.

```
virtual HRESULT get_MessageLength(
    long *messageLength) = 0;
```

`messageLength`

On return, this parameter contains a pointer to a long integer that holds the length of the message, in bytes.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_MessageLineCount

This method gets the number of lines in the current message.

```
virtual HRESULT get_MessageLineCount(
    long *lineCount) = 0;
```

`lineCount`

On return, this parameter contains a pointer to a long integer that holds the number of lines in the message.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_MessageText

This message returns a string containing the text of the current message.

```
virtual HRESULT get_MessageText(
    BSTR *message) = 0;
```

`message`

A string containing the text of the current message.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_ProjectFile

This method gets the project file of the project associated with the current message.

```
virtual HRESULT get_ProjectFile(
    ICodeWarriorProjectFile **projectFile) = 0;
```

`projectFile`

On return, this parameter contains the address of a pointer to the project file object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## get_SourceLength

This method gets the length of the source file that the project was manipulating when it generated the current message.

```
virtual HRESULT get_SourceLength(
    long *length) = 0;
```

`length`

On return, this parameter contains a pointer to a long integer containing the length of the source file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SourceLineNumber

This method gets the line number within the source file where a problem (or other event) caused a message to be created.

```
virtual HRESULT get_SourceLineNumber(
    long *lineNumber) = 0;
```

`lineNumber`

On return, this parameter contains a pointer to a long integer containing the line number within the source file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SourceOffset

This method gets the number of characters, from the beginning of the source file, to the start of the keyword or phrase that caused the message to be created.

```
virtual HRESULT get_SourceOffset(
    long *offset) = 0;
```

`offset`

On return, this parameter contains a pointer to a long integer containing the number of characters, from the beginning of the line, to the start of the keyword in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Target

This method gets the keyword or phrase that caused the message to be created.

```
virtual HRESULT get_Target(
    ICodeWarriorTarget **target) = 0;
```

`target`

On return, this parameter contains the address of a pointer to the keyword or phrase that caused the message to be created.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## get_TokenLength

This method gets the length (the number of characters) of the keyword or phrase that caused the message to be created.

```
virtual HRESULT get_TokenLength(
    long *tokenLength) = 0;
```

`tokenLength`

On return, this parameter contains a pointer to a long integer containing the number of characters in the keyword or phrase that caused the message.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_TokenOffset

This method gets the number of characters, from the beginning of the line, to the start of the keyword or phrase that caused the message to be created.

```
virtual HRESULT get_TokenOffset(
    long *tokenOffset) = 0;
```

`tokenOffset`

On return, this parameter contains a pointer to a long integer with the number of characters from the beginning of the line to the keyword or phrase that caused a message to be created.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Type

This method gets the type of the message.

```
virtual HRESULT get_Type(
    EMsgType *type) = 0;
```

`type`

On return, this parameter contains a pointer to the message type.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EMsgType" on page 628

## Message Data Types

The following enumeration defines the message types used in the CodeWarrior Message API.

### EMsgType

This enumeration is used to define messages created by the build process. It is used by the get_Type method in the `ICodeWarriorMessage` interface.

| Constant | Description |
|---|---|
| typeNotDefined | This message type is undefined. |
| typeInformation | This message is an information item. |
| typeWarning | This message is a warning. |
| typeError | This message describes an error. |
| typeDefinition | This message is a definition. |

# 22

# Projects

This chapter shows how to use the Projects API to create and manage projects using plug-in interfaces.

This chapter contains the following sections:

- Projects API Overview
- Projects API Reference

## Projects API Overview

The Projects API is a set of interfaces that allows a plug-in to work with projects in the CodeWarrior IDE.

## Projects API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorProject`
- `ICodeWarriorProjectAssociation`
- `ICodeWarriorProjectEvents`
- `ICodeWarriorProjectFile`

These interfaces use the following data types:

- `EPluginDataStorageLoc`
- `ECodeWarriorCompileChoice`
- `ECodeWarriorRunMode`
- `ECodeWarriorBuildOptions`

## ICodeWarriorProject

This interface defines a CodeWarrior project.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface provides the following methods:

| | |
|---|---|
| `Build` | `get_FileSpec` |
| `BuildWithOptions` | `get_IsVisible` |
| `BuildAndWaitToComplete` | `get_Name` |
| `BuildAndWaitToCompleteWithOptions` | `GetNamedPluginData` |
| `Close` | `get_Targets` |
| `CloneTarget` | `get_VersionControl` |
| `CompileFilesWithChoice` | `RemoveDesign` |
| `CreateDesign` | `RemoveDesignByName` |
| `CreateTarget` | `RemoveFile` |
| `Export` | `RemoveNamedPluginData` |
| `ExportByFileSpec` | `RemoveObjectCode` |
| `FindDesign` | `RemoveObjectCodeWithOptions` |
| `FindFileByName` | `RemoveTarget` |
| `FindTarget` | `ReportMessage` |
| `get_Application` | `SetCurrentTarget` |
| `GetCurrentTarget` | `SetNamedPluginData` |
| `get_Designs` | `SynchronizeStatus` |

## Build

This method starts a build of the current project.

```
virtual HRESULT Build(
```

```
    long *cookie);
```

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns. S_OK if this method call succeeded or an appropriate error if it failed.

## BuildWithOptions

This method builds the current project with one of the options specified in the ECodeWarriorBuildOptions enumeration.

```
virtual HRESULT BuildWithOptions(
    ECodeWarriorBuildOptions options,
    ECodeWarriorRunMode runMode,
    long *cookie) = 0;
```

`options`

The build options to use with this build.

`runmode`

Whether to run the resulting program after building it and, if so, whether to run it in debug mode. The ECodeWarriorRunMode enumeration contains the costants that define this parameter.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBuildOptions" on page 662

"ECodeWarriorRunMode" on page 662

## BuildAndWaitToComplete

This method starts a build of the current project and has the IDE wait to gather all messages from the build process.

```
virtual HRESULT BuildAndWaitToComplete(
    ICodeWarriorBuildMessages **buildMessages);
```

`buildMessages`

On return, this parameter contains the address of a pointer to the messages created by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorBuildMessages" on page 616

## BuildAndWaitToCompleteWithOptions

This method builds the current project with one of the options specified in the ECodeWarriorBuildOptions enumeration. This method accumulates all the messages from the build process before returning.

```
virtual HRESULT BuildAndWaitToCompleteWithOptions(
    ECodeWarriorBuildOptions options,
    ICodeWarriorBuildMessages  **buildMessages
    ) = 0;
```

`options`

The build options to use with this build.

`buildMessages`

On return, this parameter contains the address of a pointer to the build messages created by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBuildOptions" on page 662

"ICodeWarriorBuildMessages" on page 616

## CloneTarget

This method puts a copy of a specified target into a new directory.

```
virtual HRESULT CloneTarget(
    ICodeWarriorTarget *srcTarget,
    ICodeWarriorProject *srcProject,
    BSTR inDestTargetName,
    VARIANT_BOOL fCopyFileList,
    VARIANT_BOOL fCopyTargetSettings,
    ICodeWarriorDesign *design,
    ICodeWarriorTarget **outTarget);
```

`srcTarget`

A pointer to the target to be cloned.

`srcProject`

A pointer to the project that contains the target to be cloned.

`inDestTargetName`

The new name for the cloned target.

`fCopyFileList`

Set this parameter to true to copy the source target's files or false to create a target with no files.

`fCopyTargetSettings`

Set this parameter to true to copy the source target's settings or false to create a target with default settings.

`design`

A pointer to the design associated with the source target.

`outTarget`

On return, this parameter contains the address of a pointer to the new target object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

"ICodeWarriorDesign" on page 542

## Close

This method closes the current project.

```
virtual HRESULT Close(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CompileFilesWithChoice

This method compiles a collection of project files with one of the options specified in the ECodeWarriorCompileChoice enumeration.

```
virtual HRESULT  CompileFilesWithChoice(
    ICodeWarriorProjectFileCollection *collection,
    ECodeWarriorCompileChoice compileChoice,
    long *cookie) = 0;
```

`collection`

A pointer to a collection of file projects to compile.

`compileChoice`

The kind of compilation the compiler should perform.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorCompileChoice" on page 662

"Using the Collections API" on page 487

## CreateDesign

This method creates a new design within the current project

```
virtual HRESULT CreateDesign(
    BSTR designName,
    ICodeWarriorDesign **design);
```

`designName`

The name for the new design.

`design`

On return, this parameter contains the address of a pointer to the new design object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDesign" on page 542

## CreateTarget

This method creates a new target within the current project.

```
virtual HRESULT CreateTarget(
    BSTR targetName,
    BSTR linkerName,
```

```
    ICodeWarriorDesign *design,
    ICodeWarriorTarget **target);
```

`targetName`

The name of the new target.

`linkerName`

The name of the linker to use to build the new target.

`design`

The name of the design to associate with the new target.

`target`

On return, this parameter contains the address of a pointer to the new target object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Export

This method exports the current project to a new location in the file system.

```
virtual HRESULT Export(BSTR filePath);
```

`filePath`

The full path of the new location.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ExportByFileSpec

This method exports the current project to a file specification.

```
virtual HRESULT ExportByFileSpec(
    IFileSpec *fileSpec);
```

`fileSpec`

The file specification to which to export the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## FindDesign

This method finds a particular design within the project, given the name of the design.

```
virtual HRESULT FindDesign(
    BSTR name,
    ICodeWarriorDesign **design);
```

`name`

The name of the design to find.

`design`

On return, this parameter contains the address of a pointer to the design specified by the `name` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDesign" on page 542

## FindFileByName

This method finds a file within the current project by finding the file's name.

```
virtual HRESULT FindFileByName(
    BSTR fileName,
    ICodeWarriorProjectFileCollection
      **projectFiles) = 0;
```

`fileName`

The name of the file to find.

`projectFiles`

On return, this parameter contains the address of a pointer to the file specified in the `name` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## FindTarget

This method finds a particular target within the current project.

```
virtual HRESULT FindTarget(
    BSTR name,
    ICodeWarriorTarget **target);
```

`name`

The name of the target to find.

`target`

On return, this parameter contains the address of a pointer to the target specified by the `name` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## get_Application

This method gets a pointer to the current pointer's application object.

```
virtual HRESULT get_Application(
    ICodeWarriorApp **val);
```

`val`

On return, this parameter contains the address of a pointer to the application object associated with the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorApp" on page 445

## GetCurrentTarget

This method gets a pointer to the current target within the current project.

```
virtual HRESULT GetCurrentTarget(
    ICodeWarriorTarget **target);
```

`target`

On return, this parameter contains the address of a pointer to the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## get_Designs

This method gets a collection containing the designs within the current project.

```
virtual HRESULT get_Designs(
    ICodeWarriorDesignCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection containing the designs within the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_FileSpec

This method gets the file specification of the current project.

```
virtual HRESULT get_FileSpec(
    IFileSpec **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the current project's file specification.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_IsVisible

This method gets whether the current project is visible in the IDE.

```
virtual HRESULT get_IsVisible(
    VARIANT_BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the project is visible or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of the current project.

```
virtual HRESULT get_Name(BSTR *pval);
```

`pval`

On return, this parameter contains the name of the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetNamedPluginData

This method gets plug-in data for the project, by name.

```
virtual HRESULT GetNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn,
    IStream **pluginData);
```

`resourceName`

The name of the plug-in from which to get the data.

`storeIn`

The location of the plug-in's data storage.

`pluginData`

On return, this parameter contains the address of a pointer to the plug-in data.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## get_Targets

This method gets a collection containing the targets within the current project.

```
virtual HRESULT get_Targets(
    ICodeWarriorTargetCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of targets.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_VersionControl

This method gets the version control object for the current project.

```
virtual HRESULT get_VersionControl(
    ICodeWarriorVersionControl **versionControl);
```

`versionControl`

On return, this parameter contains the address of a pointer to the current project's version control object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorVersionControl" on page 804

## RemoveDesign

This method removes a design (and possibly any designs nested within the specified design) from the project.

```
virtual HRESULT RemoveDesign(
    ICodeWarriorDesign *design,
    VARIANT_BOOL fDeleteContainedDesigns);
```

`design`

A pointer to the design to remove.

`fDeleteContainedDesigns`

**NOTE** `fDeleteContainedDesigns` indicates whether to delete targets, not designs.

Set this parameter to `true` to delete any targets contained within the design specified in the `design` parameter or `false` to leave the targets.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDesign" on page 542

## RemoveDesignByName

This method removes a design (and possibly any designs nested within the specified design) from the project, given a design name.

```
virtual HRESULT RemoveDesignByName(
    BSTR designName,
    VARIANT_BOOL fDeleteContainedTargets);
```

`designName`

The name of the design to remove.

`fDeleteContainedDesigns`

**NOTE** `fDeleteContainedDesigns` indicates whether to delete targets, not designs.

Set this parameter to `true` to delete any designs contained within the design specified in the design parameter or `false` to leave the targets.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveFile

This method removes a specified project file.

```
virtual HRESULT RemoveFile(
    ICodeWarriorProjectFile *projectFile)
```

`projectFile`

A pointer to the project file to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## RemoveNamedPluginData

This method removes plug-in data, given a name for the plug-in.

```
virtual HRESULT RemoveNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn);
```

`resourceName`

The name of the plug-in from which to remove data.

`storeIn`

The location of the data.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## RemoveObjectCode

This method removes the object code from a specified target.

```
virtual HRESULT RemoveObjectCode(
    ECodeWarriorWhichTargetOptions whichTarget,
    VARIANT_BOOL compact);
```

`whichTarget`

The target from which to remove object code.

`compact`

`true` to have the IDE destroy the associated data files (from the data folder) and re-create them or `false` to leave the data files as they are.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorWhichTargetOptions" on page 765

## RemoveObjectCodeWithOptions

This method removes the object code from a single target or all targets. It also lets you choose whether to remove the object code from all the subprojects within the current project and whether to delete any associated data files.

```
virtual HRESULT RemoveObjectCodeWithOptions(
```

```
    ECodeWarriorWhichTargetOptions whichTarget,
    VARIANT_BOOL recurseSubProject,
    VARIANT_BOOL deleteDataFiles) = 0;
```

`whichTarget`

A value with the range defined by the ECodeWarriorWhichTargetOptions enumeration that specifies whether to remove the object code from all targets or only the current target.

`recurseSubProject`

Set this parameter to `true` to remove the object code within all the subprojects that match the `whichTarget` parameter or `false` to leave the object code in the subprojects.

`deleteDataFiles`

Set this parameter to `true` to delete data files associated with the current project or `false` to retain the data files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorWhichTargetOptions" on page 765

## RemoveTarget

This method removes the specified target from the current project.

```
virtual HRESULT RemoveTarget(
    ICodeWarriorTarget *target);
```

`target`

A pointer to the target to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## ReportMessage

This method makes the specified message appear in the IDE's message window.

```
virtual HRESULT ReportMessage(
    EReportMsgType msgType,
    BSTR message);
```

`msgType`

The type of message (information, warning, etc.) to report.

`message`

The message to report.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Message Data Types" on page 628

## SetCurrentTarget

This method sets the current build target within the project.

```
virtual HRESULT SetCurrentTarget(
    BSTR targetName);
```

`targetName`

The name of the target to set as the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetNamedPluginData

This method sets the data for a plug-in.

```
virtual HRESULT SetNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn,
    IStream *pluginData);
```

`resourceName`

The name of the plug-in.

`storeIn`

The location in which to store the plug-in's data.

`pluginData`

The data to store in the plug-in.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## SynchronizeStatus

This method synchronizes the dates of the files stored in a version control system with the dates of the working files. For this method to work, you must have defined the VCS settings either globally or for the project.

```
virtual HRESULT SynchronizeStatus(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorProjectAssociation

This interface provides access to the project associated with the current project file.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_Project` | `put_Project` |

## get_Project

The IDE calls this method to get the project associated with the current project file.

```
virtual HRESULT get_Project(
    ICodeWarriorProject **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the project associated with the current project file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## put_Project

The IDE calls this method to associate a new project object with the current project file.

```
virtual HRESULT put_Project(
    ICodeWarriorProject *pval);
```

`pval`

A pointer to the project to associate with the current project file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

# ICodeWarriorProjectEvents

This interface provides a way to create events while a user works with a project.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `BuildEnded` | `QueryAboutToBuild` |
| `BuildStarted` | `QueryDeleteDesign` |
| `DeletingDesign` | `QueryUIClose` |
| `DesignCreated` | `RevertCompleted` |
| `ProjectClosing` | `VisibleChanged` |

## BuildEnded

This method indicates that a build has ended.

```
virtual HRESULT BuildEnded(
    ECodeWarriorCompileChoice choice,
    long buildID,
    VARIANT_BOOL fBuildSucceeded,
    ICodeWarriorBuildMessages *buildMessages);
```

`choice`

The kind of operation the compile performed.

`buildID`

The ID of the build.

`fBuildSucceeded`

Set this parameter to `true` if the build succeeded or `false` otherwise.

`buildMessages`

A pointer to the messages generated by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorCompileChoice" on page 662

"ICodeWarriorBuildMessages" on page 616

## BuildStarted

This method indicates that a build has started.

```
virtual HRESULT BuildStarted(
    ECodeWarriorCompileChoice choice,
    long buildID,
    ICodeWarriorTargetCollection *targetList);
```

`choice`

The kind of operation the compile performed.

`buildID`

The ID of the build.

`targetList`

A pointer to the collection of targets to build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorCompileChoice" on page 662

"Using the Collections API" on page 487

## DeletingDesign

This method indicates that a design is being deleted.

```
virtual HRESULT DeletingDesign(
    ICodeWarriorDesign *design);
```

`design`

A pointer to the design to delete.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## DesignCreated

This method indicates that a design is being created.

```
virtual HRESULT DesignCreated(
    ICodeWarriorDesign *design);
```

`design`

A pointer to the design to create.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## ProjectClosing

This method indicates that a project is being closed.

```
virtual HRESULT ProjectClosing(
    ICodeWarriorProject *project);
```

`project`

A pointer to the project to close.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## QueryAboutToBuild

The CodeWarrior IDE calls this method to inform the plug-in that a build is about to start.

```
virtual HRESULT QueryAboutToBuild(
    ECodeWarriorCompileChoice choice,
    long buildID,
    ICodeWarriorTargetCollection *targetList);
```

`choice`

The kind of operation the compile performed.

`buildID`

The ID of the build.

`targetList`

A pointer to the collection of targets to build.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorCompileChoice" on page 662

"Using the Collections API" on page 487

## QueryDeleteDesign

The CodeWarrior IDE calls this method to inform the plug-in that a design is about to be deleted.

```
virtual HRESULT QueryDeleteDesign(
    ICodeWarriorDesign *design);
```

`design`

A pointer to the design to delete.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## QueryUIClose

The CodeWarrior IDE calls this method to inform the plug-in that the IDE is about to close.

```
virtual HRESULT QueryUIClose(
    ICodeWarriorProject *project);
```

`project`

A pointer to the project window to close.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## RevertCompleted

This method indicates that a reversion (backing up to an earlier state) operation has finished.

```
virtual HRESULT RevertCompleted(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## VisibleChanged

This method indicates that the project window's visibility has changed (it has been hidden or revealed).

```
virtual HRESULT VisibleChanged(
    ICodeWarriorProject *project,
    VARIANT_BOOL fVisible);
```

`project`

A pointer to the project in question.

`fVisible`

Set this parameter to true if the project is visible or false if the project is invisible.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

# ICodeWarriorProjectFile

This interface provides the means to manipulate project files..

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `CheckIn` | `get_Project` |
| `CheckOut` | `get_Targets` |
| `get_FileSpec` | `get_VCSState` |
| `get_Name` | |

## CheckIn

This method checks in the project file for the current project.

```
virtual HRESULT CheckIn(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CheckOut

This method checks out the current project file.

```
virtual HRESULT CheckOut(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FileSpec

This method gets the file specification for the current project file.

```
virtual HRESULT get_FileSpec(IFileSpec **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the file specification for the current project file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_Name

This method gets the name of the current project file.

```
virtual HRESULT get_Name(BSTR *pval);
```

`pval`

On return, this parameter contains the name of the current project file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Project

This method gets the project object for the current project.

```
virtual HRESULT get_Project(
    ICodeWarriorProject **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the project object for the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## get_Targets

This method gets the collection of targets within the current project.

```
virtual HRESULT get_Targets(
    ICodeWarriorTargetCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the collection of target files within the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_VCSState

This method gets the current version control system (VCS) status for the current project file.

```
virtual HRESULT get_VCSState(
    ICodeWarriorVCSState **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the VCSState object for the current project.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorVCSState" on page 809

## Project Data Types

### ECodeWarriorBuildOptions

The ECodeWarriorBuildOptions enumeration provides constants for whether to build normal or to skip dependencies.

**Table 22.1 ECodeWarriorBuildOptions Enumeration**

| Constant | Description |
|---|---|
| `kCWNormalBuild` | Build the application normally |
| `kCWSkipDependencies` | Skip all dependencies when buuilding. |

### ECodeWarriorCompileChoice

The ECodeWarriorCompileChoice enumeration provides constants for what kind of operation the compiler performs.

**Table 22.2 ECodeWarriorCompileChoice Enumeration**

| Constant | Description |
|---|---|
| `kCWChoiceCheckSyntax` | Check the syntax only. |
| `kCWChoicePreprocess` | Preprocess only. |
| `kCWChoicePrecompile` | Precompile only. |
| `kCWChoiceCompile` | Compile normally. |
| `kCWChoiceDisassemble` | Disassemble. |

### ECodeWarriorRunMode

The ECodeWarriorRunMode enumeration provides constants for whether to run the resulting output of a build process and whether to run it in debug mode.

**Table 22.3 ECodeWarriorRunMode Enumeration**

| Constant | Description |
|---|---|
| `kCWDontRun` | Don't run the application after building. |
| `kCWRun` | Run the application after building. |
| `kCWDebug` | Run the application in debug mode after building. |

### EPluginDataStorageLoc

The EPluginDataStorageLoc enumeration provides constants for where a plug-in's data is stored.

**Table 22.4 EPluginDataStorageLoc Enumeration**

| Constant | Description |
|---|---|
| `kStoreInProjectFile` | Store the data in the project file. |
| `kStoreInTargetDataFile` | Store the data in a data file associated with the target. |
| `kStoreInProjectSettingsFile` | Store the data in the project settings file. |

# 23

# Symbols

This chapter describes the Symbols API, which you can use to manipulate the various symbols and messages associated with the build process.

This chapter contains the following sections:

- Symbols API Reference

## Symbols API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorBaseClassInfo`
- `ICodeWarriorClass`
- `ICodeWarriorDataMember`
- `ICodeWarriorMethod`
- `ICodeWarriorScope`
- `ICodeWarriorSourceContext`
- `ICodeWarriorSymbol`
- `ICodeWarriorSymbolContainer`

The following data types are used with these interfaces:

- `ECodeWarriorAccess`
- `ECodeWarriorShowSymbolLocation`

## ICodeWarriorBaseClassInfo

This interface provides methods to get information about a base class.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_Access` | `get_IsVirtual` |
| `get_BaseClass` | |

## get_Access

This method gets the access level for the current class.

```
virtual HRESULT get_Access(
    ECodeWarriorAccess *pval);
```

`pval`

On return, this parameter contains a pointer to the access level.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorAccess" on page 703

## get_BaseClass

This method gets the base class for the current class.

```
virtual HRESULT get_BaseClass(
    ICodeWarriorClass **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the class.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorClass" on page 668

## get_IsVirtual

This method gets whether the base class is virtual.

```
virtual HRESULT get_IsVirtual(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the base class is virtual or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorClass

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| FindDataMemberByName | get_IsFinal |
| FindMethodByName | get_IsPublic |
| get_BaseClasses | GetMethods |
| GetDataMembers | GetMethodsWithAccess |
| GetDataMembersWithAccess | get_SubClasses |
| get_IsAbstract | |

## FindDataMemberByName

This method finds a data member within the class, by name.

```
virtual HRESULT FindDataMemberByName(
    BSTR inName,
    ICodeWarriorDataMember **pval);
```

`inName`

The name of the member to find

`pval`

On return, this parameter contains the address of a pointer to the data member specified by the `inName` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDataMember" on page 675

## FindMethodByName

This method finds a method within the class, by name.

```
virtual HRESULT FindMethodByName(
    BSTR inName,
    ICodeWarriorMethod **pval);
```

`inName`

The name of the method to find.

`pval`

On return, this parameter contains the address of a pointer to the data member specified by the `inName` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorMethod" on page 677

## get_BaseClasses

This method gets a collection of base classes for the current class.

```
virtual HRESULT get_BaseClasses(
    ICodeWarriorBaseClassCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of base classes.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetDataMembers

This method gets the data members of the class.

```
virtual HRESULT GetDataMembers(
    BOOL inIncludeInherited,
    ICodeWarriorDataMemberCollection **pval);
```

`inIncludeInherited`

Set this parameter to `true` to include inherited data members or to `false` to exclude them.

`pval`

On return, this parameter contains the address of a pointer to a collection of the data members.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetDataMembersWithAccess

This method gets the data members within a class that have a particular kind of access, as determined by the `inAccessMask` parameter.

```
virtual HRESULT GetDataMembersWithAccess(
    BOOL inIncludeInherited,
    ECodeWarriorAccess inAccessMask,
    ICodeWarriorDataMemberCollection **pval);
```

`inIncludeInherited`

Set this parameter to `true` to include inherited data members or to `false` to exclude them.

`inAccessMask`

Set this parameter to one of the constants defined in the

`ECodeWarriorAccess` enumeration.

`pval`

On return, this parameter contains the address of a pointer to a collection of the data members that match the access mask.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsAbstract

This method gets whether the class is abstract.

```
virtual HRESULT get_IsAbstract(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that indicates whether the class is abstract.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsFinal

This method gets whether the class is final.

```
virtual HRESULT get_IsFinal(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that indicates whether the class is final.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsPublic

This method gets whether the class is public.

```
virtual HRESULT get_IsPublic(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that indicates whether the class is public.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetMethods

This method gets the methods within a class.

```
virtual HRESULT GetMethods(
    BOOL inIncludeInherited,
    ICodeWarriorMethodCollection **pval);
```

`inIncludeInherited`

Set this parameter to `true` to include inherited methods or to `false` to exclude them.

`pval`

On return, this parameter contains the address of a pointer to a collection of the methods.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetMethodsWithAccess

This method gets the data members within a class that have a particular kind of access, as determined by the `inAccessMask` parameter.

```
virtual HRESULT GetMethodsWithAccess(
    BOOL inIncludeInherited,
    ECodeWarriorAccess inAccessMask,
    ICodeWarriorMethodCollection **pval);
```

`inIncludeInherited`

Set this parameter to `true` to include inherited members or to `false` to exclude them.

`inAccessMask`

Set this parameter to one of the constants defined in the ECodeWarriorAccess enumeration.

`pval`

On return, this parameter contains the address of a pointer to a collection of the methods that match the access mask.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_SubClasses

This method gets a collection containing the subclasses of the class.

```
virtual HRESULT get_SubClasses(
    ICodeWarriorClassCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of the current class's subclasses.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

# ICodeWarriorDataMember

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_IsFinal` | `get_IsTransient` |

## get_IsFinal

This method gets whether the current data member is final.

```
virtual HRESULT get_IsFinal(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the data member is final or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsTransient

This method gets whether the current data member is transient.

```
virtual HRESULT get_IsTransient(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the data member is transient or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorMethod

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_IsAbstract` | `get_IsNative` |
| `get_IsConst` | `get_IsStatic` |
| `get_IsConstructor` | `get_IsSynchronized` |
| `get_IsDestructor` | `get_IsVirtual` |

## get_Access

This method gets the access restriction for the current method.

```
virtual HRESULT get_Access(
    ECodeWarriorAccess *pval);
```

`pval`

On return, this pointer contains a pointer to the access restriction for the current method.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorAccess" on page 703

## get_IsAbstract

This method gets whether the current method is abstract.

```
virtual HRESULT get_IsAbstract(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is abstract or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsConst

This method gets whether the current method has been declared as constant.

```
virtual HRESULT get_IsConst(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is abstract or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsConstructor

This method gets whether the current method is one of a class's constructors.

```
virtual HRESULT get_IsConstructor(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is a constructor or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsDestructor

This method gets whether the current method is one of a class's destructors.

```
virtual HRESULT get_IsDestructor(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is a destructor or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsInline

This method gets whether the current method is inline.

```
virtual HRESULT get_IsInline(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is inline or `false` if not.

Returns `Nothing`

## get_IsNative

This method gets whether the current method is native.

```
virtual HRESULT get_IsNative(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is native or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsStatic

This method gets whether the current method is static.

```
virtual HRESULT get_IsStatic(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is static or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsSynchronized

This method gets whether the current method is synchronized.

```
virtual HRESULT get_IsSynchronized(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is synchronized or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_IsVirtual

This method gets whether the current method is virtual.

```
virtual HRESULT get_IsVirtual(
    BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the method is virtual or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorScope

### Inherited Interfaces

- `ICodeWarriorSymbol`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_Symbols` | `FindSymbols` |

## get_Symbols

This method gets the symbols within the current scope that match a particular symbol type and a particular access mask. Optionally, this method can get the symbols from parent scopes inherited by this scope.

```
virtual HRESULT get_Symbols(
    ECodeWarriorSymbolType inSymbolTypeMask,
    ECodeWarriorAccess inAccessMask,
    BOOL inIncludeInherited,
    ICodeWarriorSymbolCollection** pval) = 0;
```

`inSymbolTypeMask`

One of the constants from the `ECodeWarriorSymbolType` enumeration.

`inAccessMask`

One of the constants defined in the `ECodeWarriorAccess` enumeration.

`inIncludeInherited`

`true` to include matching symbols from inherited scopes or to `false` to exclude them.

`pval`

On return, this parameter contains the address of a pointer to a collection object containing the specified symbols.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

"ECodeWarriorSymbolType" on page 704

"ECodeWarriorAccess" on page 703

## FindSymbols

This method finds symbols, given a search string, a mode, a mask, and a switch for whether to include the symbols from inherited scopes. The resulting symbols return in a symbol collection object that you specify when you call this method.

```
virtual HRESULT FindSymbols(
    BSTR inFindString,
    ECodeWarriorFindSymbolsMode inFindSymbolsMode,
    ECodeWarriorSymbolType inSymbolTypeMask,
    ECodeWarriorAccess inAccessMask,
    BOOL inIncludeInherited,
    ICodeWarriorSymbolCollection** outSymbols) = 0;
```

`inFindString`

A string that specifies which symbols to find.

`inFindSymbolMode`

One of the constants from the `ECodeWarriorFindSymbolsMode` enumeration.

`inSymbolTypeMask`

One of the constants from the `ECodeWarriorSymbolType` enumeration.

`inIncludeInherited`

`true` to include matching symbols from inherited scopes or to `false` to exclude them.

`outSymbols`

On return, this parameter contains the address of a pointer to a symbol collection object that contains the symbol objects returned by this method.

Returns `S_OK` if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

"ECodeWarriorFindSymbolsMode" on page 703

"ECodeWarriorSymbolType" on page 704

# ICodeWarriorSourceContext

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_EndOffset` | `put_EndOffset` |
| `get_FileSpec` | `put_FileSpec` |
| `get_IsDefined` | `put_StartOffset` |
| `get_StartOffset` | |

## get_EndOffset

This method gets the number of characters from the top of a source file to the end of a specified symbol (usually one identified by the compiler as problematic).

```
virtual HRESULT get_EndOffset(
    long *pval)
```

`pval`

On return, this parameter contains a pointer to a long integer that indicates how many characters from the top of the file to the end of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_FileSpec

This method gets the file specification for a specified symbol (usually one identified by the compiler as problematic).

```
virtual HRESULT  get_FileSpec(
    IFileSpec  **pval)
```

`pval`

On return, this parameter contains the address of a pointer to the file specification for the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_IsDefined

This method indicates whether the symbol in question has been defined.

```
virtual HRESULT get_IsDefined(
    BOOL *pval)
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the symbol in question has been defined or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_StartOffset

This method gets the number of characters from the top of a source file to the start of a specified symbol (usually one identified by the compiler as problematic).

```
virtual HRESULT get_StartOffset(
    long *pval)
```

`pval`

On return, this parameter contains a pointer to a long integer that indicates how many characters from the top of the file to the start of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_EndOffset

This method sets the number of characters to the end of a symbol in a source file.

```
virtual HRESULT  put_EndOffset(
    long pval)
```

`pval`

The number of characters from the top of the file to the end of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_FileSpec

This method sets the file specification for a symbol.

```
virtual HRESULT put_FileSpec(
    IFileSpec *pval)
```

`pval`

A pointer to a file specification.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## put_StartOffset

This method sets the number of characters to the start of a symbol in a source file.

```
virtual HRESULT  put_StartOffset(
    long pval)
```

`pval`

The number of characters from the top of the file to the start of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorSymbol

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_Class` | `get_DefinitionLocation` |
| `get_Container` | `get_Name` |
| `get_DeclarationLocation` | `get_SimpleName` |

## get_Class

This method gets the class in which a symbol appears

```
virtual HRESULT get_Class(
    ICodeWarriorClass **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the class containing the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorClass" on page 668

## get_Container

This method gets the container for a symbol.

```
virtual HRESULT get_Container(
    ICodeWarriorSymbolContainer **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the container that holds the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSymbolContainer" on page 694

## get_DeclarationLocation

This method gets the location where the symbol was declared.

```
virtual HRESULT get_DeclarationLocation(
    ICodeWarriorSourceContext **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the source context where the symbol in question was declared.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSourceContext" on page 686

## get_DefinitionLocation

This method gets the location where the symbol was defined.

```
virtual HRESULT get_DefinitionLocation(
    ICodeWarriorSourceContext **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the source context where the symbol in question was defined.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSourceContext" on page 686

## get_Name

This method gets the fully qualified name of the symbol.

```
virtual HRESULT get_Name(
    BSTR *pval);
```

`pval`

On return, this parameter contains the name of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SimpleName

This method gets the simple name of the symbol.

```
virtual HRESULT get_SimpleName(
    BSTR *pval);
```

`pval`

On return, this parameter contains the simple name of the symbol in question.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorSymbolContainer

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `AddComponentAttachment` | `get_GlobalScope` |
| `FindClass` | `get_Symbols` |
| `FindClassInFile` | `get_Target` |
| `FindSymbolBySourceContext` | `RemoveComponentAttachment` |
| `FindSymbols` | `ShowSymbolDeclaration` |
| `get_ClassList` | `ShowSymbolDefinition` |
| `get_ExtraDataDescriptors` | |

## AddComponentAttachment

This method lets you add a component attachment to a symbol container.

```
virtual HRESULT AddComponentAttachment(
    CLSID *attachmentCLSID);
```

`attachmentCLSID`

A pointer to the component attachment to add.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## FindClass

This method finds a class, given its name.

```
virtual HRESULT FindClass(
    BSTR inClassName,
    ICodeWarriorClass **outClass);
```

`inClassName`

The name of the class to find.

`outClass`

On return, this parameter contains the address of a pointer to the class.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorClass" on page 668

## FindClassInFile

This method finds a file within a class, given the class's name and a file specification.

```
virtual HRESULT FindClassInFile(
    BSTR inClassName,
    IFileSpec *inSpec,
    ICodeWarriorClass **outClass);
```

`inClassName`

The name of the class.

`inSpec`

A pointer to a file specification.

`outClass`

On return, this parameter contains the address of a pointer to the class.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorClass" on page 668

## FindSymbolBySourceContext

This method finds a debugging symbol, given an object that specifies the source context of the symbol.

```
virtual HRESULT FindSymbolBySourceContext(
    ICodeWarriorSourceContext* inSourceContext,
    ICodeWarriorSymbol** outSymbol) = 0;
```

`inSourceContext`

The source context object for which to find a debugging symbol.

`outSymbol`

On return, this parameter contains a pointer to the address of the specified debugging symbol.

Returns `S_OK` if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSourceContext" on page 686

## FindSymbols

This method finds symbols, given a search string, a mode, a mask, and a switch for whether to include child containers. The resulting

symbols return in a symbol collection object that you specify when you call this method.

```
virtual HRESULT FindSymbols(
    BSTR inFindString,
    ECodeWarriorFindSymbolsMode inFindSymbolsMode,
    ECodeWarriorSymbolType inSymbolTypeMask,
    BOOL inIncludeChildContainers,
    ICodeWarriorSymbolCollection** outSymbols) = 0;
```

`inFindString`

A string that specifies which symbols to find.

`inFindSymbolMode`

One of the constants from the `ECodeWarriorFindSymbolsMode` enumeration.

`inSymbolTypeMask`

One of the constants from the `ECodeWarriorSymbolType` enumeration.

`inIncludeChildContainers`

`true` to search child symbol containers for the specified symbols or `false` to search only the current symbol container.

`outSymbols`

On return, this parameter contains the address of a pointer to a symbol collection object that contains the symbol objects returned by this method.

Returns `S_OK` if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

"ECodeWarriorFindSymbolsMode" on page 703

"ECodeWarriorSymbolType" on page 704

## get_ClassList

This method gets a list of the classes referenced by the symbol container.

```
virtual HRESULT get_ClassList(
    ICodeWarriorClassCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the class list.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_ExtraDataDescriptors

This method gets a collection of strings that further define the symbols within this container.

```
virtual HRESULT get_ExtraDataDescriptors(
    IBSTRCollection** outExtraDataDescriptors) = 0;
```

`outExtraDataDescriptors`

On return, this parameter contains the address of a pointer to a collection of strings that further define the symbols within this container.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_GlobalScope

This method gets a pointer to the global scope object.

```
virtual HRESULT get_GlobalScope(
    ICodeWarriorScope** pval) = 0;
```

`pval`

On return, this parameter contains a pointer to the address of a scope object that defines the global scope.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorScope" on page 683

## get_Symbols

This method gets a symbol container object containing all the symbol objects that match a given mode and mask. Optionally, this method can include matching symbols from child symbol containers, as well as the current symbol container.

```
virtual HRESULT get_Symbols(
    ECodeWarriorFindSymbolsMode inFindSymbolsMode,
    ECodeWarriorSymbolType inSymbolTypeMask,
    BOOL inIncludeChildContainers,
    ICodeWarriorSymbolCollection** outSymbols) = 0;
```

`inFindSymbolMode`

One of the constants from the `ECodeWarriorFindSymbolsMode` enumeration.

`inSymbolTypeMask`

One of the constants from the `ECodeWarriorSymbolType` enumeration.

`inIncludeChildContainers`

`true` to search child symbol containers for the specified symbols or `false` to search only the current symbol container.

`outSymbols`

On return, this parameter contains the address of a pointer to a symbol collection object that contains the symbol objects returned by this method.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

"ECodeWarriorFindSymbolsMode" on page 703

"ECodeWarriorSymbolType" on page 704

## get_Target

This method gets the target associated with the symbol container (that is, the target for which the build process generated the symbols in the symbol container.

```
virtual HRESULT get_Target(
    ICodeWarriorTarget **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the target associated with the current symbol container.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## RemoveComponentAttachment

This method removes a component attachment from the symbol container.

```
virtual HRESULT RemoveComponentAttachment(
    CLSID *attachmentCLSID);
```

`attachmentCLSID`

A pointer to the component attachment to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ShowSymbolDeclaration

This method shows the user where a specified symbol is located. It may also let the user edit the symbol in that location.

```
virtual HRESULT ShowSymbolDeclaration(
    ICodeWarriorSymbol *inSymbol,
    BOOL inForEditing,
    ECodeWarriorShowSymbolLocation inLocation);
```

`inSymbol`

The symbol to show the user.

`inForEditing`

Set this parameter to `true` to let the user edit the line on which the symbol appears or `false` to prevent editing.

`inLocation`

Where to show the symbol.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSymbol" on page 690

"ECodeWarriorShowSymbolLocation" on page 704

## ShowSymbolDefinition

This method shows where the symbol in question is defined.

```
virtual HRESULT ShowSymbolDefinition(
    ICodeWarriorSymbol *inSymbol,
    BOOL inForEditing,
    ECodeWarriorShowSymbolLocation inLocation);
```

`inSymbol`

The symbol to show the user.

`inForEditing`

Set this parameter to `true` to let the user edit the line on which the symbol appears or `false` to prevent editing.

`inLocation`

Where to show the symbol.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSymbol" on page 690

"ECodeWarriorShowSymbolLocation" on page 704

## Symbols Data Types

### ECodeWarriorAccess

The `ECodeWarriorAccess` enumeration provides constants for member access levels.

| Constant | Definition |
|---|---|
| `kAccessNone` | No Access. |
| `kPublicAccess` | Access to public members. |
| `kProtectedAccess` | Access to protected (and public) members. |
| `kPrivateAccess` | Access to private (and protected and public members). |
| `kAccessAll` | Access to all members. |

### ECodeWarriorFindSymbolsMode

The `ECodeWarriorFindSymbolsMode` enumeration provides constants for controlling the output of methods that find debugging symbols.

| Constant | Definition |
|---|---|
| `kFindSymbolsByName` | Specify symbols by name. |
| `kFindSymbolsByPrefix` | Specify symbols by prefix. |
| `kFindSymbolsBySubstring` | Specify symbols by substring. |

### ECodeWarriorShowSymbolLocation

The `ECodeWarriorAccess` enumeration provides constants for where a symbol can be shown.

| Constant | Definition |
|---|---|
| `kShowInEditor` | The symbol can be shown in the editor. |
| `kShowInBrowser` | The symbol can be shown in the symbol broswer. |
| `kUsePreferenceToShow` | The symbol conforms to user settings for where to show symbols. |

### ECodeWarriorSymbolType

The `ECodeWarriorSymbolType` enumeration provides constants for the types of symbols that the various find functions should return.

| Constant | Definition |
|---|---|
| `kSymbolTypeNone` | Specifies no symbol. |
| `kSymbolTypeMacro` | Specifies macros. |
| `kSymbolTypeEnum` | Specifies enumerations. |
| `kSymbolTypeTypedef` | Specifies typedefs |
| `kSymbolTypeClass` | Specifies classes. |
| `kSymbolTypeFunction` | Specifies functions. |
| `kSymbolTypeVariable` | Specifies variables. |
| `kSymbolTypeDataMember` | Specifies data members. |
| `kSymbolTypeMethod` | Specifies methods. |
| `kSymbolTypeConstant` | Specifies constants. |
| `kSymbolTypeTemplate` | Specifies templates. |
| `kSymbolTypeCompilerDefined` | Specifies compiler-defined types. |
| `kSymbolTypeScope` | Specifies scopes |
| `kSymbolTypeAll` | Specifies all symbols. |

# 24

# Targets

This chapter shows how to use the Targets API to manage operations with targets in the CodeWarrior IDE.

This chapter contains the following sections:

- Targets API Overview
- Targets API Reference

## Targets API Overview

The Targets API is a set of interfaces that allows a plug-in to create and manipulate targets in the CodeWarrior IDE.

## Targets API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorTarget`
- `ICodeWarriorTargetFile`
- `ICodeWarriorTargetOutput`
- `ICodeWarriorSubTarget`
- `ICodeWarriorSubProjectTarget`
- `ICodeWarriorSegment`

These interfaces use the following data types:

- `ECodeWarriorBrowserGenerator`
- `ECodeWarriorTargetLinkOrderType`
- `ECodeWarriorTargetOutputKind`
- `ECodeWarriorWhichTargetOptions`

## ICodeWarriorTarget

This interface defines a target that a plug-in can manipulate.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `AddFile` | `get_Name` |
| `AddFile2` | `GetNamedPluginData` |
| `AddFile2ByFileSpec` | `get_Project` |
| `AddFile2ByFileSpecCollection` | `get_ProjectFileCollection` |
| `AddFileByFileSpec` | `GetProjectFileFromFileSpec` |
| `AddFileByFileSpecCollection` | `GetSegmentByName` |
| `AddSegment` | `GetSegmentList` |
| `AddSubTarget` | `GetSegmentListAsBSTR` |
| `AddUserTree` | `GetSubProjects` |
| `Build` | `get_SubTargets` |
| `BuildAgainstSubProjectTarget` | `get_TargetFileCollection` |
| `BuildAndWaitToComplete` | `GetTargetFileForProjectFile` |
| `BuildAndWaitToCompleteWithOptions` | `GetTargetOutput` |
| `BuildWithOptions` | `get_UserTrees` |
| `CompileFiles` | `LinkAgainstSubProjectTarget` |
| `CompileFilesAndWaitToComplete` | `LinkAgainstSubTarget` |
| `CompileFilesWithChoice` | `MoveFileIntoSegment` |
| `CreateUserTree` | `put_BrowserEnabled` |
| `Debug` | `put_BrowserGenerator` |
| `FindAndAddFile` | `put_Name` |
| `FindAndAddFile2` | `RemoveFile` |
| `FindAndAddFile2ByCollection` | `RemoveNamedPluginData` |
| `FindAndAddFileByCollection` | `RemoveObjectCode` |

| | |
|---|---|
| get_AccessPaths | RemoveObjectCodeWithOptions |
| get_BrowserDB | RemoveSegment |
| get_BrowserEnabled | RemoveUserTree |
| get_BrowserGenerator | SetNamedPluginData |
| get_Design | SetupDebugging |
| GetLinkerName | SynchronizeStatus |
| get_LinkOrderType | |

## AddFile

This method adds a file to the current target.

```
virtual HRESULT AddFile(
    BSTR path,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile);
```

`path`

The path to the file to add.

`groupPath`

The path to the group to which to add the file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file associated with the added file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## AddFile2

This method adds a file to the current target and set link flags on the file.

```
virtual HRESULT AddFile2
    BSTR path,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

The path to the file to add.

`groupPath`

The path to the group to which to add the file.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file associated with the added file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

"ECodeWarriorLinkFlags" on page 557

## AddFile2ByFileSpec

This method adds a file to the current target, by using a file specification object, and set link flags on the file.

```
virtual HRESULT  AddFile2ByFileSpec(
```

```
    IFileSpec __RPC_FAR *fileSpec,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

The path to the file to add.

`groupPath`

The path to the group to which to add the file.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file associated with the added file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorProjectFile" on page 659

"ECodeWarriorLinkFlags" on page 557

## AddFile2ByFileSpecCollection

This method adds a collection of files to the current target and set link flags on the files.

```
virtual HRESULT AddFile2ByFileSpecCollection(
    IFileSpecCollection __RPC_FAR *inCollection,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    int *pFilesAdded) = 0;
```

`path`

The path to the file to add.

`groupPath`

The path to the group to which to add the file.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file associated with the added file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

"ICodeWarriorProjectFile" on page 659

"ECodeWarriorLinkFlags" on page 557

## AddFileByFileSpec

This method adds a file to the current target, by file specification.

```
virtual HRESULT AddFileByFileSpec(
    IFileSpec *fileSpec,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile);
```

`path`

The path to the file to add.

`groupPath`

The path to the group to which to add the file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file associated with the added file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorProjectFile" on page 659

## AddFileByFileSpecCollection

This method adds all the files in a collection of file specifications to the current target.

```
virtual HRESULT AddFileByFileSpecCollection(
    IFileSpecCollection *inCollection,
    BSTR groupPath,
    int *pFilesAdded);
```

`inCollection`

A pointer to the collection of file specifications that defines the files to add.

`groupPath`

The path to the group to which to add the files.

`pFilesAdded`

On return, this parameter contains a pointer to an integer holding the number of files added to the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## AddSegment

This method adds a segment to the target. Once you have added the segment with this method, you can use the methods in `ICodeWarriorSegment` to specify further details about the new segment.

```
HRESULT AddSegment(
    BSTR segmentName,
    ICodeWarriorSegment **outSegment);
```

`segmentName`

The name to assign to the new segment.

`outSegment`

On return, this parameter contains the address of a pointer to the new segment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSegment" on page 757

## AddSubTarget

CodeWarrior targets can contain other CodeWarrior targets. This method adds a target within the current target.

```
virtual HRESULT AddSubTarget(
    ICodeWarriorTarget *target,
    VARIANT_BOOL linkAgainstOutput);
```

`target`

A pointer to the target to be added.

`linkAgainstOutput`

`true` to link against the output of the added subtarget or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## AddUserTree

This method adds an existing user tree to the current target.

```
virtual HRESULT AddUserTree(
    ICodeWarriorUserTree *pval) = 0;
```

`pval`

A pointer to the user tree to add to the application.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorUserTree" on page 436

## Build

This method tells the CodeWarrior IDE to build the current target.

```
virtual HRESULT Build(
    long *cookie);
```

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## BuildAgainstSubProjectTarget

This method controls whether to build a target within a subproject.

```
virtual HRESULT BuildAgainstSubProjectTarget(
    ICodeWarriorSubProjectTarget *target,
    VARIANT_BOOL val) = 0;
```

`target`

A pointer to the target to build.

`val`

`true` to build the target or `false` to not build it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSubProjectTarget" on page 755

## BuildAndWaitToComplete

This method starts a build of the current project and has the IDE wait to gather all messages from the build process.

```
virtual HRESULT BuildAndWaitToComplete(
    ICodeWarriorBuildMessages **buildMessages);
```

`buildMessages`

On return, this parameter contains the address of a pointer to the messages created by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorBuildMessages" on page 616

## BuildAndWaitToCompleteWithOptions

This method builds the current project with one of the options specified in the ECodeWarriorBuildOptions enumeration. This method accumulates all the messages from the build process before returning.

```
virtual HRESULT BuildAndWaitToCompleteWithOptions(
    ECodeWarriorBuildOptions options,
```

```
    ICodeWarriorBuildMessages **buildMessages) = 0;
```

`options`

The build options to use with this build.

`buildMessages`

On return, this parameter contains the address of a pointer to the build messages created by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBuildOptions" on page 662

## BuildWithOptions

This method builds the current target with one of the options specified in the ECodeWarriorBuildOptions enumeration.

```
virtual HRESULT BuildWithOptions(
    ECodeWarriorBuildOptions options,
    ECodeWarriorRunMode runMode,
    long *cookie) = 0;
```

`options`

The build options to use with this build.

`runmode`

Whether to run the resulting program after building it and, if so, whether to run it in debug mode. The ECodeWarriorRunMode enumeration contains the costants that define this parameter.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBuildOptions" on page 662

"ECodeWarriorRunMode" on page 662

## CompileFiles

Use this method to compile the current target.

```
virtual HRESULT CompileFiles(
    ICodeWarriorProjectFileCollection *collection,
    long *cookie);
```

`collection`

A pointer of type ICodeWarriorProjectFileCollection indicating the collection of files to compile.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## CompileFilesAndWaitToComplete

Use this method to compile the current target and return all the build messages created by the compiler.

```
virtual HRESULT CompileFilesAndWaitToComplete(
    ICodeWarriorProjectFileCollection *collection,
    ICodeWarriorBuildMessages **buildMessages);
```

`collection`

A pointer of type ICodeWarriorProjectFileCollection indicating the collection of files to compile.

`buildMessages`

On return, this parameter contains the address of a pointer to the build messages generated by the compiler.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## CompileFilesWithChoice

This method compiles a collection of project files with one of the options specified in the ECodeWarriorCompileChoice enumeration.

```
virtual HRESULT  CompileFilesWithChoice(
    ICodeWarriorProjectFileCollection *collection,
    ECodeWarriorCompileChoice compileChoice,
    long *cookie) = 0;
```

`collection`

A pointer to a collection of file projects to compile.

`compileChoice`

The kind of compilation the compiler should perform.

`cookie`

On return, this parameter contains a unique identifier for the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorCompileChoice" on page 662

## CreateUserTree

This method creates a new user tree.

```
virtual HRESULT CreateUserTree(
    BSTR displayName,
    BSTR value,
    EUserDefinedTree type,
    BSTR keyName,
    ICodeWarriorUserTree **pVal) = 0;
```

`displayName`

The name of the user tree that will appear in the IDE.

`value`

The value string of the user tree.

`type`

The type of the tree, which must be one of the values specified by the EUserDefinedTree Tree enumeration.

`keyName`

The key name of the user tree.

`pval`

On return, this parameter contains the address of a pointer to the new user tree.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EUserDefinedTree" on page 441

"ICodeWarriorUserTree" on page 436

## Debug

This method runs the debugger on this target and returns the build messages. You can set which debugger is associated with this target in the IDE.

```
virtual HRESULT Debug(
    ICodeWarriorBuildMessages** buildMessages) = 0;
```

`buildMessages`

On return, this parameter contains the address of a pointer to the messages created by the build process.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorBuildMessages" on page 616

## FindAndAddFile

This method finds a file and adds it to the current target.

```
virtual HRESULT FindAndAddFile(
    BSTR path,
    BSTR groupPath,
    ICodeWarriorProjectFile **projectFile);
```

`path`

Either the absolute (fully qualified) path to the file you want to add to the design or just the name of the file. If you provide just the file name, the IDE searches the access paths and adds the first file of that name that it finds. If you want to add two one files with identical names, use the fully qualified path to each

one.

`groupPath`

The absolute path to the group within which the new file should be added.

`projectFile`

On return, this parameter contains the address of a pointer to the project file that contains the current target..

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## FindAndAddFile2

This method finds a file and adds it to the design. This method also lets you set link flags on the file.

```
virtual HRESULT FindAndAddFile2(
    BSTR path,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    ICodeWarriorProjectFile **projectFile) = 0;
```

`path`

Either the absolute (fully qualified) path to the file you want to add to the design or just the name of the file. If you provide just the file name, the IDE searches the access paths and adds the first file of that name that it finds. If you want to add two one files with identical names, use the fully qualified path to each one.

`groupPath`

The absolutepath to the group within which the new file should be added.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`projectFile`

On return, this parameter contains the address of a pointer to the project file to which the file was added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## FindAndAddFile2ByCollection

This method adds a named collection of files to the current target, setting link flags on all the added files in the process.

```
virtual HRESULT FindAndAddFile2ByCollection(
    IBSTRCollection *inCollection,
    BSTR groupPath,
    ECodeWarriorLinkFlags linkFlags,
    int *pFilesAdded) = 0;
```

`inCollection`

The name of the collection of files to add to the current target.

`groupPath`

The absolute path to the group within which the new file should be added.

`linkFlags`

A value in the range defined by the ECodeWarriorLinkFlags enumeration, representing how the linker should link this file.

`pFilesAdded`

On return, this parameter contains a pointer to the number of files added.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## FindAndAddFileByCollection

This method adds a collection of files to the current target.

```
virtual HRESULT FindAndAddFileByCollection(
    IBSTRCollection *inCollection,
    BSTR groupPath,
    int *pFilesAdded);
```

`inCollection`

The file collection to add.

`groupPath`

The path to the group within which the new files should be added.

`pFilesAdded`

On return, this parameter contains a pointer to an integer holding the number of files added to the target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_AccessPaths

This method gets the access paths for the current target.

```
virtual HRESULT get_AccessPaths(
    ICodeWarriorAccessPaths **pval);
```

`pval`

On return, this parameter contains the address of a poiner to the access paths of the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorAccessPaths" on page 429

## get_BrowserDB

This method gets the symbols created during the most recent build of the current target.

```
virtual HRESULT get_BrowserDB(
    ICodeWarriorSymbolContainer **catalog);
```

`catalog`

On return, this parameter contains the address of a parameter to the list of symbols generated by the most recent build of the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSymbolContainer" on page 694

## get_BrowserEnabled

This method gets whether the symbol browser is enabled.

```
virtual HRESULT get_BrowserEnabled(
    VARIANT_BOOL *fEnabled);
```

`fEnabled`

On return, this parameter contains a pointer to a boolean that is set to `true` if the symbol browse is enabled or `false` otherwise.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_BrowserGenerator

This method gets the source of the browser symbols being generated for this target.

```
virtual HRESULT get_BrowserGenerator(
    ECodeWarriorBrowserGenerator* generator) = 0;
```

`generator`

On return, this parameter contains one of the constants defined in the `ECodeWarriorBrowserGenerator` enumeration.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBrowserGenerator" on page 764

## get_Design

This method gets the design associated with the current target.

```
virtual HRESULT get_Design(
    ICodeWarriorDesign **design);
```

`design`

On return, this parameter contains the address of a pointer to the design associated with the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorDesign" on page 542

## GetLinkerName

This method gets the name of the current linker.

```
virtual HRESULT GetLinkerName(
    BSTR *pval) = 0;
```

`pval`

On return, this pararameter contains the name of the current linker.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_LinkOrderType

This method gets the type of link order used by this target.

```
HRESULT get_LinkOrderType(
    ECodeWarriorTargetLinkOrderType *type);
```

`type`

On return, this parameter contains a pointer to the enumerated value that indicates the link order type used by this target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorTargetLinkOrderType" on page 764

## get_Name

This method gets the name of the current target.

```
virtual HRESULT get_Name(
    BSTR *pval);
```

`pval`

On return, this parameter contains the name of the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetNamedPluginData

This method gets the data from a plug-in, specified by name.

```
virtual HRESULT GetNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn,
    IStream **pluginData);
```

`resourceName`

The name of the plug-in from which to get data.

`storeIn`

The location in which the data is stored.

`pluginData`

On return, this parameter contains the address of a pointer to the date from the specified plug-in.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## get_Project

This method gets the project associated with the current target.

```
virtual HRESULT get_Project(
    ICodeWarriorProject **project);
```

`project`

On return, this parameter contains the address of a pointer to the project associated with the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProject" on page 630

## get_ProjectFileCollection

This method gets the project file collection to which the project file associated with the current target belongs.

```
virtual HRESULT get_ProjectFileCollection(
    ICodeWarriorProjectFileCollection
    **projectFileCollection);
```

`projectFileCollection`

On return, this parameter contains the address of a pointer to the project file collection associated with the project file to which the current target belongs.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetProjectFileFromFileSpec

This method gets a project file, by file specification.

```
virtual HRESULT GetProjectFileFromFileSpec(
    IFileSpec *fileSpec,
    ICodeWarriorProjectFile **projectFile);
```

`fileSpec`

A pointer to the file specification.

`projectFile`

On return, this parameter contains the address of a pointer to the project file specified in the `fileSpec` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## GetSegmentByName

This method gets a specified segment, given the segment's name.

```
HRESULT GetSegmentByName(
    BSTR segmentName,
    ICodeWarriorSegment **outSegment);
```

`segmentName`

The name of the segment to get.

`outSegment`

On return, this parameter contains the address of a pointer to the specified segment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSegment" on page 757

## GetSegmentList

This method gets the collection of segments within the target. You can then use the Collection API to access the segments.

```
HRESULT GetSegmentList(
    ICodeWarriorSegmentCollection
    **segCollection);
```

`segCollection`

On return, this parameter contains the address of a pointer to the collection of segments within the target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetSegmentListAsBSTR

This method gets a collection of strings that correspond to the segments within the target. You can then use the Collection API to access the strings.

```
HRESULT GetSegmentListAsBSTR(
    IBSTRCollection **segCollection);
```

`segCollection`

On return, this parameter contains the address of a pointer to the collection of strings that correspond to the segments within the target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetSubProjects

This method gets a collection of the projects within the current target.

```
virtual HRESULT GetSubProjects(
    ICodeWarriorSubProjectCollection
    **subProjectList) = 0;
```

`subProjectList`

On return, this parameter contains the address of a pointer to the a collection of subprojects.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_SubTargets

A CodeWarrior target can contain other CodeWarrior targets. This method gets the targets containined within the current target.

```
virtual HRESULT get_SubTargets(
    ICodeWarriorSubTargetCollection
          **subTargetList);
```

`subTargetList`

On return, this parameter contains the address of a pointer to the collection of targets within the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_TargetFileCollection

This method gets the collection of target files that the current target contains.

```
virtual HRESULT get_TargetFileCollection(
    ICodeWarriorTargetFileCollection
    **targetFileCollection);
```

`targetFileCollection`

On return, this parameter contains the address of a pointer to the collection of target files within the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## GetTargetFileForProjectFile

This method gets the target file for a specified project file.

```
virtual HRESULT GetTargetFileForProjectFile(
    ICodeWarriorProjectFile *projectFile,
    ICodeWarriorTargetFile **targetFile);
```

`projectFile`

A pointer to the project file for which to get the target file.

`targetFile`

On return, this parameter contains the address of a pointer to the target file associated with the specified project file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

"ICodeWarriorTargetFile" on page 743

## GetTargetOutput

This method gets the output of the current target.

```
virtual HRESULT GetTargetOutput(
    ICodeWarriorTargetOutput **targetOutput);
```

`targetOutput`

On return, this parameter contains the address of a pointer to the output of the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTargetOutput" on page 751

## get_UserTrees

This method gets the user trees, as a collection of trees.

```
virtual HRESULT get_UserTrees(
    ICodeWarriorUserTreeCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of trees that constitute the user trees.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## LinkAgainstSubProjectTarget

This method specifies whether to link against the target produced by a particular subproject within the current target.

```
virtual HRESULT LinkAgainstSubProjectTarget(
    ICodeWarriorSubProjectTarget *target,
    VARIANT_BOOL val) = 0;
```

`target`

The target (produced by a subproject) to link against (or not).

`val`

`true` to link against the target specified in `target` or `false` if not.

See Also "ICodeWarriorSubProjectTarget" on page 755

## LinkAgainstSubTarget

This method specifies whether to link against a particular subtarget within the current target.

```
virtual HRESULT LinkAgainstSubTarget(
    ICodeWarriorSubTarget *target,
    VARIANT_BOOL val) = 0;
```

`target`

The subtarget to link against (or not).

`val`

`true` to link against the target specified in `target` or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSubTarget" on page 753

## MoveFileIntoSegment

This method moves an existing file into a segment.

```
HRESULT MoveFileIntoSegment(
    ICodeWarriorTargetFile *targetFile,
    ICodeWarriorSegment *segment,
    long segmentPosition);
```

`targetFile`

The file to move into the segment.

`segment`

The segment into which to move the file.

`segmentPosition`

The position of the file within the segment's file list. Use 0 to put the file at the start of the file list. Use a negative number to put the file at the end of the file list. Use a positive number to put the file at the position that corresponds to the number.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorSegment" on page 757

"ICodeWarriorTargetFile" on page 743

## put_BrowserEnabled

This method sets whether the symbol browser is enabled.

```
virtual HRESULT put_BrowserEnabled(
    VARIANT_BOOL fEnabled);
```

`fEnabled`

Set this parameter to `true` to enable the symbol browser or `false` to disable it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_BrowserGenerator

This method sets the source of debugging messages for this target.

```
virtual HRESULT put_BrowserGenerator(
    ECodeWarriorBrowserGenerator generator) = 0;
```

`generator`

One of the constants defined in the `ECodeWarriorBrowserGenerator` enumeration.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorBrowserGenerator" on page 764

## put_Name

This target assigns the name of the current target.

```
virtual HRESULT put_Name(
    BSTR pval);
```

`pval`

The new name for the current target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveFile

This method removes the project file for this target.

```
virtual HRESULT RemoveFile(
    ICodeWarriorProjectFile* projectFile) = 0;
```

`projectFile`

A pointer to the project file to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorProjectFile" on page 659

## RemoveNamedPluginData

This method removes the data from a plug-in specified by name.

```
virtual HRESULT RemoveNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn);
```

`resourceName`

The name of the plug-in from which to remove data.

`storeIn`

The location where the data is stored.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## RemoveObjectCode

This method removes the object code created by building the current target.

```
virtual HRESULT RemoveObjectCode(
    VARIANT_BOOL deleteDataFiles);
```

`deleteDataFiles`

Set this parameter to true to delete the data files associated with the object data or false to retain them.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveObjectCodeWithOptions

This method removes the object code from the current target. It also lets you choose whether to remove the object code from all the targets created by subprojects within the current target and whether to delete any associated data files.

```
virtual HRESULT RemoveObjectCodeWithOptions(
    ECodeWarriorWhichTargetOptions
    whichTargetOfSubprojects,
    VARIANT_BOOL recurseSubProject,
    VARIANT_BOOL deleteDataFiles) = 0;
```

`whichTargetOfSubprojects`

A value with the range defined by the ECodeWarriorWhichTargetOptions enumeration that specifies whether to remove the object code from all targets or only the current target.

`recurseSubProject`

Set this parameter to `true` to remove the object code within all the subprojects that match the `whichTargetofSubprojects` parameter or `false` to leave the object code in the subprojects.

`deleteDataFiles`

Set this parameter to `true` to delete data files associated with the current target or `false` to retain the data files.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorWhichTargetOptions" on page 765

## RemoveSegment

This method removes a segment, given the name of the segment.

```
HRESULT RemoveSegment(BSTR segmentName);
```

`segmentName`

The name of the segment to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## RemoveUserTree

This method removes a specified user tree.

```
virtual HRESULT RemoveUserTree(
```

```
    ICodeWarriorUserTree *pval) = 0;
```

`pval`

A pointer to the user tree to remove.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorUserTree" on page 436

## SetNamedPluginData

This method assigns data to a plug-in specified by name.

```
virtual HRESULT SetNamedPluginData(
    BSTR resourceName,
    EPluginDataStorageLoc storeIn,
    IStream *pluginData);
```

`resourceName`

The name of the plug-in to which to assign data.

`storeIn`

The location in which to store the data.

`pluginData`

A pointer to the data to store.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "EPluginDataStorageLoc" on page 663

## SetupDebugging

This method sets whether debugging is enabled.

```
virtual HRESULT SetupDebugging(
    VARIANT_BOOL inTurnOn);
```

`inTurnOn`

Set this parameter to `true` to enable debugging or `false` to disable debugging.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SynchronizeStatus

This method synchronizes the dates of the files stored in a version control system with the dates of the working files. For this method to work, you must have defined the VCS settings either globally or for the project that contains the target.

```
virtual HRESULT SynchronizeStatus(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorTargetFile

This interface lets a plug-in work target files.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_DebugInfo` | `get_Target` |
| `get_Dependencies` | `get_WeakImport` |
| `get_Dependents` | `put_DebugInfo` |
| `get_FileSpec` | `put_InitBefore` |
| `get_InitBefore` | `put_MergeLibrary` |
| `get_MergeLibrary` | `put_WeakImport` |
| `get_Name` | |

## get_DebugInfo

This method gets whether a debugger can get debugging information from the current target file.

```
virtual HRESULT get_DebugInfo(
    VARIANT_BOOL *value);
```

`value`

On return, this parameter contains a boolean that is set to `true` if a debugging application can get debugging information from the current target file and `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Dependencies

This method returns a collection containing the dependencies (the files on which this target depends) for the current target file.

```
virtual HRESULT get_Dependencies(
    ICodeWarriorTargetFileCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of files that form the dependencies for the current target file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_Dependents

This method returns a collection containing the dependents (the files that depend on this target) for the current target file.

```
virtual HRESULT get_Dependents(
    ICodeWarriorTargetFileCollection **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a collection of files that form the dependents for the current target file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_FileSpec

This method gets the file specification for the current target file.

```
virtual HRESULT get_FileSpec(
    IFileSpec **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the file specification for the current target file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_InitBefore

This method gets the state of the `CWInitBefore` flag.

```
virtual HRESULT get_InitBefore(
    VARIANT_BOOL *value);
```

`value`

On return, this parameter contains a pointer to a boolean set to `true` if the `CWInitBefore` flag is set to true or false if the `CWInitBefore` flag is set to `false`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## get_MergeLibrary

This method gets whether the build process should merge with libraries when building this target file.

```
virtual HRESULT get_MergeLibrary(
    VARIANT_BOOL *value);
```

`value`

On return, this parameter contains a boolean that is set to `true` if the current target file should be merged with libraries during the next build or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of the current target file.

```
virtual HRESULT get_Name(
    BSTR *pval);
```

`pval`

On return, this parameter contains the name of the current target file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Target

This method gets the target object associated with the current target file.

```
virtual HRESULT get_Target(
```

```
    ICodeWarriorTarget **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the target object associated with the current target file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

## get_WeakImport

This method gets whether this target file should be built with the Weak Import option (available only on the Mac OS).

```
virtual HRESULT get_WeakImport(
    VARIANT_BOOL *value);
```

`value`

On return, this parameter contains a boolean that is set to `true` if the current target file should be build with the Weak Import option and `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_DebugInfo

This method sets whether a debugger can get debugging information from the current target file.

```
virtual HRESULT put_DebugInfo(
    VARIANT_BOOL value);
```

`value`

Set this parameter to `true` if a debugging application can get

debugging information from the current target file and `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_InitBefore

This method sets the CWInitBefore flag.

```
virtual HRESULT put_InitBefore(
    VARIANT_BOOL value);
```

`value`

`true` to set the CWInitBefore flag to true or false to set CWInitBefore the flag to `false`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorLinkFlags" on page 557

## put_MergeLibrary

This method sets whether the build process should merge with libraries when building this target file.

```
virtual HRESULT put_MergeLibrary(
    VARIANT_BOOL value);
```

`value`

Set this parameter to `true` if the current target file should be merged with libraries during the next build or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_WeakImport

This method sets whether this target file should be built with the Weak Import option (available only on the Mac OS).

```
virtual HRESULT put_WeakImport(
    VARIANT_BOOL value);
```

`value`

Set this parameter to `true` if the current target file should be build with the Weak Import option and `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorTargetOutput

.This interface gets information about the output resulting from building the current target.

The following methods are available for your use:

| | |
|---|---|
| `get_FileSpec` | `get_OutputKind` |

### get_FileSpec

This method gets the file specification for the output file that is created when the current target is built.

```
virtual HRESULT get_FileSpec(
    IFileSpec **pval);
```

`pval`

On return, this parameter contains the address of a pointer to a file specification that defines the target output file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## get_OutputKind

This method gets the kind of output generated by building the current target.

```
virtual HRESULT get_OutputKind(
    ECodeWarriorTargetOutputKind *kind);
```

`kind`

On return, this parameter contains a pointer to the kind of output.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorTargetOutputKind" on page 764

## ICodeWarriorSubTarget

This interface provides methods for getting information about a subtarget within the current target.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `get_LinkAgainstOutput` | `get_Target` |

## get_LinkAgainstOutput

This method gets whether to link against the output of the current subtarget.

```
virtual HRESULT get_LinkAgainstOutput(
    VARIANT_BOOL *pVal);
```

`pVal`

On return, this parameter contains a pointer to a boolean that is set to `true` if the output of the current subtarget should be linked against or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Target

This method gets the target object for the current subtarget.

```
virtual HRESULT get_Target(
    ICodeWarriorTarget **pval);
```

`pval`

On return, this parameter contains the address of a pointer to the current subproject object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorSubProjectTarget

This interface provides methods for getting information about a target within a subproject containted by the current target.

### Inherited Interfaces

- `IDispatch`

### Methods

The following methods are available for your use:

| | |
|---|---|
| get_BuildAgainst | get_Name |
| get_LinkAgainst | |

## get_BuildAgainst

This method gets whether to build against the current target within a subproject within a containing target.

```
virtual HRESULT get_BuildAgainst(
    VARIANT_BOOL *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if this target should be built against or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_LinkAgainst

This method gets whether to link against the current target within a subproject within a containing target.

```
virtual HRESULT get_LinkAgainst(
    VARIANT_BOOL __RPC_FAR *pval) = 0;
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if this target should be linked against or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_Name

This method gets the name of the current target within a subproject within a containing target.

```
virtual HRESULT get_Name(
    BSTR *pval) = 0;
```

`pval`

On return, this parameter contains the name of the target.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorSegment

This interface defines a segment within a target, for processors that support segments.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `GetTargetFiles` | `Protected` |
| `Name` | `Protected` |
| `Name` | `Purgable` |
| `Locked` | `Purgable` |
| `Locked` | `PutTargetFiles` |
| `PreLoaded` | `SystemHeap` |
| `PreLoaded` | `SystemHeap` |
| | `Target` |

## GetTargetFiles

This method gets the collection of target files in the segment. Once you have the collection, you can manipulate it with the Collection API.

```
HRESULT GetTargetFiles(
    ICodeWarriorTargetFileCollection** val);
```

`val`

On return, this parameter contains the address of a pointer to a collection of the files in the segment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTargetFile" on page 743

"Using the Collections API" on page 487

## Name

This method gets the name of the segment.

```
HRESULT Name(BSTR* pval);
```

`pval`

On return, this parameter contains

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Name

This method sets the name of the segment

```
HRESULT Name(BSTR pval);
```

`pval`

The new name for the segment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Locked

This method gets whether the segment is locked.

```
HRESULT Locked(VARIANT_BOOL* pval);
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if the segment is locked or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Locked

This method sets whether the segment is locked.

```
HRESULT Locked(VARIANT_BOOL pval);
```

`pval`

`true` to lock the segment or `false` to unlock it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## PreLoaded

This method gets whether the segment is preloaded.

```
HRESULT PreLoaded(VARIANT_BOOL* pval);
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if the segment is preloaded or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## PreLoaded

This method sets whether the segment is preloaded.

```
HRESULT PreLoaded(VARIANT_BOOL pval);
```

`pval`

`true` to set the segment to preloaded or `false` to not set it to preloaded.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Protected

This method gets whether the segment is protected.

```
HRESULT Protected(VARIANT_BOOL* pval);
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if the segment is protected or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Protected

This method sets whether the segment is protected.

```
HRESULT Protected(VARIANT_BOOL pval);
```

`pval`

`true` to set the segment to protected or `false` to not set it to protected.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Purgable

This method gets whether the segment is purgable.

```
HRESULT Purgable(VARIANT_BOOL pval);
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if the segment is purgable or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Purgable

This method sets whether the segment is purgable.

```
HRESULT Purgable([out, retval] VARIANT_BOOL* pval);
```

`pval`

`true` to set the segment to purgable or `false` to not set it to purgable.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## PutTargetFiles

This method adds existing target files to the segment.

```
HRESULT PutTargetFiles(
    ICodeWarriorTargetFileCollection* val,
```

```
    long inSegmentPos);
```

`val`

A collection of files to add to the segment. Use 0 to put the files at the start of the file list. Use a negative number to put the files at the end of the file list. Use a positive number to put the files at the position that corresponds to the number.

`inSegmentPos`

The position at which to add the files. Use 0 to put the files at the start of the file list. Use a negative number to put the files at the end of the file list. Use a positive number to put the files at the position that corresponds to the number.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTargetFile" on page 743

## SystemHeap

This method gets the value of the segment's system heap flag.

```
HRESULT SystemHeap(VARIANT_BOOL* pval);
```

`pval`

On return, this parameter contains a pointer to a boolean value that is set to `true` if the system heap flag has been set to `true` for this segment or `false` otherwise.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SystemHeap

This method sets the system heap flag for this segment.

```
HRESULT SystemHeap(VARIANT_BOOL pval);
```

`pval`

`true` to set the system heap flag for this segment to `true` or `false` to set the flag to `false`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Target

This method gets the target that contains the segment.

```
HRESULT Target(ICodeWarriorTarget** pval);
```

`pval`

On return, this parameter contains the address of a pointer to the target containing the segment.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorTarget" on page 706

# Targets Data Types

### ECodeWarriorBrowserGenerator

The ECodeWarriorBrowserGenerator enumeration provides constants to define the object that generates browser data for debugging.

**Table 24.1 ECodeWarriorBrowserGenerator Enumeration**

| Constant | Description |
|---|---|
| kNoBrowserData | Browser data is unavailable. |
| kCompiler | The compiler generates browser data. |
| kLanguageParser | The parser generates browser data. |

### ECodeWarriorTargetLinkOrderType

The ECodeWarriorTargetLinkOrderType enumeration provides constants that define the link order for a target.

**Table 24.2 ECodeWarriorTargetLinkOrderType Enumeration**

| Constant | Description |
|---|---|
| kCWSegment | Link the target by segment order. |
| kCWLinkOrder | Follow the link order specified in the IDE's **Link Order** tab. |
| kCWOverlay | Link the target by overlay order. |

### ECodeWarriorTargetOutputKind

The ECodeWarriorTargetOutputKind enumeration provides constants for what kind of output to produce when building a target.

**Table 24.3 ECodeWarriorTargetOutputKind Enumeration**

| Constant | Description |
|---|---|
| `kCWOutputNone` | Produce no output. |
| `kCWOutputFile` | Write the output to a file. |
| `kCWOutputDirectory` | Write the output to a directory. |

### ECodeWarriorWhichTargetOptions

The ECodeWarriorWhichTargetOptions enumeration provides constants for which target to use in various operations.

**Table 24.4 ECodeWarriorWhichTargetOptions Enumeration**

| Constant | Description |
|---|---|
| `kAllTargets` | Apply the operation to only the current target. |
| `kCurrentTarget` | Apply the operation to all targets. |

# 25

# Text

This chapter shows how to use the Text API to create and manage text operations in the CodeWarrior IDE.

This chapter contains the following sections:

- Text API Overview
- Text API Reference

## Text API Overview

The Text API lets plug-ins work with blocks of text in the CodeWarrior IDE.

## Text API Reference

This section describes the methods contained in the following interface:

- `ICodeWarriorTextEngine`

# ICodeWarriorTextEngine

This interface provides methods for working with text within the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface exposes the following methods:

| | |
|---|---|
| `get_HasSelection` | `get_TextLength` |
| `get_LineCount` | `GetTextForLineRange` |
| `GetLineForOffset` | `GetTextForOffsetRange` |
| `GetOffsetForLine` | `InsertText` |
| `get_SelectionEnd` | `put_SelectionEnd` |
| `get_SelectionLineEnd` | `put_SelectionLineEnd` |
| `get_SelectionLineStart` | `put_SelectionLineStart` |
| `get_SelectionStart` | `put_SelectionStart` |
| `get_SelectionText` | `put_SelectionText` |

## get_HasSelection

This method gets whether the user has selected a block of text.

```
get_HasSelection(
    VARIANT_BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if the user has highlighted a block of text or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_LineCount

This method gets the number of lines of text the user has selected.

```
get_LineCount(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many lines the user has selected.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetLineForOffset

This method gets the line number of a given character in the source file.

```
GetLineForOffset(
    int offset,
    int *line);
```

`offset`

The position from the top of the file for which to get a line number.

`line`

On return, this parameter contains a pointer to an integer indicating the line number of the specified character.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetOffsetForLine

This method gets the number of characters from the top of the source file to the specified line.

```
GetOffsetForLine(
    int line,
    int *offset);
```

`line`

The line number in question.

`offset`

On return, this parameter contains a pointer to an integer indicating the number of characters to the specified line.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SelectionEnd

This method gets the number of characters from the top of the file to the end of the user's selection.

```
get_SelectionEnd(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many characters from the top of the file to the end of the user's selection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SelectionLineEnd

This method gets how many lines from the top of the source file to the last line of the user's selection.

```
get_SelectionLineEnd(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many lines from the top of the file to the last line of the user's selection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SelectionLineStart

This method gets how many lines from the top of the source file to the first line of the user's selection.

```
get_SelectionLineStart(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many lines from the top of the file to the first line of the user's selection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SelectionStart

This method gets the number of characters from the top of the file to the start of the user's selection.

```
get_SelectionStart(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many characters from the top of the file to the start of the user's selection.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_SelectionText

This method gets the text the user has selected.

```
get_SelectionText(
    BSTR *pval);
```

`pval`

On return, this parameter contains the text the user has selected.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## get_TextLength

This method gets the number of characters the user has selected.

```
get_TextLength(
    int *pval);
```

`pval`

On return, this parameter contains a pointer to an integer that indicates how many characters the user has selected.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetTextForLineRange

This method gets the text within a specified line range.

```
GetTextForLineRange(
    int lineStart,
    int lineEnd,
    BSTR *pval);
```

`lineStart`

The first line of the block of text to get.

`lineEnd`

The last line of the block of text to get.

`pval`

On return, this parameter contains the text specified by the `lineStart` and `lineEnd` parameters.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetTextForOffsetRange

This method gets the text within a specified offset from the top of the source file.

```
GetTextForOffsetRange(
    int selStart,
    int selEnd,
    BSTR *pval);
```

`selStart`

The first character of the block of text to get.

`selEnd`

The last character of the block of text to get.

`pval`

On return, this parameter contains the text specified by the `selStart` and `selEnd` parameters.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## InsertText

This method inserts text at the current position within the source file. You can use put_SelectionStart to position the text insertion point.

```
InsertText(
    BSTR val);
```

`val`

The text to insert.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_SelectionEnd

This method moves the end of the selection block to the specified position, counted from the top of the source file.

```
put_SelectionEnd(
    int val);
```

`val`

The number of characters from the top of the file to the new end of the selection block.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_SelectionLineEnd

This method moves the end of the selection block to a specified line.

```
put_SelectionLineEnd(
    int val);
```

`val`

The line number of the new end of the selection block.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_SelectionLineStart

This method moves the start of the selection block to a specified line.

```
put_SelectionLineStart(
    int val);
```

`val`

The line number of the new start of the selection block.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_SelectionStart

This method moves the start of the selection block to the specified position, counted from the top of the source file.

```
put_SelectionStart(
    int val);
```

`val`

The number of characters from the top of the file to the new start of the selection block.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## put_SelectionText

This method replaces the current selection with a new block of text.

```
put_SelectionText(
    BSTR val);
```

`val`

The new block of text.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# 26

# Toolbar

This chapter shows how to use the Toolbar API to create and manage buttons in the CodeWarrior IDE toolbar.

This chapter contains the following sections:

- Toolbar API Overview
- Toolbar API Reference

## Toolbar API Overview

The Toolbar API is a set of interfaces that lets a plug-in create and manipulate buttons in the CodeWarrior IDE toolbar. The API uses the standard COM .

## Toolbar API Reference

This section describes the methods contained in the following interfaces:

- ICodeWarriorCustomToolbarItem
- ICodeWarriorPopupMenuToolbarItem
- ICodeWarriorToggleButtonToolbarItem
- ICodeWarriorToolbar
- ICodeWarriorToolbarInstanceCreationNotification
- ICodeWarriorToolbarItemHelp
- ICodeWarriorToolbarItemRegistry

These interfaces use the following data types:

- `SPopupMenuToolbarItem`
- `CWToolbarItemID`

- `CWToolbarIconRegistryInfo`
- `Item Flags`

# ICodeWarriorCustomToolbarItem

This interface exposes methods for creating, drawing, and getting information about a toolbar item.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `CreateItemControl` | `GetItemRepresentationWidth` |
| `DrawItemRepresentation` | `GetItemSizeInfo` |

## CreateItemControl

This method creates a new item to put in a toolbar.

```
virtual void* CreateItemControl(
    ICodeWarriorToolbar *inToolbar,
    void *hwndParent);
```

`inToolbar`

A pointer to the toolbar in which to create the new item.

`hwndParent`

A pointer to the window handle of the parent window.

Returns A pointer to the new item.

## DrawItemRepresentation

This method draws the current item in a specified specified graphics context.

```
virtual HRESULT DrawItemRepresentation(
    void *inGraphicsContext,
    LONG xPos,
    LONG yPos,
    LONG width,
    LONG height);
```

`inGraphicsContext`

A pointer to the graphics context in which to draw the item.

`xPos`

The X position at which to draw the item.

`yPos`

The Y position at which to draw the item.

`width`

The width of the item.

`height`

The height of the item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetItemRepresentationWidth

This method gets the width the current item occupies in a given graphics context.

```
virtual LONG GetItemRepresentationWidth(
    void *inGraphicsContext);
```

`inGraphicsContext`

A pointer to the graphics context.

Returns A long integer indicating the width the item occupies in the specified graphics context.

## GetItemSizeInfo

This method gets the size of the current item and whether the item can be resized.

```
virtual HRESULT GetItemSizeInfo(
    LONG &outMinWidth,
    BOOL &outResizable);
```

`outMinWidth`

On return, this parameter contains the address of a long integer indicating the size of the item.

`outResizable`

On return, this parameter contains the address of a boolean that is set to `true` if the item can be resized or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorPopupMenuToolbarItem

This interface provides methods for creating and working with popup menus on a toolbar.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `BuildPopupItemList` | `GetItemWidth` |
| `CleanupPopupItemList` | `GetSampleTextString` |
| `GetInitialState` | `HandlePopupSelection` |

## BuildPopupItemList

This method creates a list of items to put in a popup menu.

```
virtual HRESULT BuildPopupItemList(
    ICodeWarriorToolbar *inToolbar,
    void *inItemData,
    LONG inKeyboardModifiers,
    SPopupMenuToolbarItem *&outItems,
    LONG &outItemCount,
    LONG &outSelItem)
```

`inToolbar`

A pointer to the toolbar on which to place the popup menu.

`inItemData`

A pointer to the items to put on the menu.

`inKeyboardModifiers`

A pointer to the hotkeys what select items on the menu.

`outItems`

On return, this parameter contains a pointer to the address of the items in the menu.

`outItemCount`

On return, this parameter contains the address of a long indicating how many items are in the menu.

`outSelItem`

On return, this parameter contains the address of the selected item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also `"ICodeWarriorToolbar" on page 789`

"SPopupMenuToolbarItem" on page 801

## CleanupPopupItemList

This method resets a popup menu's item list.

```
virtual HRESULT CleanupPopupItemList(
    SPopupMenuToolbarItem *inItems,
    LONG inItemCount);
```

`inItems`

A pointer to the items to place in the menu.

`inItemCount`

The number of items the menu should have.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetInitialState

This method gets the initial state of the popup menu.

```
virtual HRESULT GetInitialState(
    ICodeWarriorToolbar *inToolbar,
    void *inItemData,
    STR &outCurrentStr,
    CWToolbarIconInfo& outIcon,
    BOOL &outIsEnabled)
```

`inToolbar`

A pointer to the toolbar on which the menu appears.

`inItemData`

A pointer to the items to put on the menu.

`outCurrentStr`

On return, this parameter contains the string value of the current item in the popup menu.

`outIcon`

On return, this parameter contains the address of information about the icon associated with the current item in the menu.

`outIsEnabled`

On return, this parameter contains the address of a boolean that is set to `true` if the menu is enabled or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorToolbar" on page 789

## GetItemWidth

This method gets the width of the current item.

```
virtual HRESULT GetItemWidth(LONG &outWidth);
```

`outWidth`

On return, this parameter contains the address of a long indicating the width of the current item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetSampleTextString

This method gets a sample text string from the current popup menu.

```
virtual HRESULT GetSampleTextString(
    BSTR &outSampleStr);
```

`outSampleStr`

On return, this parameter contains the sample string.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## HandlePopupSelection

The IDE calls this method to let the plug-in know to perform the action associated with a popup on a toolbar.

```
virtual HRESULT HandlePopupSelection(
    void *inItemData
    ICodeWarriorToolbar *inToolbar,
    LONG itemIndex,
    SPopupMenuToolbarItem *inItems,
    LONG inItemCount);
```

`inToolbar`

A pointer to the toolbar on which the popup resides.

`inItemData`

A pointer to the items on the toolbar

`itemIndex`

The item number of the item whose event you want to dispatch.

`inItems`

A pointer to the list of choices in the popup.

`inItemCount`

The number of the item (in the list specified by the `inItems` parameter) selected by the user.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorToggleButtonToolbarItem

This interface exposes a method that lets you determine if a toggle button on a toolbar has been pressed.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `GetInitialState` | `StateChanged` |

## GetInitialState

This method gets the initial state of a toggle button on a toolbar.

```
virtual HRESULT GetInitialState(
    ICodeWarriorToolbar *inToolbar,
    void *inItemData,
    CWToolbarItemID inItemID,
    BOOL& outInitialState,
    BOOL& outEnabled)
```

`inToolbar`

A pointer to the toolbar on which the toggle button appears.

`inItemData`

A pointer to the item data for the toggle button.

`outInitialState`

On return, this parameter contains the address of a boolean set to true if the toggle button is in its selected state (toggle is on) or false if it is in its deselected state (toggle is off).

`outEnabled`

On return, this parameter contains the address of a boolean set to true if the toggle button is enable or false if it is disabled.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## StateChanged

This method sets the state of a toggle button to on or off.

```
virtual HRESULT StateChanged(
    ICodeWarriorToolbar *inToolbar,
    CWToolbarItemID inItemID,
    BOOL inNewState);
```

`inToolbar`

A pointer to the toolbar on which the toggle button appears.

`inItemID`

The ID of

`inNewState`

Set this parameter to true to put the toggle button in its selected (on) state or false to set the toggle button in its deselected (off) state.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorToolbar

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `GetContainingDocument` | `SetToolbarItemEnabled` |
| `GetToolbarHeight` | `SetToolbarItemIcon` |
| `GetToolbarItemText` | `SetToolbarItemText` |
| `GetToolbarItemValue` | `SetToolbarItemValue` |
| `IsToolbarVisible` | `ShowToolbar` |
| `ResetToolbarItem` | |

## GetContainingDocument

This method gets the document that contains the toolbar.

```
virtual ICodeWarriorDocumentPrivate*
    GetContainingDocument(void);
```

Returns A pointer to the document that contains the toolbar.

See Also "ICodeWarriorDocument" on page 572

## GetToolbarHeight

This method gets the height of the toolbar.

```
virtual LONG GetToolbarHeight(void);
```

Returns The height of the toolbar.

## GetToolbarItemText

This method gets the text label for a specified toolbar item.

```
virtual HRESULT GetToolbarItemText(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    BSTR &outItemText);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item for which to get the text label.

`outItemText`

On return, this parameter contains the text of the toolbar item

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## GetToolbarItemValue

This method gets the value of a specified item in the toolbar

```
virtual HRESULT GetToolbarItemValue(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    LONG &outValue);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item for which to get the value.

`outValue`

On return, this parameter contains the address of a long indicating the value of the toolbar item specified by the `inItemID` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## IsToolbarVisible

This method gets whether the current toolbar is visible.

```
virtual BOOL IsToolbarVisible() = 0;
```

Returns `true` if the current toolbar is visible or `false` if not.

## ResetToolbarItem

This method resets a toolbar item to its original state.

```
virtual HRESULT ResetToolbarItem(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID);
```

`inPluginID`

TheGUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item to reset.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## SetToolbarItemEnabled

This method sets whether an item in the toolbar is enabled.

```
virtual HRESULT SetToolbarItemEnabled(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    BOOL inIsEnabled);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item to enable or disable.

`inIsEnabled`

Set this parameter to true to enable the toolbar item or false to disable it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## SetToolbarItemIcon

This method sets the icon for a specified item in the toolbar.

```
virtual HRESULT SetToolbarItemIcon(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
```

```
    const CWToolbarIconInfo inIconData);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item for which to set icon information.

`inIconData`

The icon data for the icon associated with the specified toolbar item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## SetToolbarItemText

This method sets the text label for a specified item in the toolbar.

```
virtual HRESULT SetToolbarItemText(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    BSTR inNewText);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item for which to set the text label.

`inNewText`

The text to which to set the text label of the item specified in the `inItemID` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## SetToolbarItemValue

This method sets the value of a specified item in the toolbar.

```
virtual HRESULT SetToolbarItemValue(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    LONG inValue);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The toolbar item for which to set the value.

`inValue`

The value to set for the toolbar item specified in `inItemID`.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## ShowToolbar

This method sets whether to show the current toolbar.

```
virtual HRESULT ShowToolbar(
    BOOL inShow) = 0;
```

`inShoW`

`true` to show the current toolbar is visible or `false` to not show it.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorToolbarInstanceCreationNotification

This interface provides methods for determining whether an item has been created or destroyed.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `ItemCreated` | `ItemDestroyed` |

## ItemCreated

This method lets you find out whether a new item has been created on a toolbar.

```
virtual HRESULT ItemCreated(
    ICodeWarriorToolbar *inToolbar,
    void *&outItemData);
```

`inToolbar`

A pointer to the toolbar on which to create a new item.

`outItemData`

On return, this parameter contains a pointer to a reference for the new item's information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ItemDestroyed

This method notifies you when an item has been removed from a toolbar.

```
virtual HRESULT ItemDestroyed(
    ICodeWarriorToolbar *inToolbar,
    void *inItemData);
```

`inToolbar`

A pointer to the toolbar you want to be

`inItemData`

A pointer to the destroyed item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorToolbarItemHelp

This interface provides a way to get the help text for a toolbar item.

### Inherited Interfaces

- `IUnknown`

The following method is available for your use:

- `GetHelpString`

---

## GetHelpString

This method gets the help string for a specified toolbar item.

```
virtual HRESULT GetHelpString(
    CWToolbarItemID itemID,
    BSTR &outHelpString);
```

`itemID`

The ID of the item for which to get the help string.

`outHelpString`

On return, this parameter contains the help string.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

# ICodeWarriorToolbarItemRegistry

This interface provides methods for creating registry items for toolbar items and icons.

### Inherited Interfaces

- `IUnknown`

The following methods are available for your use:

| | |
|---|---|
| `RegisterToolbarIcons` | `RegisterToolbarItem` |

## RegisterToolbarIcons

This method creates a registry entry a toolbar icon.

```
virtual HRESULT RegisterToolbarIcons(
    const CWPluginID inPluginID,
    const CWToolbarIconRegistryInfo &inIconData);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inIconData`

The address of the icon data to register.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also CWToolbarIconRegistryInfo

## RegisterToolbarItem

This method registers an item in a toolbar.

```
virtual HRESULT RegisterToolbarItem(
    const CWPluginID inPluginID,
    const CWToolbarItemID inItemID,
    const long inItemType,
    const CWToolbarIconInfo inIconData,
    const BSTR inItemName,
    IUnknown *itemHandler);
```

`inPluginID`

The GUID for the plug-in. Usually this is the class ID of the main class of your plug-in.

`inItemID`

The ID of the item to register.

`inItemType`

The Type of the item to register.

`inIconData`

The icon data associated with the item.

`inItemName`

The name of the item

`itemHandler`

A pointer to the handler for the item.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "CWToolbarItemID" on page 801

## Toolbar Data Types

### SPopupMenuToolbarItem

The following enumeration (from CodeWarriorToolbar.h) defines the toolbar items used in the CodeWarrior Toolbar API:

```
struct SPopupMenuToolbarItem
{
  unsigned long     itemFlags;
  BSTR              itemText;
  void              *userData;
  CWToolbarIconInfo itemIcon;
};
```

### CWToolbarItemID

The following enumeration (from CodeWarriorToolbar.h) defines the toolbar item IDs used in the CodeWarrior Toolbar API:

```
 typedef long CWToolbarItemID;
enum
{
  tbItemType_Separator,
  tbItemType_CommandButton,
  tbItemType_ToggleButton,
  tbItemType_CheckBox,
  tbItemType_PopupButton,
  tbItemType_PopupList, // Bevel button w/text on MacOS
                        // Combo box on Windows
  tbItemType_Custom
};
```

### CWToolbarIconRegistryInfo

The following structure (from CodeWarriorToolbar.h) defines the toolbar registry information used in the CodeWarrior Toolbar API:

```
#if defined(macintosh) || defined(_LATITUDE_)
typedef void* CWToolbarIconRegistryInfo;
#elif defined(WIN32)
typedef struct
{
  HBITMAP  hotImages;
  HBITMAP  normalImages;
  COLORREF maskColor;
} CWToolbarIconRegistryInfo;
#endif
```

### Item Flags

The following item flags are defined in CodeWarriorToolbar.h for use with the CodeWarrior toolbar API:

| | |
|---|---|
| CWPopup_Checked | 1 |
| CWPopup_Disabled | 2 |
| CWPopup_Underline | 4 |

# 27

# Version Control

This chapter shows how to use the Version Control API to work with the Version Control system in the CodeWarrior IDE.

This chapter contains the following sections:

- Version Control API Reference

## Version Control API Reference

This section describes the functions contained in the following interfaces:

- `ICodeWarriorVersionControl`
- `ICodeWarriorVCSState`
- `ICodeWarriorVCSFileStateListener`

The VCS interfaces use the following data types:

- `ECodeWarriorVCSCKIDState`
- `ECodeWarriorVCSDBState`
- `ECodeWarriorVCSFileLockState`

## ICodeWarriorVersionControl

This interface provides methods for the basic Version Control operations (checking in, checking out, and so on).

### Inherited Interfaces

- `IUnknown`

This interfaces exposes the following methods:

| | |
|---|---|
| `CheckIn` | `get_Name` |
| `CheckOut` | `GetVCSState` |
| `Connect` | `IsConnected` |
| `Disconnect` | `UndoCheckOut` |
| `Get` | `UnLock` |

## CheckIn

This method checks in the files in a specified collection of files.

```
virtual HRESULT CheckIn(
    IFileSpecCollection *fileSpecCollection);
```

`fileSpecCollection`

A pointer to a collection object containing the files to check in.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## CheckOut

This method checks out the files in a specified collection of files.

```
virtual HRESULT CheckOut(
```

```
    IFileSpecCollection *fileSpecCollection);
```

`fileSpecCollection`

A pointer to a collection object containing the files to check out.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## Connect

This method connects to the Version Control database.

```
virtual HRESULT Connect(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Disconnect

This method disconnects from the Version Control database.

```
virtual HRESULT Disconnect(void);
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Get

This method gets a collection of files from the Version Control database.

```
virtual HRESULT Get(
    IFileSpecCollection *fileSpecCollection);
```

`fileSpecCollection`

A pointer to a collection object containing the files toget.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## get_Name

This method gets the name of the Version Control system.

```
virtual HRESULT get_Name(
    BSTR *vcsName);
```

`vcsName`

On return, this parameter contains the name of the Version Control system.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetVCSState

This method gets the Version Control state for a specified file.

```
virtual HRESULT GetVCSState(
    IFileSpec *fileSpec,
    ICodeWarriorVCSState **vcsState);
```

`fileSpec`

A pointer to the file specification for which to get

`vcsState`

On return, this parameter contains the address of a pointer to the state of the file specified by the `fileSpec` parameter.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

## UnLock

This method unlocks the files in a collection of files.

```
virtual HRESULT UnLock(
    IFileSpecCollection *fileSpecCollection);
```

`fileSpecCollection`

A pointer to the collection of files to unlock.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

## IsConnected

This method gets whether a connection to the Version Control database. You might want to check the result of this method before calling `Connect` or `Disconnect`.

```
virtual HRESULT IsConnected(
    VARIANT_BOOL *pval);
```

`pval`

On return, this parameter contains a pointer to a boolean that is set to `true` if a connection to the Version Control database exists or `false` is no connection exists.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## UndoCheckOut

This method performs an UndoCheckOut operation (essentially, it restores files to their previous version) on a collection of files. Using it may cause changes to be lost.

```
virtual HRESULT UndoCheckOut(
    IFileSpecCollection *fileSpecCollection);
```

`fileSpecCollection`

A pointer to the collection of files on which to perform an UndoCheckOut operation.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "Using the Collections API" on page 487

# ICodeWarriorVCSState

This interface provides methods that let you can use to check on the state of the Version Control system.

### Inherited Interfaces

- `IUnknown`

### Methods

The interface exposes the following methods:

| | |
|---|---|
| get_CKIDState | get_DBState |
| get_FileLockState | |

## get_CKIDState

This method gets the Version Control state (checked in, checked out, not in the Version Control system, and so on) for the current file.

```
virtual HRESULT get_CKIDState(
    ECodeWarriorVCSCKIDState *type);
```

`type`

On return, this parameter contains a pointer to the state of the file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorVCSCKIDState" on page 812

## get_DBState

This method gets the state of the Version Control database.

```
virtual HRESULT get_DBState(
    ECodeWarriorVCSDBState *type);
```

`type`

On return, this parameter contains a pointer to the state of the database.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorVCSDBState" on page 813

## get_FileLockState

This method gets the lock state for the current file.

```
virtual HRESULT get_FileLockState(
    ECodeWarriorVCSFileLockState *type);
```

`type`

On return, this parameter contains a pointer to the lock state of the current file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ECodeWarriorVCSFileLockState" on page 813

# ICodeWarriorVCSFileStateListener

This interface provides a method that lets you monitor the state of a file in the Version Control system.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface exposes the following method:

- `StateChanged`

## StateChanged

This method sends a message all listeners of this interface when a file's VCS state has changed.

```
virtual HRESULT StateChanged(
    IFileSpec *fileSpec,
    ICodeWarriorVCSState *vcsState);
```

`fileSpec`

The file specification for the file whose state has changed.

`vcsState`

The new state of the file.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "IFileSpec" on page 599

"ICodeWarriorVCSState" on page 809

## VCS Data Types

The following data types are used with the VCS API:

- `ECodeWarriorVCSCKIDState`
- `ECodeWarriorVCSDBState`
- `ECodeWarriorVCSFileLockState`

### ECodeWarriorVCSCKIDState

This enumeration describes whether a  file is in the version control system and its state within the version control system.

**NOTE** CKID only has meaning on the Mac OS, so this enumeration has no meaning on any other operating system.

**Table 27.1 ECodeWarriorVCSCKIDState Enumeration**

| Constant | Description |
|---|---|
| `vcsCKIDNotChecked` | The file is not in the version control system. |
| `vcsNoCKID` | No CKID is available. |
| `vcsCKIDCheckedIn` | The file is in the version control system and is currently checked in. |
| `vcsCKIDCheckedOut` | The file is in the version control system and is currently checked out. |
| `vcsCKIDMRO` | The file is in the version control system and is marked read-only (MRO). |

### ECodeWarriorVCSDBState

This enumeration describes the state of a file in the version control database.

**Table 27.2 ECodeWarriorVCSDBState Enumeration**

| Constant | Description |
|---|---|
| `vcsDBNotChecked` | The file has not been checked for its VCS state. This state can appear in in a dialog box or message window if the version control system was unable to check the state of the file. |
| `vcsDBNotInWorkingDir` | The file is not in the working directory defined in the VCS Preference Panel. |
| `vcsDBNotInDatabase` | The file is not in the VCS database. |
| `vcsDBCheckedIn` | The file is in the VCS database and is checked in |
| `vcsDBCheckedOut` | The file is in the VCS database and is checked out. |

### ECodeWarriorVCSFileLockState

This enumeration describes the lock state of a file, from the perspective of the version control system.

**Table 27.3 ECodeWarriorVCSFileLockState Enumeration**

| Constant | Description |
|---|---|
| `vcsLockNotChecked` | This file is not in the version control system. |
| `vcsVolLocked` | The volume in which this file resides is locked (as is the file, by extension). |
| `vcsFileLocked` | The file is locked. |
| `vcsFileReadOnly` | The file is read-only. |

# 28

# Windows

This chapter shows how to use the Windows API to create and manage windows in the CodeWarrior IDE.

This chapter contains the following sections:

- Windows API Overview
- Using the Windows API
- Windows API Reference

## Windows API Overview

The Windows API is a set of interfaces that allows a plug-in to create and manipulate windows in the CodeWarrior IDE. The API uses the standard COM interfaces.

Windows are registered through standard commands (menus) and allow setting of standard window attributes.

Windows events are platform-specific and should be handled accordingly.

## Using the Windows API

You will need to create an `ICodeWarriorMenuManager` interface and a call to `QueryInterface()` to get this interface. Once you have created the window you will attach an event/command handler to the window. The latter is done when registering commands with `RegisterCommand()`.

# Windows API Reference

This section describes the methods contained in the following interfaces:

- `ICodeWarriorWindowManager`
- `ICodeWarriorWindow`
- `ICodeWarriorWindowEvents`

These interfaces use the following data type:

- `CWNativeXWindowPart`

# ICodeWarriorWindowManager

This interface is provided to allow plug-ins to create windows in the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Methods

This interface implements the following methods:

| | |
|---|---|
| `CenterWindow` | `GetIDEMainWindow` |
| `CreateCodeWarriorWindow` | `IsIDEInMDIMode` |

## CenterWindow

This method centers the selected window over the main window.

This method centers a specified window on the client screen or centers the main window if the IDE is in MDI mode.

```
virtual HRESULT CenterWindow(CWNativeWindowType
    window, BOOL fIsDialog, int reserved) = 0;
```

`window`

The CodeWarrior window you want to center on the screen.

`fIsDialog`

Set this flag to `true` if the window is a dialog or `false` otherwise.

`reserved`

Set this parameter to 0.

## CreateCodeWarriorWindow

Call this method to create a new window in the CodeWarrior IDE. You can use this interface to access window methods. You will also need an event handler for your window.

```
virtual ICodeWarriorWindow*
    CreateCodeWarriorWindow(
    const CWPluginID inPluginID,
    ULONG inAttributes) = 0;
```

`inPluginID`

The ID for the plug-in.

`inAttributes`

Attributes that describe the type of window you want. Multiple attributes can be set for any window. The following attributes are allowed:

Attributes for all platforms:

| | |
|---|---|
| `CWWindow_CanClose` | The window has a close box |
| `CWWindow_CanResize` | The window is resizable |
| `CWWindow_Floating` | The window floats above all other IDE windows |
| `CWWindow_PutInOpenWindowsMenu` | The window name is put in the available windows in the Window menu. |
| `CWWindow_Modal` | The window is modal |

Mac OS specific attributes:

| | |
|---|---|
| `CWWindow_GetIdleTime` | The window event handler's Idle method will be called |
| `CWWindow_GetSelectClick` | `true` if a click both brings a window forward and affects its content or `false` if a click only brings a window forward. This setting works only on the Mac OS. |
| `CWWindow_DelaySelect` | `true` to bring a window forward on a mouse-up event or `false` to bring a window forward on a mouse-down event. This setting works only on the Mac OS. |

Returns A pointer to an `ICodeWarriorWindow` object.

See Also "ICodeWarriorWindow" on page 821

## IsIDEInMDIMode

This method is used to determine if the IDE is in Multiple Document Interface (MDI) mode.

```
virtual BOOL IsIDEInMDIMode()
```

Returns `true` if window is in IDE MDI Mode or `false` otherwise. If this method returns `false`, the IDE is in Floating Document Interface (FDI) mode.

## GetIDEMainWindow

This method gets a window handle for the IDE's main window.

**NOTE** This method works only on Win32.

```
virtual HRESULT GetIDEMainWindow(
    HWND *mainWnd)
```

`mainWnd`

On return, this parameter contains a pointer to the IDE's main window.

Returns `S_OK if this method call succeeded or an appropriate error if it failed.`

## ICodeWarriorWindow

This interface is provided to allow plug-ins to manipulate windows in the CodeWarrior IDE.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods are available for your use:

| | |
|---|---|
| `AssociateWindowWithProject` | `SetBackBrushes` |
| `CreateToolbar` | `SetCodeWarriorWindowInitialBounds` |
| `DestroyCodeWarriorWindow` | `SetCodeWarriorWindowMinMaxSize` |
| `GetCodeWarriorWindowSizeLocation` | `SetCodeWarriorWindowTitle` |
| `GetNativeWindowReference` | `SetDialogColors` |
| `GetNativeXWindowReference` | `SetEventHandler` |
| `GetWindowToolbar` | `SetMaximumSleepTime` |
| `HasAttribute` | `SelectCodeWarriorWindow` |
| `MoveCodeWarriorWindow` | `ShowCodeWarriorWindow` |
| `PutBehind` | `UpdatePort` |
| `ReorderCodeWarriorWindow` | |

**NOTE** The `PutBehind`, `ReorderCodeWarriorWindow`, `SetBackBrushes`, `SetDialogColors`, and `SetMaximumSleepTime` methods work only on the Mac OS. The `GetNativeXWindowReference` method works only on unix-based systems.

## AssociateWindowWithProject

This method associates a window with a project. If the window is in front and the user performs actions (for example, Compile) related to a project, the project associated with the window becomes associated with that window.

```
virtual HRESULT AssociateWindowWithProject(
    IUnknown *inProjectObject)
```

`inProjectObject`

The project your window is to be associated with.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## CreateToolbar

Creates a new toolbar in the window. The IDE will call the event handler's `GetDefulatToobbarItems()`.

```
virtual HRESULT CreateToolbar(
    BSTR inToolbarTitle,
    ICodeWarriorToolbar *&outToolbar) = 0;
```

`inToolbarTitle`

The title of the new toolbar.

`outToolbar`

The IDE will provide a pointer to the toolbar interface.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "ICodeWarriorToolbar" on page 789

## DestroyCodeWarriorWindow

This method closes the current window.

```
virtual HRESULT DestroyCodeWarriorWindow()
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetCodeWarriorWindowSizeLocation

This method gets the size and location of the window.

```
virtual HRESULT GetCodeWarriorWindowSizeLocation(
    SHORT &xPos,
    SHORT &yPos,
    SHORT &width,
    SHORT &height) = 0;
```

`xPos`

The horizontal position of the upper left-hand corner of the window.

`yPos`

The vertical position of the upper left-hand corner of the window.

`width`

The width of the window.

`height`

The height of the window.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## GetNativeWindowReference

This method obtains the window reference for the window, according to the platform the plug-in is running on. Once you have this reference, you can use native OS methods to draw whatever you need.

```
virtual CWNativeWindowType
    GetNativeWindowReference()
```

Returns A value of type `CWNativeWindowType`, which is either a Windows `HWND` structure, or a Mac OS `WindowPtr` structure, depending on the target platform.

## GetNativeXWindowReference

This method gets a native reference to a window on Unix-based operating systems.

**NOTE** This method works only on Unix-based operating systems.

```
virtual void * GetNativeXWindowReference(
    CWNativeXWindowPart part) = 0;
```

`part`

A value within the range specified by the CWNativeXWindowPart enumeration.

Returns A pointer to the window reference.

See Also "CWNativeXWindowPart" on page 840

## GetWindowToolbar

This method gets the toolbar associated with the current window, if any.

```
virtual ICodeWarriorToolbar*
    GetWindowToolbar()
```

Returns A pointer to an `ICodeWarriorToolbar` interface.

See Also `"ICodeWarriorToolbar" on page 789`

## HasAttribute

This method discovers whether the current window has a specified attribute.

```
virtual BOOL HasAttribute(
    ULONG inAttribute)
```

`inAttribute`

An unsigned long integer indicating the attribute for which to check..

Returns `true` if the current window has the specified attribute or `false` if not.

## MoveCodeWarriorWindow

This method changes the size and location of the window.

```
virtual HRESULT MoveCodeWarriorWindow(
    SHORT xPos,
    SHORT yPos,
    SHORT width,
    SHORT height,
```

```
    BOOL refresh) = 0;
```

`xPos`

The horizontal position of the upper left-hand corner of the window.

`yPos`

The vertical position of the upper left-hand corner of the window.

`width`

The width of the window.

`height`

The height of the window.

`refresh`

Set this parameter to `true` to generate an update event for the content of the window. Set it to `false` to leave the content of the window unchanged.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## PutBehind

This method places the current window behind another window.

**NOTE** This method works only on the Mac OS and Windows.

```
virtual HRESULT PutBehind(
    CWNativeWindowType inBehindWindow);
```

`inBehindWindow`

The window to place the current window behind. This parameter must be either a Windows `HWND` structure or a Mac OS `WindowPtr` structure, depending on the target

platform.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ReorderCodeWarriorWindow

This method reorders the current window.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT ReorderCodeWarriorWindow(
    ULONG reorderType) = 0;
```

`reorderType`

An unsigned long integer indicating the type of reordering operation to perform. See the Mac programmer's documentation for more detail.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetBackBrushes

This method sets the back brush colors for windows for appearance-savvy versions of the Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT SetBackBrushes(
    ThemeBrush inActiveBackBrush,
    ThemeBrush inInactiveBackBrush)
```

`inActiveBackBrush`

Describes the appearance of a window while it is in the

background. See the Mac Toolbox `ThemeBrush` constants for more information.

`inInactiveBackBrush`

Describes the state of the window when it is in front. See the Mac Toolbox `ThemeBrush` constants for more information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetCodeWarriorWindowInitialBounds

This method sets the initial size and position of the window when it is displayed.

```
virtual HRESULT SetCodeWarriorWindowInitialBounds(
    SHORT xPos,
    SHORT yPos,
    SHORT width,
    SHORT height)
```

`xPos`

The horizontal position of the window, in pixels.

`yPos`

The vertical position of the window, in pixels.

`width`

The width of the window, in pixels.

`height`

The height of the window, in pixels.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetCodeWarriorWindowMinMaxSize

This method sets the minimum and maximum allowable sizes for a window. Users will not be able to resize the window smaller than the minimum size or larger than the maximum size.

```
virtual HRESULT SetCodeWarriorWindowMinMaxSize(
    SHORT minWidth,
    SHORT maxWidth,
    SHORT minHeight,
    SHORT maxHeight) = 0;
```

`minWidth`

The minimum width of the window, in pixels.

`maxWidth`

The maximum width of the window, in pixels.

`minHeight`

The minimum height of the window, in pixels.

`maxHeight`

The maximum height of the window, in pixels.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetCodeWarriorWindowTitle

This method sets the title of the window.

```
virtual HRESULT SetCodeWarriorWindowTitle(
    BSTR newTitle)
```

`newTitle`

The new window title.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetDialogColors

This method sets the dialog colors for windows for non-appearance-savvy versions of the Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT SetDialogColors()
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetEventHandler

This method sets the event handler for the window. The event handler is called for each event the window receives.

```
virtual HRESULT SetEventHandler(
    IUnknown *inEventHandler)
```

`*inEventHandler`

The event handler for the window. This should be an existing `ICodeWarriorWindowEvents` object or existing `ICodeWarriorCommandHandler` object.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SetMaximumSleepTime

This method sets the maximum sleep time for the current window.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT SetMaximumSleepTime(
    ULONG inSleepTime) = 0;
```

`inSleepTime`

An unsigned long specifying the maximum sleep time for the current window. The unit of time is a Mac OS "tick" (1/60 of a second).

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## SelectCodeWarriorWindow

This method selects the window and brings it to the front, if necessary.

```
virtual HRESULT SelectCodeWarriorWindow()
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ShowCodeWarriorWindow

This method shows or hides the window.

```
virtual HRESULT ShowCodeWarriorWindow(BOOL
    visible) = 0;
```

`visible`

Set this field to `true` if you want the IDE to make the window visible or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## UpdatePort

This method immediately updates the contents of the window that would normally be updated during the window's next update event.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT UpdatePort() = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ICodeWarriorWindowEvents

This interface is provided to allow plug-ins to respond to window events.

### Inherited Interfaces

- `IUnknown`

### Methods

The following methods apply to windows on all platforms:

| | |
|---|---|
| `ActivateEvent` | `OkToClose` |
| `AdjustCursor` | `PreBeginUpdate` |
| `DeactivateEvent` | `ToolbarSizeChange` |
| `GetDefaultToolbarItems` | `UpdateEvent` |
| `Idle` | `WindowDestroyed` |
| `KeyDownEvent` | `WindowResizedBy` |
| `MouseDownEvent` | |

**NOTE** The `AdjustCursor`, `Idle`, `KeyDownEvent`, `MouseDownEvent`, `PreBeginUpdate`, `UpdateEvent`, and `WindowResizedBy` methods work only on the Mac OS.

## ActivateEvent

This method activates window events.

```
virtual HRESULT ActivateEvent()
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also "DeactivateEvent" on page 834

## AdjustCursor

The method adjusts a cursor over a window on Mac OS.

```
virtual HRESULT   AdjustCursor(
    Point inPortPt,
    const EventRecord&inMacEvent)
```

`inPortPt`

Specifies the location of the mouse in a window.

`EventRecord`

Specifies the event that occured in the window. See the Mac OS Toolbox `EventRecord` structure for more information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## DeactivateEvent

This method deactivates window events.

```
virtual HRESULT DeactivateEvent()
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

See Also ActivateEvent

## GetDefaultToolbarItems

This method gets the default toolbar items for a window.

```
virtual HRESULT GetDefaultToolbarItems(
    const SDefaultToolbarItemInfo *&items,
    long &itemCount) = 0;
```

`items`

The registered toolbar items.

`itemCount`

The number of toolbar items.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Idle

This method handles idle events for a window on the Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT Idle(
    const EventRecord &idleEvent);
```

`idleEvent`

A Mac OS event record. See the Mac OS Toolbox `EventRecord` structure for more information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## KeyDownEvent

This method handles key down events for window on Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual BOOL KeyDownEvent(
    const EventRecord &keyEvent)
```

`keyEvent`

This field indicates the key event that was recieved by the window. See the Mac OS Toolbox `EventRecord` structure for more information.

Returns `true` if the event was handled successfully, otherwise `false`.

## MouseDownEvent

This method handles a mouse down event within a window on the Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT STDMETHODCALLTYPE
    MouseDownEvent(const EventRecord &mouseEvent,
    BOOL &delaySelect)
```

`mouseEvent`

This field indicates the type of mouse event received within a window. See the Mac OS Toolbox `EventRecord` structure for more information.

`delaySelect`

`true` to have the window be selected after a mouse-down event or `false` if not.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## OkToClose

The CodeWarrior IDE calls this method to determine whether it is OK to close the window. This method can be used to determine if changes should be saved or not when closing a window.

```
virtual BOOL OkToClose()
```

Returns `true` if it is OK to close the window or `false` if not.

## PreBeginUpdate

The IDE calls this method to inform a plug-in that the IDE is about to update the window.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT PreBeginUpdate() = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## ToolbarSizeChange

This method changes the height of the toolbar for the window.

```
virtual HRESULT ToolbarSizeChange(
    SHORT inNewHeight) = 0;
```

`inNewHeight`

The new height for the toolbar.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## UpdateEvent

This method update an event in a window on the Mac OS.

**NOTE** This method works only on the Mac OS.

```
virtual HRESULT UpdateEvent(
    const RgnHandle updateRgn) = 0;
```

`updateRgn`

A window area specified by the `updateRgn` field. See the Mac OS Toolbox `RgnHandle` structure for more information.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## WindowDestroyed

The CodeWarrior IDE calls this method when the window handle structure has been destroyed. General cleanup and memory release is done within this mehtod.

```
virtual HRESULT WindowDestroyed() = 0;
```

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## WindowResizedBy

This method specifies how much a window's dimension has changed after a resize.

```
virtual HRESULT WindowResizedBy(
    SHORT inDeltaH,
    SHORT inDeltaV)
```

`inDeltaH`

The change in horizontal direction from ititial state to final state.

`inDeltaV`

The change in vertical direction from initial state to final state.

Returns S_OK if this method call succeeded or an appropriate error if it failed.

## Windows Data Types

The following data types are used with the Windows API:

- CWNativeXWindowPart

### CWNativeXWindowPart

This enumeration describes the type of a user tree.

**Table 28.1 CWNativeXWindowPart Enumeration**

| Constant | Description |
|---|---|
| CW_X_WINDOW | The window. |
| CW_X_DRAWABLE | The drawable part of the window. |

# A

# CodeWarrior IDE Interface Definition Language (IDL)

This appendix contains the IDL for the CodeWarrior COM API.

```
// Generated .IDL file (by the OLE/COM Object Viewer)
//
// typelib filename: IDE.EXE
// Forward declare all types defined in this typelib
interface ICodeWarriorProject;
interface IFileSpec;
interface ICodeWarriorDesignCollection;
interface ICodeWarriorDesign;
interface ICodeWarriorTargetCollection;
interface ICodeWarriorTarget;
interface ICodeWarriorSymbolContainer;
interface ICodeWarriorClassCollection;
interface ICodeWarriorClass;
interface ICodeWarriorSymbol;
interface ICodeWarriorSourceContext;
interface ICodeWarriorBaseClassCollection;
interface ICodeWarriorBaseClassInfo;
interface ICodeWarriorDataMemberCollection;
interface ICodeWarriorDataMember;
interface ICodeWarriorMethodCollection;
interface ICodeWarriorMethod;
interface ICodeWarriorProjectFileCollection;
interface ICodeWarriorProjectFile;
interface ICodeWarriorVCSState;
interface ICodeWarriorTargetFileCollection;
interface ICodeWarriorTargetFile;
interface ICodeWarriorAccessPaths;
interface ICodeWarriorAccessPathCollection;
```

```
interface ICodeWarriorAccessPath;
interface ICodeWarriorUserTree;
interface ICodeWarriorUserTreeCollection;
interface ICodeWarriorSubTargetCollection;
interface ICodeWarriorSubTarget;
interface IFileSpecCollection;
interface IBSTRCollection;
interface IStream;
interface ISequentialStream;
interface ICodeWarriorBuildMessages;
interface ICodeWarriorMessageCollection;
interface ICodeWarriorMessage;
interface ICodeWarriorTargetOutput;
interface ICodeWarriorApp;
interface ICodeWarriorProjectCollection;
interface ICodeWarriorCreatableItemCollection;
interface ICodeWarriorCreatableItem;
interface ICodeWarriorDocumentCollection;
interface ICodeWarriorDocument;
interface ICodeWarriorProjectDocument;
interface ICodeWarriorVersionControl;
interface ICodeWarriorTextDocument;
interface ICodeWarriorTextEngine;
interface ICodeWarriorComponent;
interface ICodeWarriorComponentPropertyCollection;
interface ICodeWarriorComponentProperty;
interface ICodeWarriorComponentEventSetCollection;
interface ICodeWarriorComponentEventSet;
interface ICodeWarriorComponentEventCollection;
interface ICodeWarriorComponentEvent;
interface ICodeWarriorSymbolCollection;
interface ICodeWarriorComponentCollection;
interface ICodeWarriorAppEvents;
interface ICodeWarriorProjectEvents;
interface ICodeWarriorDesignEvents;
interface ICodeWarriorDesignAttachment;
interface ICodeWarriorCreateProjectItem;
interface ICodeWarriorCreateFileItem;
interface ICodeWarriorCreateObjectItem;
interface ICodeWarriorVCSFileStateListener;
interface ICodeWarriorProjectAssociation;
interface ICodeWarriorErrorInfo;
```

```
[
  uuid(5EC306A0-283D-11D0-989C-0080C74ADF8C),
  version(1.1),
  helpstring("Metrowerks CodeWarrior IDE")
]
library CodeWarrior
{
    // TLib : OLE Automation : {00020430-0000-0000-C000-
000000000046}
    importlib("stdole2.tlb");

    [
      odl,
      uuid(110C62F0-CD3C-11D0-846D-00805F3E911D),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProject : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000009), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
        [id(0x00000067), propget]
        HRESULT _stdcall Designs([out, retval]
ICodeWarriorDesignCollection** pval);
        [id(0x00000068), propget]
        HRESULT _stdcall Targets([out, retval]
ICodeWarriorTargetCollection** pval);
        [id(0x00000005), propget]
        HRESULT _stdcall Application([out, retval]
ICodeWarriorApp** val);
        [id(0x00000070), propget]
        HRESULT _stdcall IsVisible([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000075), propget]
        HRESULT _stdcall VersionControl([out, retval]
ICodeWarriorVersionControl** VersionControl);
        [id(0x00000064)]
        HRESULT _stdcall Close();
        [id(0x00000077)]
        HRESULT _stdcall Export([in] BSTR filePath);
```

```
        [id(0x00000078)]
        HRESULT _stdcall ExportByFileSpec([in] IFileSpec*
FileSpec);
        [id(0x00000065)]
        HRESULT _stdcall RemoveBinaries();
        [id(0x00000066)]
        HRESULT _stdcall SetCurrentTarget([in] BSTR targetName);
        [id(0x00000069)]
        HRESULT _stdcall CreateDesign(
                        [in] BSTR designName,
                      [out, retval] ICodeWarriorDesign** Design);
        [id(0x0000006a)]
        HRESULT _stdcall CreateTarget(
                        [in] BSTR targetName,
                        [in] BSTR linkerName,
                        [in] ICodeWarriorDesign* Design,
                      [out, retval] ICodeWarriorTarget** Target);
        [id(0x0000006b)]
        HRESULT _stdcall RemoveTarget([in] ICodeWarriorTarget*
Target);
        [id(0x0000006c)]
        HRESULT _stdcall FindDesign(
                        [in] BSTR Name,
                      [out, retval] ICodeWarriorDesign** Design);
        [id(0x0000006d)]
        HRESULT _stdcall FindTarget(
                        [in] BSTR Name,
                      [out, retval] ICodeWarriorTarget** Target);
        [id(0x0000006e)]
        HRESULT _stdcall CloneTarget(
                        [in] ICodeWarriorTarget* srcTarget,
                        [in] ICodeWarriorProject* srcProject,
                        [in] BSTR inDestTargetName,
                        [in] VARIANT_BOOL fCopyFileList,
                        [in] VARIANT_BOOL fCopyTargetSettings,
                        [in] ICodeWarriorDesign* Design,
                        [out] ICodeWarriorTarget** outTarget);
        [id(0x0000006f)]
        HRESULT _stdcall GetCurrentTarget([out, retval]
ICodeWarriorTarget** Target);
        [id(0x00000071)]
        HRESULT _stdcall Build([out, retval] long* cookie);
```

```
        [id(0x00000072)]
        HRESULT _stdcall RemoveDesignByName(
                        [in] BSTR designName,
                      [in] VARIANT_BOOL fDeleteContainedDesigns);
        [id(0x00000073)]
        HRESULT _stdcall RemoveDesign(
                        [in] ICodeWarriorDesign* Design,
                      [in] VARIANT_BOOL fDeleteContainedDesigns);
        [id(0x00000074)]
        HRESULT _stdcall ReportMessage(
                        [in] EReportMsgType msgType,
                        [in] BSTR message);
        [id(0x00000076)]
        HRESULT _stdcall SynchronizeStatus();
        [id(0x00000079)]
        HRESULT _stdcall BuildAndWaitToComplete([out, retval]
ICodeWarriorBuildMessages** buildMessages);
        [id(0x0000007a)]
        HRESULT _stdcall GetNamedPluginData(
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn,
                        [out] IStream** pluginData);
        [id(0x0000007b)]
        HRESULT _stdcall SetNamedPluginData(
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn,
                        [in] IStream* pluginData);
        [id(0x0000007c)]
        HRESULT _stdcall RemoveNamedPluginData(
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn);
    };

    [
      odl,
      uuid(229924D2-FA29-11D1-B330-0060081C5489),
      dual,
      oleautomation
    ]
    interface IFileSpec : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
```

```
        [id(0x00000001), propput]
        HRESULT _stdcall Name([in] BSTR pval);
        [id(0x00000064), propget]
        HRESULT _stdcall FullPath([out, retval] BSTR* path);
        [id(0x00000064), propput]
        HRESULT _stdcall FullPath([in] BSTR path);
        [id(0x00000065)]
        HRESULT _stdcall Copy([in] IFileSpec* inSpec);
        [id(0x00000066)]
        HRESULT _stdcall Clone([out] IFileSpec** pval);
    };

    [
      odl,
      uuid(C694D140-95C4-11D1-B31B-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorDesignCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorDesign** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorDesign* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorDesign* pval);
    };

    [
      odl,
      uuid(4B0EF0A0-95C5-11D1-B31B-0060081C5489),
      dual,
      oleautomation
    ]
```

```
    interface ICodeWarriorDesign : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000001), propput]
        HRESULT _stdcall Name([in] BSTR pval);
        [id(0x00000064), propget]
       HRESULT _stdcall DataModel([out, retval] IUnknown** pval);
        [id(0x00000065), propget]
        HRESULT _stdcall Project([out, retval]
ICodeWarriorProject** pval);
        [id(0x00000066), propget]
        HRESULT _stdcall Targets([out, retval]
ICodeWarriorTargetCollection** pval);
        [id(0x0000006b), propget]
        HRESULT _stdcall BrowserDB([out, retval]
ICodeWarriorSymbolContainer** pval);
        [id(0x00000067)]
        HRESULT _stdcall AddFile(
                        [in] BSTR path,
                        [in] BSTR groupPath,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x00000068)]
        HRESULT _stdcall AddFileByFileSpec(
                        [in] IFileSpec* FileSpec,
                        [in] BSTR groupPath,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x0000006e)]
        HRESULT _stdcall FindAndAddFile(
                        [in] BSTR path,
                        [in] BSTR groupPath,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x00000069)]
        HRESULT _stdcall ContainsTarget(ICodeWarriorTarget*
Target);
        [id(0x0000006a)]
        HRESULT _stdcall
RemoveTargetFromDesign(ICodeWarriorTarget* Target);
        [id(0x0000006f)]
        HRESULT _stdcall CompileFiles(
```

```
                        [in] ICodeWarriorProjectFileCollection*
collection,
                        [out, retval] long* cookie);
        [id(0x0000006c)]
        HRESULT _stdcall AddAttachment(GUID* attachmentCLSID);
        [id(0x0000006d)]
        HRESULT _stdcall RemoveAttachment(GUID* attachmentCLSID);
    };

    [
      odl,
      uuid(5976F990-F99B-11D1-B330-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTargetCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorTarget** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorTarget* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorTarget* pval);
    };

    [
      odl,
      uuid(F094A000-F996-11D1-B330-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTarget : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
```

```
        [id(0x00000001), propput]
        HRESULT _stdcall Name([in] BSTR pval);
        [id(0x00000064), propget]
        HRESULT _stdcall Project([out, retval]
ICodeWarriorProject** Project);
        [id(0x00000065), propget]
       HRESULT _stdcall Design([out, retval] ICodeWarriorDesign**
Design);
        [id(0x0000007a), propget]
        HRESULT _stdcall BrowserEnabled([out, retval]
VARIANT_BOOL* fEnabled);
        [id(0x0000007a), propput]
        HRESULT _stdcall BrowserEnabled([in] VARIANT_BOOL
fEnabled);
        [id(0x00000066), propget]
        HRESULT _stdcall BrowserDB([out, retval]
ICodeWarriorSymbolContainer** catalog);
        [id(0x00000070), propget]
        HRESULT _stdcall ProjectFileCollection([out, retval]
ICodeWarriorProjectFileCollection** ProjectFileCollection);
        [id(0x00000069), propget]
        HRESULT _stdcall TargetFileCollection([out, retval]
ICodeWarriorTargetFileCollection** TargetFileCollection);
        [id(0x0000006a), propget]
        HRESULT _stdcall AccessPaths([out, retval]
ICodeWarriorAccessPaths** pval);
        [id(0x0000006b), propget]
        HRESULT _stdcall UserTrees([out, retval]
ICodeWarriorUserTreeCollection** pval);
        [id(0x00000072), propget]
        HRESULT _stdcall SubTargets([out, retval]
ICodeWarriorSubTargetCollection** subTargetList);
        [id(0x00000067)]
        HRESULT _stdcall AddFile(
                        [in] BSTR path,
                        [in] BSTR groupPath,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x00000068)]
        HRESULT _stdcall AddFileByFileSpec(
                        [in] IFileSpec* FileSpec,
                        [in] BSTR groupPath,
```

```
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x0000007d)]
        HRESULT _stdcall AddFileByFileSpecCollection(
                        [in] IFileSpecCollection* inCollection,
                        [in] BSTR groupPath,
                        [out] int* pFilesAdded);
        [id(0x0000006d)]
        HRESULT _stdcall FindAndAddFile(
                        [in] BSTR path,
                        [in] BSTR groupPath,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x0000007c)]
        HRESULT _stdcall FindAndAddFileByCollection(
                        [in] IBSTRCollection* inCollection,
                        [in] BSTR groupPath,
                        [out] int* pFilesAdded);
        [id(0x0000006c)]
        HRESULT _stdcall AddSubTarget(
                        [in] ICodeWarriorTarget* Target,
                        [in] VARIANT_BOOL LinkAgainstOutput);
        [id(0x0000006e)]
        HRESULT _stdcall SetupDebugging([in] VARIANT_BOOL
inTurnOn);
        [id(0x0000006f)]
        HRESULT _stdcall CompileFiles(
                        [in] ICodeWarriorProjectFileCollection*
collection,
                        [out, retval] long* cookie);
        [id(0x00000071)]
        HRESULT _stdcall GetTargetFileForProjectFile(
                      [in] ICodeWarriorProjectFile* projectFile,
                        [out, retval] ICodeWarriorTargetFile**
targetFile);
        [id(0x00000073)]
        HRESULT _stdcall GetProjectFileFromFileSpec(
                        [in] IFileSpec* FileSpec,
                        [out, retval] ICodeWarriorProjectFile**
projectFile);
        [id(0x00000074)]
        HRESULT _stdcall GetNamedPluginData(
```

```
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn,
                        [out] IStream** pluginData);
        [id(0x00000075)]
        HRESULT _stdcall SetNamedPluginData(
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn,
                        [in] IStream* pluginData);
        [id(0x00000077)]
        HRESULT _stdcall RemoveNamedPluginData(
                        [in] BSTR resourceName,
                        [in] EPluginDataStorageLoc storeIn);
        [id(0x00000076)]
        HRESULT _stdcall Build([out, retval] long* cookie);
        [id(0x00000078)]
        HRESULT _stdcall SynchronizeStatus();
        [id(0x00000079)]
        HRESULT _stdcall RemoveObjectCode([in] VARIANT_BOOL
deleteDataFiles);
        [id(0x0000007b)]
        HRESULT _stdcall BuildAndWaitToComplete([out, retval]
ICodeWarriorBuildMessages** buildMessages);
        [id(0x0000007e)]
        HRESULT _stdcall GetTargetOutput([out, retval]
ICodeWarriorTargetOutput** targetOutput);
        [id(0x0000007f)]
        HRESULT _stdcall CompileFilesAndWaitToComplete(
                        [in] ICodeWarriorProjectFileCollection*
collection,
                       [out, retval] ICodeWarriorBuildMessages**
buildMessages);
    };

    [
      odl,
      uuid(F385EEA1-048E-11D2-80C4-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorSymbolContainer : IDispatch {
        [id(0x00000064), propget]
```

```
       HRESULT _stdcall Target([out, retval] ICodeWarriorTarget**
pval);
        [id(0x00000065), propget]
        HRESULT _stdcall ClassList([out, retval]
ICodeWarriorClassCollection** pval);
        [id(0x00000066)]
        HRESULT _stdcall FindClass(
                        [in] BSTR inClassName,
                        [out, retval] ICodeWarriorClass**
outClass);
        [id(0x00000067)]
        HRESULT _stdcall FindClassInFile(
                        [in] BSTR inClassName,
                        [in] IFileSpec* inSpec,
                        [out, retval] ICodeWarriorClass**
outClass);
        [id(0x00000068)]
        HRESULT _stdcall AddComponentAttachment([in] GUID*
attachmentCLSID);
        [id(0x00000069)]
        HRESULT _stdcall RemoveComponentAttachment([in] GUID*
attachmentCLSID);
        [id(0x0000006a)]
        HRESULT _stdcall ShowSymbolDeclaration(
                        [in] ICodeWarriorSymbol* inSymbol,
                        [in] long inForEditing,
                        [in] ECodeWarriorShowSymbolLocation
inLocation);
        [id(0x0000006b)]
        HRESULT _stdcall ShowSymbolDefinition(
                        [in] ICodeWarriorSymbol* inSymbol,
                        [in] long inForEditing,
                        [in] ECodeWarriorShowSymbolLocation
inLocation);
    };

    [
      odl,
      uuid(E98527B0-258E-11D2-80E6-006008C3EEF1),
      dual,
      oleautomation
    ]
```

```
    interface ICodeWarriorClassCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorClass** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorClass* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorClass* pval);
    };

    [
      odl,
      uuid(2F48B6D2-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorClass : ICodeWarriorSymbol {
        [id(0x000000c8), propget]
        HRESULT _stdcall BaseClasses([out, retval]
ICodeWarriorBaseClassCollection** pval);
        [id(0x000000c9), propget]
        HRESULT _stdcall SubClasses([out, retval]
ICodeWarriorClassCollection** pval);
        [id(0x000000ca), propget]
        HRESULT _stdcall IsPublic([out, retval] long* pval);
        [id(0x000000cb), propget]
        HRESULT _stdcall IsAbstract([out, retval] long* pval);
        [id(0x000000cc), propget]
        HRESULT _stdcall IsFinal([out, retval] long* pval);
        [id(0x000000cd)]
        HRESULT _stdcall GetDataMembers(
                        [in] long inIncludeInherited,
                        [out, retval]
ICodeWarriorDataMemberCollection** pval);
        [id(0x000000ce)]
        HRESULT _stdcall GetDataMembersWithAccess(
                        [in] long inIncludeInherited,
```

```
                        [in] ECodeWarriorAccess inAccessMask,
                        [out, retval]
ICodeWarriorDataMemberCollection** pval);
        [id(0x000000cf)]
        HRESULT _stdcall FindDataMemberByName(
                        [in] BSTR inName,
                        [out, retval] ICodeWarriorDataMember**
pval);
        [id(0x000000d0)]
        HRESULT _stdcall GetMethods(
                        [in] long inIncludeInherited,
                        [out, retval]
ICodeWarriorMethodCollection** pval);
        [id(0x000000d1)]
        HRESULT _stdcall GetMethodsWithAccess(
                        [in] long inIncludeInherited,
                        [in] ECodeWarriorAccess inAccessMask,
                        [out, retval]
ICodeWarriorMethodCollection** pval);
        [id(0x000000d2)]
        HRESULT _stdcall FindMethodByName(
                        [in] BSTR inName,
                        [out, retval] ICodeWarriorMethod** pval);
    };

    [
      odl,
      uuid(2F48B6D0-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorSymbol : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall Container([out, retval]
ICodeWarriorSymbolContainer** pval);
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000065), propget]
        HRESULT _stdcall SimpleName([out, retval] BSTR* pval);
        [id(0x00000066), propget]
        HRESULT _stdcall Class([out, retval] ICodeWarriorClass**
pval);
```

```
        [id(0x00000068), propget]
        HRESULT _stdcall DeclarationLocation([out, retval]
ICodeWarriorSourceContext** pval);
        [id(0x00000067), propget]
        HRESULT _stdcall DefinitionLocation([out, retval]
ICodeWarriorSourceContext** pval);
    };

    [
      odl,
      uuid(F385EEA0-048E-11D2-80C4-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorSourceContext : IDispatch {
        [id(0x00000064), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
        [id(0x00000064), propput]
        HRESULT _stdcall FileSpec([in] IFileSpec* pval);
        [id(0x00000065), propget]
        HRESULT _stdcall StartOffset([out, retval] long* pval);
        [id(0x00000065), propput]
        HRESULT _stdcall StartOffset([in] long pval);
        [id(0x00000066), propget]
        HRESULT _stdcall EndOffset([out, retval] long* pval);
        [id(0x00000066), propput]
        HRESULT _stdcall EndOffset([in] long pval);
        [id(0x00000067), propget]
        HRESULT _stdcall IsDefined([out, retval] long* pval);
    };

    [
      odl,
      uuid(2F48B6D6-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorBaseClassCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
```

```
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                       [out, retval] ICodeWarriorBaseClassInfo**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorBaseClassInfo*
pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorBaseClassInfo*
pval);
    };

    [
      odl,
      uuid(2F48B6D7-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorBaseClassInfo : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall BaseClass([out, retval]
ICodeWarriorClass** pval);
        [id(0x00000065), propget]
       HRESULT _stdcall Access([out, retval] ECodeWarriorAccess*
pval);
        [id(0x00000066), propget]
        HRESULT _stdcall IsVirtual([out, retval] long* pval);
    };

    typedef [uuid(2F48B6D1-052A-11D2-80C5-006008C3EEF1)]
    enum {
        kAccessNone = 0,
        kPublicAccess = 1,
        kProtectedAccess = 2,
        kPrivateAccess = 4,
        kAccessAll = 65535
    } ECodeWarriorAccess;

    [
      odl,
      uuid(E98527B1-258E-11D2-80E6-006008C3EEF1),
```

```
      dual,
      oleautomation
    ]
    interface ICodeWarriorDataMemberCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorDataMember**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorDataMember* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorDataMember*
pval);
    };

    [
      odl,
      uuid(2F48B6D3-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorDataMember : ICodeWarriorSymbol {
        [id(0x000000c8), propget]
       HRESULT _stdcall Access([out, retval] ECodeWarriorAccess*
pval);
        [id(0x000000c9), propget]
        HRESULT _stdcall IsStatic([out, retval] long* pval);
        [id(0x000000ca), propget]
        HRESULT _stdcall IsFinal([out, retval] long* pval);
        [id(0x000000cb), propget]
        HRESULT _stdcall IsTransient([out, retval] long* pval);
        [id(0x000000cc), propget]
        HRESULT _stdcall IsVolatile([out, retval] long* pval);
    };

    [
      odl,
```

```
      uuid(E98527B2-258E-11D2-80E6-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorMethodCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorMethod** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorMethod* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorMethod* pval);
    };

    [
      odl,
      uuid(2F48B6D4-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorMethod : ICodeWarriorSymbol {
        [id(0x000000c8), propget]
        HRESULT _stdcall IsConstructor([out, retval] long* pval);
        [id(0x000000c9), propget]
        HRESULT _stdcall IsDestructor([out, retval] long* pval);
        [id(0x000000ca), propget]
       HRESULT _stdcall Access([out, retval] ECodeWarriorAccess*
pval);
        [id(0x000000cb), propget]
        HRESULT _stdcall IsVirtual([out, retval] long* pval);
        [id(0x000000cc), propget]
        HRESULT _stdcall IsAbstract([out, retval] long* pval);
        [id(0x000000cd), propget]
        HRESULT _stdcall IsStatic([out, retval] long* pval);
        [id(0x000000ce), propget]
        HRESULT _stdcall IsInline([out, retval] long* pval);
        [id(0x000000cf), propget]
```

```
        HRESULT _stdcall IsConst([out, retval] long* pval);
        [id(0x000000d0), propget]
        HRESULT _stdcall IsNative([out, retval] long* pval);
        [id(0x000000d1), propget]
       HRESULT _stdcall IsSynchronized([out, retval] long* pval);
    };

    typedef [uuid(DC953130-943B-11D2-8183-006008C3EEF1)]
    enum {
        kShowInEditor = 0,
        kShowInBrowser = 1,
        kUsePreferenceToShow = 2
    } ECodeWarriorShowSymbolLocation;

    [
      odl,
      uuid(76624FA0-7987-11D2-B361-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProjectFileCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorProjectFile**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorProjectFile* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorProjectFile*
pval);
    };

    [
      odl,
```

```
      uuid(59846760-7986-11D2-B361-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProjectFile : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000064), propget]
        HRESULT _stdcall Project([out, retval]
ICodeWarriorProject** pval);
        [id(0x00000009), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
        [id(0x00000065), propget]
        HRESULT _stdcall Targets([out, retval]
ICodeWarriorTargetCollection** pval);
        [id(0x00000066), propget]
        HRESULT _stdcall VCSState([out, retval]
ICodeWarriorVCSState** pval);
        [id(0x00000067)]
        HRESULT _stdcall CheckOut();
        [id(0x00000068)]
        HRESULT _stdcall CheckIn();
    };

    [
      odl,
      uuid(9DD0D0B6-ABDA-11D2-9AC2-00C04F79DE48)
    ]
    interface ICodeWarriorVCSState : IDispatch {
        [propget]
        HRESULT _stdcall FileLockState([out, retval]
ECodeWarriorVCSFileLockState* type);
        [propget]
        HRESULT _stdcall CKIDState([out, retval]
ECodeWarriorVCSCKIDState* type);
        [propget]
        HRESULT _stdcall DBState([out, retval]
ECodeWarriorVCSDBState* type);
    };

    typedef enum {
        vcsLockNotChecked = 0,
```

```
        vcsVolLocked = 1,
        vcsFileLocked = 2,
        vcsFileReadOnly = 3,
        vcsFileReadWrite = 4
    } ECodeWarriorVCSFileLockState;

    typedef enum {
        vcsCKIDNotChecked = 0,
        vcsNoCKID = 1,
        vcsCKIDCheckedIn = 2,
        vcsCKIDCheckedOut = 3,
        vcsCKIDMRO = 4
    } ECodeWarriorVCSCKIDState;

    typedef enum {
        vcsDBNotChecked = 0,
        vcsDBNotInWorkingDir = 1,
        vcsDBNotInDatabase = 2,
        vcsDBCheckedIn = 3,
        vcsDBCheckedOut = 4
    } ECodeWarriorVCSDBState;

    [
      odl,
      uuid(E14C280E-6799-11D2-9A80-00C04F79DE48),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTargetFileCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorTargetFile**
pval);
        [id(0x00000007)]
```

```
        HRESULT _stdcall Add([in] ICodeWarriorTargetFile* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorTargetFile*
pval);
    };

    [
      odl,
      uuid(3D452250-14EA-11D2-B33B-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTargetFile : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000064), propget]
       HRESULT _stdcall Target([out, retval] ICodeWarriorTarget**
pval);
        [id(0x00000009), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
        [id(0x00000065), propget]
        HRESULT _stdcall Dependents([out, retval]
ICodeWarriorTargetFileCollection** pval);
        [id(0x00000066), propget]
        HRESULT _stdcall Dependencies([out, retval]
ICodeWarriorTargetFileCollection** pval);
        [id(0x00000067), propput]
        HRESULT _stdcall DebugInfo([in] VARIANT_BOOL value);
        [id(0x00000067), propget]
        HRESULT _stdcall DebugInfo([out, retval] VARIANT_BOOL*
value);
        [id(0x00000068), propput]
        HRESULT _stdcall InitBefore([in] VARIANT_BOOL value);
        [id(0x00000068), propget]
        HRESULT _stdcall InitBefore([out, retval] VARIANT_BOOL*
value);
        [id(0x00000069), propput]
        HRESULT _stdcall MergeLibrary([in] VARIANT_BOOL value);
        [id(0x00000069), propget]
       HRESULT _stdcall MergeLibrary([out, retval] VARIANT_BOOL*
value);
        [id(0x0000006a), propput]
```

```
        HRESULT _stdcall WeakImport([in] VARIANT_BOOL value);
        [id(0x0000006a), propget]
        HRESULT _stdcall WeakImport([out, retval] VARIANT_BOOL*
value);
    };

    [
      odl,
      uuid(BACE41C0-6DE6-11D2-AD83-006008A5C0A5),
      dual,
      oleautomation
    ]
    interface ICodeWarriorAccessPaths : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall UserAccessPaths([out, retval]
ICodeWarriorAccessPathCollection** pval);
        [id(0x00000065), propget]
        HRESULT _stdcall SystemAccessPaths([out, retval]
ICodeWarriorAccessPathCollection** pval);
        [id(0x00000066), propget]
        HRESULT _stdcall AlwaysSearchUserPaths([out, retval]
VARIANT_BOOL* pval);
        [id(0x00000066), propput]
        HRESULT _stdcall AlwaysSearchUserPaths([in] VARIANT_BOOL
pval);
        [id(0x00000068)]
        HRESULT _stdcall CreateAccessPath(
                        [in] BSTR path,
                        [in] VARIANT_BOOL Recursion,
                        [in] EAccessPathLocation inLocation,
                        [in] EAccessPathType inType,
                        [out, retval] ICodeWarriorAccessPath**
pval);
        [id(0x0000006a)]
        HRESULT _stdcall CreateAccessPathByFileSpec(
                        [in] IFileSpec* path,
                        [in] VARIANT_BOOL Recursion,
                        [in] EAccessPathLocation inLocation,
                        [in] EAccessPathType inType,
                        [out, retval] ICodeWarriorAccessPath**
pval);
        [id(0x00000069)]
```

```
        HRESULT _stdcall ApplyChanges();
    };

    [
      odl,
      uuid(916DA200-6DE6-11D2-AD83-006008A5C0A5),
      dual,
      oleautomation
    ]
    interface ICodeWarriorAccessPathCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorAccessPath**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorAccessPath* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorAccessPath*
pval);
    };

    [
      odl,
      uuid(833D6550-6DE6-11D2-AD83-006008A5C0A5),
      dual,
      oleautomation
    ]
    interface ICodeWarriorAccessPath : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall Recursive([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000064), propput]
        HRESULT _stdcall Recursive([in] VARIANT_BOOL pval);
        [id(0x00000065), propget]
        HRESULT _stdcall path([out, retval] IFileSpec** pval);
        [id(0x00000066), propget]
```

```
        HRESULT _stdcall AccessPathLocation([out, retval]
EAccessPathLocation* pval);
        [id(0x00000066), propput]
        HRESULT _stdcall AccessPathLocation([in]
EAccessPathLocation pval);
        [id(0x00000067), propget]
        HRESULT _stdcall AccessPathType([out, retval]
EAccessPathType* pval);
        [id(0x00000068), propget]
        HRESULT _stdcall UserTree([out, retval]
ICodeWarriorUserTree** pval);
        [id(0x00000069), propget]
        HRESULT _stdcall SubDirectories([out, retval]
ICodeWarriorAccessPathCollection** pval);
    };

    typedef enum {
        kAbsolute = 0,
        kProjectRelative = 1,
        kCompilerRelative = 2,
        kSystemRelative = 3,
        kUserDefined = 4
    } EAccessPathLocation;

    typedef enum {
        kUserPath = 0,
        kSystemPath = 1
    } EAccessPathType;

    [
      odl,
      uuid(50993290-6DE6-11D2-AD83-006008A5C0A5),
      dual,
      oleautomation
    ]
    interface ICodeWarriorUserTree : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000001), propput]
        HRESULT _stdcall Name([in] BSTR pval);
        [id(0x00000064), propget]
        HRESULT _stdcall value([out, retval] BSTR* pval);
```

```
        [id(0x00000064), propput]
        HRESULT _stdcall value([in] BSTR pval);
        [id(0x00000065), propget]
        HRESULT _stdcall type([out, retval] EUserDefinedTree*
val);
        [id(0x00000065), propput]
        HRESULT _stdcall type([in] EUserDefinedTree val);
    };

    typedef enum {
        kAbsoluteFilePath = 0,
        kEnvironment = 1,
        kRegistry = 2
    } EUserDefinedTree;

    [
      odl,
      uuid(A7B77820-6DE6-11D2-AD83-006008A5C0A5),
      dual,
      oleautomation
    ]
    interface ICodeWarriorUserTreeCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                    [out, retval] ICodeWarriorUserTree** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorUserTree* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorUserTree* pval);
    };

    [
      odl,
      uuid(8463C22C-7E72-11D2-9A8E-00C04F79DE48),
```

```
      dual,
      oleautomation
    ]
    interface ICodeWarriorSubTargetCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorSubTarget**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorSubTarget* pval);
        [id(0x00000008)]
       HRESULT _stdcall Remove([in] ICodeWarriorSubTarget* pval);
    };

    [
      odl,
      uuid(CF40CE56-95FC-11D2-9A8D-00C04F79DE48),
      dual,
      oleautomation
    ]
    interface ICodeWarriorSubTarget : IDispatch {
        [id(0x00000064), propget]
      HRESULT _stdcall Target([out, retval] ICodeWarriorTarget**
pval);
        [id(0x00000065), propget]
        HRESULT _stdcall LinkAgainstOutput([out, retval]
VARIANT_BOOL* pval);
    };

    [
      odl,
      uuid(F49299BE-C072-11D2-9ADC-00C04F79DE48),
      dual,
      oleautomation
```

```
    ]
    interface IFileSpecCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] IFileSpec** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] IFileSpec* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] IFileSpec* pval);
    };

    [
      odl,
      uuid(E1179B70-EB6F-11D2-ADDA-00C04F804195),
      dual,
      oleautomation
    ]
    interface IBSTRCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] BSTR* pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] BSTR val);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] BSTR val);
    };
```

```
    typedef enum {
        kStoreInProjectFile = 0,
        kStoreInTargetDataFile = 1,
        kStoreInProjectSettingsFile = 2
    } EPluginDataStorageLoc;

    [
      odl,
      uuid(0000000C-0000-0000-C000-000000000046)
    ]
    interface IStream : ISequentialStream {
        HRESULT _stdcall RemoteSeek(
                        [in] _LARGE_INTEGER dlibMove,
                        [in] unsigned long dwOrigin,
                        [out] _ULARGE_INTEGER* plibNewPosition);
       HRESULT _stdcall SetSize([in] _ULARGE_INTEGER libNewSize);
        HRESULT _stdcall RemoteCopyTo(
                        [in] IStream* pstm,
                        [in] _ULARGE_INTEGER cb,
                        [out] _ULARGE_INTEGER* pcbRead,
                        [out] _ULARGE_INTEGER* pcbWritten);
        HRESULT _stdcall Commit([in] unsigned long
grfCommitFlags);
        HRESULT _stdcall Revert();
        HRESULT _stdcall LockRegion(
                        [in] _ULARGE_INTEGER libOffset,
                        [in] _ULARGE_INTEGER cb,
                        [in] unsigned long dwLockType);
        HRESULT _stdcall UnlockRegion(
                        [in] _ULARGE_INTEGER libOffset,
                        [in] _ULARGE_INTEGER cb,
                        [in] unsigned long dwLockType);
        HRESULT _stdcall Stat(
                        [out] tagSTATSTG* pstatstg,
                        [in] unsigned long grfStatFlag);
        HRESULT _stdcall Clone([out] IStream** ppstm);
    };

    [
      odl,
      uuid(0C733A30-2A1C-11CE-ADE5-00AA0044773D)
```

```
    ]
    interface ISequentialStream : IUnknown {
        HRESULT _stdcall RemoteRead(
                        [out] char* pv,
                        [in] unsigned long cb,
                        [out] unsigned long* pcbRead);
        HRESULT _stdcall RemoteWrite(
                        [in] char* pv,
                        [in] unsigned long cb,
                        [out] unsigned long* pcbWritten);
    };

    typedef struct tag_LARGE_INTEGER {

int64 QuadPart;
    } _LARGE_INTEGER;

    typedef struct tag_ULARGE_INTEGER {

uint64 QuadPart;
    } _ULARGE_INTEGER;

    typedef struct tagtagSTATSTG {

LPWSTR pwcsName;

unsigned long type;

_ULARGE_INTEGER cbSize;

_FILETIME mtime;

_FILETIME ctime;

_FILETIME atime;

unsigned long grfMode;

unsigned long grfLocksSupported;

GUID clsid;
```

```
unsigned long grfStateBits;

unsigned long reserved;
    } tagSTATSTG;

    typedef struct tag_FILETIME {

unsigned long dwLowDateTime;

unsigned long dwHighDateTime;
    } _FILETIME;

    [
      odl,
      uuid(6980FC87-A00A-11D2-9AB2-00C04F79DE48)
    ]
    interface ICodeWarriorBuildMessages : IDispatch {
        [propget]
        HRESULT _stdcall Errors([out]
ICodeWarriorMessageCollection** Errors);
        [propget]
        HRESULT _stdcall Warnings([out]
ICodeWarriorMessageCollection** Warnings);
        [propget]
        HRESULT _stdcall Informations([out]
ICodeWarriorMessageCollection** info);
        [propget]
        HRESULT _stdcall Definitions([out]
ICodeWarriorMessageCollection** Errors);
        [propget]
        HRESULT _stdcall ErrorCount([out] long* Count);
        [propget]
        HRESULT _stdcall WarningCount([out] long* Count);
        [propget]
        HRESULT _stdcall InformationCount([out] long* Count);
        [propget]
        HRESULT _stdcall DefinitionCount([out] long* Count);
    };

    [
      odl,
      uuid(A341D251-A00B-11D2-9AB2-00C04F79DE48),
```

```
      dual,
      oleautomation
    ]
    interface ICodeWarriorMessageCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                       [in] long index,
                      [out, retval] ICodeWarriorMessage** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorMessage* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorMessage* pval);
    };

    [
      odl,
      uuid(DF1E763E-96A6-11D2-9AA9-00C04F79DE48)
    ]
    interface ICodeWarriorMessage : IDispatch {
        [propget]
        HRESULT _stdcall type([out] EMsgType* type);
        [propget]
        HRESULT _stdcall FileSpec([out] IFileSpec** FileSpec);
        [propget]
        HRESULT _stdcall projectFile([out]
ICodeWarriorProjectFile** projectFile);
        [propget]
        HRESULT _stdcall MessageText([out] BSTR* message);
        [propget]
        HRESULT _stdcall ErrorNumber([out] long* ErrorNumber);
        [propget]
        HRESULT _stdcall Target([out] ICodeWarriorTarget**
Target);
        [propget]
        HRESULT _stdcall SourceOffset([out] long* offset);
```

```
        [propget]
        HRESULT _stdcall SourceLength([out] long* length);
        [propget]
       HRESULT _stdcall SourceLineNumber([out] long* lineNumber);
        [propget]
        HRESULT _stdcall TokenOffset([out] long* TokenOffset);
        [propget]
        HRESULT _stdcall TokenLength([out] long* TokenLength);
        [propget]
        HRESULT _stdcall MessageLineCount([out] long* lineCount);
        [propget]
       HRESULT _stdcall MessageLength([out] long* MessageLength);
    };

    typedef enum {
        typeNotDefined = 0,
        typeInformation = 1,
        typeWarning = 2,
        typeError = 3,
        typeDefinition = 4
    } EMsgType;

    [
      odl,
      uuid(6971AB76-EC83-11D2-9B0C-00C04F79DE48),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTargetOutput : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall OutputKind([out, retval]
ECodeWarriorTargetOutputKind* kind);
        [id(0x00000009), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
    };

    typedef enum {
        kCWOutputNone = 0,
        kCWOutputFile = 1,
        kCWOutputDirectory = 2
    } ECodeWarriorTargetOutputKind;
```

```
    [
      odl,
      uuid(5EC306A1-283D-11D0-989C-0080C74ADF8C),
      dual,
      oleautomation
    ]
    interface ICodeWarriorApp : IDispatch {
        [id(0x00000066), propget]
        HRESULT _stdcall Application([out, retval] IDispatch**
pval);
        [id(0x00000067), propget]
        HRESULT _stdcall FullName([out, retval] BSTR* pval);
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000004), propget]
        HRESULT _stdcall Visible([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000004), propput]
        HRESULT _stdcall Visible([in] VARIANT_BOOL pval);
        [id(0x00000069), propget]
        HRESULT _stdcall Projects([out, retval]
ICodeWarriorProjectCollection** pval);
        [id(0x0000006c), propget]
        HRESULT _stdcall CreatableItems([out, retval]
ICodeWarriorCreatableItemCollection** pval);
        [id(0x00000077), propget]
        HRESULT _stdcall Documents([out, retval]
ICodeWarriorDocumentCollection** pval);
        [id(0x00000078), propget]
        HRESULT _stdcall ActiveDocument([out, retval]
ICodeWarriorDocument** pval);
        [id(0x00000083), propget]
        HRESULT _stdcall DefaultProjectDocument([out, retval]
ICodeWarriorProjectDocument** pval);
        [id(0x0000007b), propget]
        HRESULT _stdcall DefaultProject([out, retval]
ICodeWarriorProject** Project);
        [id(0x0000007c), propput]
        HRESULT _stdcall AllowUserInteraction([in] VARIANT_BOOL
rhs);
        [id(0x0000007d), propget]
```

```
        HRESULT _stdcall VersionControl([out, retval]
ICodeWarriorVersionControl** vcs);
        [id(0x0000006d)]
        HRESULT _stdcall CreateProject(
                        [in] BSTR filePath,
                        [in] BSTR linkerName,
                        [in] BSTR designName,
                        [in] BSTR targetName,
                        [in] VARIANT_BOOL fMakeVisible,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x0000006e)]
        HRESULT _stdcall CreateProjectByFileSpec(
                        [in] IFileSpec* projectFileSpec,
                        [in] BSTR linkerName,
                        [in] BSTR designName,
                        [in] BSTR targetName,
                        [in] IFileSpec* stationeryFileSpec,
                        [in] VARIANT_BOOL fMakeVisible,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x00000080)]
        HRESULT _stdcall ImportProject(
                        [in] BSTR textFilePath,
                        [in] BSTR projectFilePath,
                        [in] VARIANT_BOOL fMakeVisible,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x00000081)]
        HRESULT _stdcall ImportProjectByFileSpec(
                        [in] IFileSpec* textFileSpec,
                        [in] IFileSpec* projectFileSpec,
                        [in] VARIANT_BOOL fMakeVisible,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x00000065)]
        HRESULT _stdcall OpenProject(
                        [in] BSTR filePath,
                        [in] VARIANT_BOOL fMakeVisible,
                        [in] ECodeWarriorConvertOption
convertOption,
                        [in] ECodeWarriorRevertPanelOption
revertOption,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x0000006f)]
        HRESULT _stdcall OpenProjectByFileSpec(
```

```
                        [in] IFileSpec* FileSpec,
                        [in] VARIANT_BOOL fMakeVisible,
                        [in] ECodeWarriorConvertOption
convertOption,
                        [in] ECodeWarriorRevertPanelOption
revertOption,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x0000006a)]
        HRESULT _stdcall AddCreatableItem([in] IUnknown* Item);
        [id(0x0000006b)]
       HRESULT _stdcall RemoveCreatableItem([in] IUnknown* Item);
        [id(0x00000070)]
        HRESULT _stdcall FindLogicalFolder(
                        [in] BSTR folderName,
                        [out, retval] IFileSpec** folder);
        [id(0x00000071)]
        HRESULT _stdcall FindDesignForDataModel(
                        [in] IUnknown* DataModel,
                        [out, retval] ICodeWarriorDesign**
Project);
        [id(0x00000072)]
        HRESULT _stdcall GetNamedPluginData(
                        [in] BSTR resourceName,
                        [out] IStream** pluginData);
        [id(0x00000073)]
        HRESULT _stdcall SetNamedPluginData(
                        [in] BSTR resourceName,
                        [in] IStream* pluginData);
        [id(0x00000074)]
        HRESULT _stdcall RemoveNamedPluginData([in] BSTR
resourceName);
        [id(0x00000075)]
        HRESULT _stdcall GetSetting(
                        [in] BSTR settingsName,
                        [out, retval] VARIANT* pval);
        [id(0x00000076)]
        HRESULT _stdcall SetSetting(
                        [in] BSTR settingsName,
                        [in] VARIANT pval);
        [id(0x00000079)]
        HRESULT _stdcall OpenTextDocumentByFileSpec(
                        [in] IFileSpec* FileSpec,
```

```
                        [in] VARIANT_BOOL create,
                        [out, retval] ICodeWarriorTextDocument**
document);
        [id(0x0000007a)]
        HRESULT _stdcall OpenTextDocument(
                        [in] BSTR inPath,
                        [in] VARIANT_BOOL create,
                        [out, retval] ICodeWarriorTextDocument**
document);
        [id(0x00000084)]
        HRESULT _stdcall OpenUntitledTextDocument([out, retval]
ICodeWarriorTextDocument** document);
        [id(0x0000007e)]
        HRESULT _stdcall AttemptModify(
                        [in] IFileSpec* FileSpec,
                        [in] ECodeWarriorVCSInteractionOption
uiParameter,
                        [in] ICodeWarriorProject* Project);
        [id(0x0000007f)]
        HRESULT _stdcall DoCommand([in] long commandID);
        [id(0x00000082)]
        HRESULT _stdcall QueueDeferredAction(IUnknown* action);
        [id(0x00000085)]
        HRESULT _stdcall IsBuildInProgress([out, retval]
VARIANT_BOOL* pval);
    };

    [
      odl,
      uuid(1A657F50-95B5-11D1-B31B-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProjectCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(00000000)]
```

```
        HRESULT _stdcall Item(
                        [in] long index,
                       [out, retval] ICodeWarriorProject** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorProject* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorProject* pval);
    };

    [
      odl,
      uuid(6161C790-FB3B-11D1-B331-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorCreatableItemCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                       [out, retval] ICodeWarriorCreatableItem**
pval);
    };

    [
      odl,
      uuid(145691E0-FA29-11D1-B330-0060081C5489)
    ]
    interface ICodeWarriorCreatableItem : IUnknown {
        HRESULT _stdcall GetDisplayName([out] BSTR* __MIDL_0017);
        HRESULT _stdcall GetIcon(
                        IUnknown* iconList,
                        int* index);
        HRESULT _stdcall GetCategory([out] BSTR* __MIDL_0018);
        HRESULT _stdcall InvokesWizard();
    };

    [
      odl,
```

```
      uuid(BA875690-B46A-11D2-ADB6-00C04F804195),
      dual,
      oleautomation
    ]
    interface ICodeWarriorDocumentCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                       [in] long index,
                     [out, retval] ICodeWarriorDocument** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorDocument* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorDocument* pval);
    };

    [
      odl,
      uuid(08A1D280-B468-11D2-ADB6-00C04F804195),
      dual,
      oleautomation
    ]
    interface ICodeWarriorDocument : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000009), propget]
       HRESULT _stdcall FileSpec([out, retval] IFileSpec** pval);
        [id(0x00000064), propget]
        HRESULT _stdcall ActiveDocument([out, retval]
VARIANT_BOOL* pval);
        [id(0x00000006), propget]
        HRESULT _stdcall ReadOnly([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000065), propget]
        HRESULT _stdcall Dirty([out, retval] VARIANT_BOOL* pval);
        [id(0x00000004), propget]
```

```
        HRESULT _stdcall Visible([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000004), propput]
        HRESULT _stdcall Visible([in] VARIANT_BOOL pval);
        [id(0x00000069), propget]
        HRESULT _stdcall XPos([out, retval] int* pval);
        [id(0x00000069), propput]
        HRESULT _stdcall XPos([in] int pval);
        [id(0x0000006a), propget]
        HRESULT _stdcall YPos([out, retval] int* pval);
        [id(0x0000006a), propput]
        HRESULT _stdcall YPos([in] int pval);
        [id(0x0000006b), propget]
        HRESULT _stdcall Width([out, retval] int* pval);
        [id(0x0000006b), propput]
        HRESULT _stdcall Width([in] int pval);
        [id(0x0000006c), propget]
        HRESULT _stdcall Height([out, retval] int* pval);
        [id(0x0000006c), propput]
        HRESULT _stdcall Height([in] int pval);
        [id(0x00000066)]
        HRESULT _stdcall Save();
        [id(0x00000067)]
        HRESULT _stdcall Close([in] VARIANT_BOOL bSaveChanges);
        [id(0x00000068)]
        HRESULT _stdcall Activate();
    };

    [
      odl,
      uuid(41A67F00-B584-11D2-ADB6-00C04F804195),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProjectDocument : ICodeWarriorDocument
{
        [id(0x000000c8), propget]
        HRESULT _stdcall Project([out, retval]
ICodeWarriorProject** pval);
        [id(0x000000c9)]
        HRESULT _stdcall SelectFiles(
```

```
                        [in] ICodeWarriorProjectFileCollection*
projectFiles,
                        [in] VARIANT_BOOL select);
        [id(0x000000ca)]
        HRESULT _stdcall SelectedFiles([out, retval]
ICodeWarriorProjectFileCollection** projectFiles);
        [id(0x000000cb)]
        HRESULT _stdcall ExpandGroup([in] BSTR groupName);
        [id(0x000000cc)]
        HRESULT _stdcall CollapseGroup([in] BSTR groupName);
    };

    [
      odl,
      uuid(5C5A784E-C070-11D2-9ADC-00C04F79DE48)
    ]
    interface ICodeWarriorVersionControl : IDispatch {
        [propget]
        HRESULT _stdcall Name([out, retval] BSTR* vcsName);
        HRESULT _stdcall GetVCSState(
                        [in] IFileSpec* FileSpec,
                        [out, retval] ICodeWarriorVCSState**
VCSState);
        HRESULT _stdcall CheckIn([in] IFileSpecCollection*
fileSpecCollection);
        HRESULT _stdcall CheckOut([in] IFileSpecCollection*
fileSpecCollection);
        HRESULT _stdcall UnLock([in] IFileSpecCollection*
fileSpecCollection);
        HRESULT _stdcall Get([in] IFileSpecCollection*
fileSpecCollection);
        HRESULT _stdcall UndoCheckOut([in] IFileSpecCollection*
fileSpecCollection);
        HRESULT _stdcall Connect();
        HRESULT _stdcall Disconnect();
        HRESULT _stdcall IsConnected([out, retval] VARIANT_BOOL*
pval);
    };

    typedef enum {
        kCWConvertYes = 0,
        kCWConvertNo = 1,
```

```
        kCWConvertAsk = 2
    } ECodeWarriorConvertOption;

    typedef enum {
        kCWDonotRevertPanel = 0,
        kCWAllowPanelRevert = 1
    } ECodeWarriorRevertPanelOption;

    [
      odl,
      uuid(1AD264D0-B46C-11D2-ADB6-00C04F804195),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTextDocument : ICodeWarriorDocument {
        [id(0x000000c8), propget]
        HRESULT _stdcall TextEngine([out, retval]
ICodeWarriorTextEngine** pval);
        [id(0x000000cb)]
        HRESULT _stdcall SaveAsByFileSpec([in] IFileSpec*
FileSpec);
        [id(0x000000c9)]
        HRESULT _stdcall SaveAs([in] BSTR val);
        [id(0x000000cc)]
        HRESULT _stdcall SaveACopyAsByFileSpec([in] IFileSpec*
FileSpec);
        [id(0x000000ca)]
        HRESULT _stdcall SaveACopyAs([in] BSTR val);
    };

    [
      odl,
      uuid(B31823F0-B470-11D2-ADB6-00C04F804195),
      dual,
      oleautomation
    ]
    interface ICodeWarriorTextEngine : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall SelectionStart([out, retval] int* pval);
        [id(0x00000064), propput]
        HRESULT _stdcall SelectionStart([in] int pval);
        [id(0x00000065), propget]
```

```
        HRESULT _stdcall SelectionEnd([out, retval] int* pval);
        [id(0x00000065), propput]
        HRESULT _stdcall SelectionEnd([in] int pval);
        [id(0x00000066), propget]
        HRESULT _stdcall SelectionLineStart([out, retval] int*
pval);
        [id(0x00000066), propput]
        HRESULT _stdcall SelectionLineStart([in] int pval);
        [id(0x00000067), propget]
        HRESULT _stdcall SelectionLineEnd([out, retval] int*
pval);
        [id(0x00000067), propput]
        HRESULT _stdcall SelectionLineEnd([in] int pval);
        [id(0x00000068), propget]
       HRESULT _stdcall HasSelection([out, retval] VARIANT_BOOL*
pval);
        [id(0x00000069), propget]
        HRESULT _stdcall SelectionText([out, retval] BSTR* pval);
        [id(0x00000069), propput]
        HRESULT _stdcall SelectionText([in] BSTR pval);
        [id(0x0000006a), propget]
        HRESULT _stdcall lineCount([out, retval] int* pval);
        [id(0x0000006b), propget]
        HRESULT _stdcall TextLength([out, retval] int* pval);
        [id(0x0000006c)]
        HRESULT _stdcall GetTextForOffsetRange(
                        [in] int selStart,
                        [in] int selEnd,
                        [out, retval] BSTR* pval);
        [id(0x0000006d)]
        HRESULT _stdcall GetTextForLineRange(
                        [in] int lineStart,
                        [in] int lineEnd,
                        [out, retval] BSTR* pval);
        [id(0x0000006e)]
        HRESULT _stdcall GetLineForOffset(
                        [in] int offset,
                        [out, retval] int* line);
        [id(0x0000006f)]
        HRESULT _stdcall GetOffsetForLine(
                        [in] int line,
                        [out, retval] int* offset);
```

```
        [id(0x00000070)]
        HRESULT _stdcall InsertText([in] BSTR val);
    };

    typedef enum {
        kCWAsk = 0,
        kCWDoNothing = 1,
        kCWUseDefault = 2
    } ECodeWarriorVCSInteractionOption;

    typedef enum {
        kReportMsgAlert = 0,
        kReportMsgInformation = 1,
        kReportMsgWarning = 2
    } EReportMsgType;

    [
      odl,
      uuid(AE200FB0-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponent : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall Class([out, retval] ICodeWarriorClass**
pval);
        [id(0x00000065), propget]
        HRESULT _stdcall Properties([out, retval]
ICodeWarriorComponentPropertyCollection** pval);
        [id(0x00000066), propget]
        HRESULT _stdcall Methods([out, retval]
ICodeWarriorMethodCollection** pval);
        [id(0x00000067), propget]
        HRESULT _stdcall EventSets([out, retval]
ICodeWarriorComponentEventSetCollection** pval);
        [id(0x00000068), propget]
        HRESULT _stdcall CanHaveMultipleEventSets([out, retval]
long* pval);
        [id(0x00000069), propget]
        HRESULT _stdcall DefaultEvent([out, retval]
ICodeWarriorComponentEvent** pval);
        [id(0x0000006a), propget]
```

```
        HRESULT _stdcall EventConnectionsEnabled([out, retval]
long* pval);
    };

    [
      odl,
      uuid(AE200FB5-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
   interface ICodeWarriorComponentPropertyCollection : IDispatch
{
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval]
ICodeWarriorComponentProperty** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorComponentProperty*
pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in]
ICodeWarriorComponentProperty* pval);
    };

    [
      odl,
      uuid(AE200FB1-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentProperty : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000064), propget]
        HRESULT _stdcall type([out, retval] BSTR* pval);
        [id(0x00000065), propget]
```

```
       HRESULT _stdcall Getter([out, retval] ICodeWarriorMethod**
pval);
        [id(0x00000066), propget]
       HRESULT _stdcall Setter([out, retval] ICodeWarriorMethod**
pval);
    };

    [
      odl,
      uuid(AE200FB6-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentEventSetCollection : IDispatch
{
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
        HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval]
ICodeWarriorComponentEventSet** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorComponentEventSet*
pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in]
ICodeWarriorComponentEventSet* pval);
    };

    [
      odl,
      uuid(AE200FB2-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentEventSet : IDispatch {
        [id(0x00000064), propget]
        HRESULT _stdcall Class([out, retval] ICodeWarriorClass**
pval);
```

```
        [id(0x00000065), propget]
        HRESULT _stdcall EventSetName([out, retval] BSTR* pval);
        [id(0x00000066), propget]
        HRESULT _stdcall Events([out, retval]
ICodeWarriorComponentEventCollection** pval);
    };

    [
      odl,
      uuid(AE200FB7-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentEventCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                    [out, retval] ICodeWarriorComponentEvent**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorComponentEvent*
pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorComponentEvent*
pval);
    };

    [
      odl,
      uuid(AE200FB3-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentEvent : IDispatch {
        [id(0x00000001), propget]
        HRESULT _stdcall Name([out, retval] BSTR* pval);
        [id(0x00000064), propget]
```

```
       HRESULT _stdcall Method([out, retval] ICodeWarriorMethod**
pval);
        [id(0x00000065), propget]
        HRESULT _stdcall EventSet([out, retval]
ICodeWarriorComponentEventSet** pval);
        [id(0x00000066)]
        HRESULT _stdcall GetDefaultMethodName(
                        [in] IUnknown* modelobject,
                        [out] BSTR* pdefname);
    };

    [
      odl,
      uuid(2F48B6D5-052A-11D2-80C5-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorSymbolCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
       HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorSymbol** pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorSymbol* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorSymbol* pval);
    };

    [
      odl,
      uuid(AE200FB4-5C69-11D2-8120-006008C3EEF1),
      dual,
      oleautomation
    ]
    interface ICodeWarriorComponentCollection : IDispatch {
        [id(0x00000002), propget]
        HRESULT _stdcall Count([out, retval] long* pval);
        [id(0x00000003), propget]
```

```
        HRESULT _stdcall _NewEnum([out, retval] IDispatch** pval);
        [id(00000000)]
        HRESULT _stdcall Item(
                        [in] long index,
                        [out, retval] ICodeWarriorComponent**
pval);
        [id(0x00000007)]
        HRESULT _stdcall Add([in] ICodeWarriorComponent* pval);
        [id(0x00000008)]
        HRESULT _stdcall Remove([in] ICodeWarriorComponent* pval);
    };

    typedef enum {
        kMaximumTargetNameLength = 31
    } ECodeWarriorProjectConstants;

    [
      uuid(D6D02BB0-ACCC-11D2-ADB3-00C04F804195),
      appobject
    ]
    coclass CodeWarriorApp {
        [default] interface ICodeWarriorApp;
        [default, source] interface ICodeWarriorAppEvents;
    };

    [
      odl,
      uuid(5EC306A3-283D-11D0-989C-0080C74ADF8C)
    ]
    interface ICodeWarriorAppEvents : IUnknown {
        HRESULT _stdcall Startup();
        HRESULT _stdcall QueryQuit();
        HRESULT _stdcall Quit();
        HRESULT _stdcall ProjectOpened(
                        [in] ICodeWarriorProject* Project,
                        VARIANT_BOOL fVisible);
        HRESULT _stdcall ProjectVisible([in] ICodeWarriorProject*
Project);
        HRESULT _stdcall DataModelCreated(
                        [in] IUnknown* DataModel,
                        VARIANT_BOOL fFromStorage);
```

```
        HRESULT _stdcall DataModelLoaded([in] IUnknown*
DataModel);
    };

    typedef enum {
        kCWChoiceCheckSyntax = 0,
        kCWChoicePreprocess = 1,
        kCWChoicePrecompile = 2,
        kCWChoiceCompile = 3,
        kCWChoiceDisassemble = 4
    } ECodeWarriorCompileChoice;

    [
      uuid(7153E430-AE65-11D2-ADB4-00C04F804195)
    ]
    coclass CWAutomationProject {
        [default] interface ICodeWarriorProject;
        [default, source] interface ICodeWarriorProjectEvents;
    };

    [
      odl,
      uuid(3D3B7F80-9694-11D1-B31B-0060081C5489)
    ]
    interface ICodeWarriorProjectEvents : IUnknown {
        HRESULT _stdcall QueryUIClose([in] ICodeWarriorProject*
Project);
        HRESULT _stdcall VisibleChanged(
                        [in] ICodeWarriorProject* Project,
                        [in] VARIANT_BOOL fVisible);
       HRESULT _stdcall ProjectClosing([in] ICodeWarriorProject*
Project);
        HRESULT _stdcall DesignCreated([in] ICodeWarriorDesign*
Design);
        HRESULT _stdcall QueryDeleteDesign([in]
ICodeWarriorDesign* Design);
        HRESULT _stdcall DeletingDesign([in] ICodeWarriorDesign*
Design);
        HRESULT _stdcall BuildStarted(
                        [in] ECodeWarriorCompileChoice choice,
                        [in] long buildID,
```

```
                        [in] ICodeWarriorTargetCollection*
targetList);
        HRESULT _stdcall BuildEnded(
                        [in] ECodeWarriorCompileChoice choice,
                        [in] long buildID,
                        [in] VARIANT_BOOL fBuildSucceeded,
                        [out] ICodeWarriorBuildMessages*
buildMessages);
        HRESULT _stdcall QueryAboutToBuild(
                        [in] ECodeWarriorCompileChoice choice,
                        [in] long buildID,
                        [in] ICodeWarriorTargetCollection*
targetList);
        HRESULT _stdcall RevertCompleted();
    };

    [
      uuid(92794C60-AE65-11D2-ADB4-00C04F804195)
    ]
    coclass CWAutomationTarget {
        [default] interface ICodeWarriorTarget;
    };

    [
      uuid(A4C352E0-AE65-11D2-ADB4-00C04F804195)
    ]
    coclass CWAutomationDesign {
        [default] interface ICodeWarriorDesign;
        [default, source] interface ICodeWarriorDesignEvents;
    };

    [
      odl,
      uuid(51FB0BD0-E515-11D1-B32A-0060081C5489)
    ]
    interface ICodeWarriorDesignEvents : IUnknown {
        HRESULT _stdcall TargetAdded([in] ICodeWarriorTarget*
Target);
        HRESULT _stdcall RemovingTarget([in] ICodeWarriorTarget*
Target);
    };
```

```
    [
      odl,
      uuid(8967DC00-57CD-11D2-B358-0060081C5489)
    ]
    interface ICodeWarriorDesignAttachment : IUnknown {
        HRESULT _stdcall DesignInitialized(ICodeWarriorDesign*
__MIDL_0014);
        HRESULT _stdcall DesignClosing(ICodeWarriorDesign*
__MIDL_0015);
        HRESULT _stdcall RemovingAttachment(ICodeWarriorDesign*
__MIDL_0016);
    };

    [
      uuid(BB058510-AE65-11D2-ADB4-00C04F804195)
    ]
    coclass CWAutomationAccessPath {
        [default] interface ICodeWarriorAccessPath;
    };

    [
      uuid(D69AC280-AE65-11D2-ADB4-00C04F804195)
    ]
    coclass CWAutomationAccessPaths {
        [default] interface ICodeWarriorAccessPaths;
    };

    [
      uuid(B4B07CB0-B467-11D2-ADB6-00C04F804195)
    ]
    coclass CWAutomationDocument {
        [default] interface ICodeWarriorDocument;
    };

    [
      uuid(0ADC5170-B46C-11D2-ADB6-00C04F804195)
    ]
    coclass CWAutomationTextDocument {
        [default] interface ICodeWarriorTextDocument;
    };

    [
```

```
      uuid(52247090-B583-11D2-ADB6-00C04F804195)
    ]
    coclass CWAutomationProjectDocument {
        [default] interface ICodeWarriorProjectDocument;
    };

    [
      uuid(8F920920-B46C-11D2-ADB6-00C04F804195)
    ]
    coclass CWAutomationTextEngine {
        [default] interface ICodeWarriorTextEngine;
    };

    typedef enum {
        newIconProject = -1,
        newIconTextFile = -2,
        newIconCatalog = -3
    } __MIDL___MIDL_itf_CodeWarriorComIntf_0114_0001;

    typedef [public]
    __MIDL___MIDL_itf_CodeWarriorComIntf_0115_0001
ECreateProjectType;

    typedef enum {
        createsProjectOnly = 0,
        createsDesign = 1,
        createsTargets = 2
    } __MIDL___MIDL_itf_CodeWarriorComIntf_0115_0001;

    [
      odl,
      uuid(229924D0-FA29-11D1-B330-0060081C5489),
      dual,
      oleautomation
    ]
    interface ICodeWarriorCreateProjectItem :
ICodeWarriorCreatableItem {
        [id(0x60020000)]
        HRESULT _stdcall GetCreatedProjectType([out, retval]
ECreateProjectType* pval);
        [id(0x60020001)]
```

```
        HRESULT _stdcall RequiresFileExtension([out, retval]
VARIANT_BOOL* pval);
        [id(0x60020002)]
        HRESULT _stdcall CreateNewProject([in] IFileSpec*
newFileSpec);
        [id(0x60020003)]
        HRESULT _stdcall CreateInExistingProject(
                        [in] BSTR newItemName,
                        [in] ICodeWarriorProject* Project);
    };

    [
      odl,
      uuid(229924D1-FA29-11D1-B330-0060081C5489)
    ]
    interface ICodeWarriorCreateFileItem :
ICodeWarriorCreatableItem {
        HRESULT _stdcall CanCreateUntitledFile();
        HRESULT _stdcall CanAddFileToProject();
        HRESULT _stdcall CreateUntitledFile();
        HRESULT _stdcall CreateAndAddFile(
                        [in] IFileSpec* newFileSpec,
                        [in] ICodeWarriorProject* Project,
                      [in] ICodeWarriorTargetCollection* Targets,
                        [out] VARIANT_BOOL* fFilesAdded);
    };

    [
      odl,
      uuid(229924D3-FA29-11D1-B330-0060081C5489)
    ]
    interface ICodeWarriorCreateObjectItem :
ICodeWarriorCreatableItem {
        HRESULT _stdcall AreObjectsCreatedInDesign();
        HRESULT _stdcall CreateObjectInDesign(
                        [in] BSTR newItemName,
                        [in] ICodeWarriorProject* Project,
                        [in] ICodeWarriorDesign* Design);
        HRESULT _stdcall CreateObjectInTargets(
                        [in] BSTR newItemName,
                        [in] ICodeWarriorProject* Project,
```

```
                        [in] ICodeWarriorTargetCollection*
Targets);
        HRESULT _stdcall NeedsObjectName();
    };

    [
      uuid(B980537C-C37E-11D2-9ADF-00C04F79DE48),
      appobject
    ]
    coclass CWCodeWarriorVCS {
        [default] interface ICodeWarriorVersionControl;
        [default, source] interface
ICodeWarriorVCSFileStateListener;
    };

    [
      odl,
      uuid(B980537A-C37E-11D2-9ADF-00C04F79DE48)
    ]
    interface ICodeWarriorVCSFileStateListener : IUnknown {
        HRESULT _stdcall StateChanged(
                        [in] IFileSpec* FileSpec,
                        [in] ICodeWarriorVCSState* VCSState);
    };

    [
      odl,
      uuid(BE65AD59-C4BC-11D2-8065-006008C3EEB0),
      dual,
      oleautomation
    ]
    interface ICodeWarriorProjectAssociation : IUnknown {
        [id(0x00000064), propget]
        HRESULT _stdcall Project([out, retval]
ICodeWarriorProject** pval);
        [id(0x00000064), propput]
        HRESULT _stdcall Project([in] ICodeWarriorProject* pval);
    };

    [
      odl,
      uuid(9DDD415E-AD7C-11D2-B26C-00C04F72E4D1),
```

```
      dual,
      oleautomation
    ]
    interface ICodeWarriorErrorInfo : IUnknown {
        [id(0x00000064), propput]
        HRESULT _stdcall action([in] BSTR actionStr);
        [id(0x00000064), propget]
        HRESULT _stdcall action([out, retval] BSTR* actionStr);
        [id(0x00000065), propput]
        HRESULT _stdcall Reason([in] BSTR actionStr);
        [id(0x00000065), propget]
        HRESULT _stdcall Reason([out, retval] BSTR* actionStr);
        [id(0x00000066), propput]
        HRESULT _stdcall MWErr([in] long err);
        [id(0x00000066), propget]
        HRESULT _stdcall MWErr([out, retval] long* err);
        [id(0x00000067), propput]
        HRESULT _stdcall HRESULT([in] HRESULT err);
        [id(0x00000067), propget]
        HRESULT _stdcall HRESULT([out, retval] HRESULT* err);
        [id(0x00000068), propput]
        HRESULT _stdcall DWORDErr([in] unsigned long err);
        [id(0x00000068), propget]
        HRESULT _stdcall DWORDErr([out, retval] unsigned long*
err);
        [id(0x00000069), propput]
        HRESULT _stdcall MacOSErr([in] short err);
        [id(0x00000069), propget]
        HRESULT _stdcall MacOSErr([out, retval] short* err);
        [id(0x0000006a), propput]
        HRESULT _stdcall Source([in] BSTR rhs);
        [id(0x0000006b), propput]
        HRESULT _stdcall HelpContext([in] unsigned long rhs);
        [id(0x0000006c), propput]
        HRESULT _stdcall HelpFile([in] BSTR rhs);
    };
};
```

# B

# PowerPC Object Code (Mac OS)

This chapter describes the object code format used by the CodeWarrior plug-in compilers and linkers for the PowerPC family of processors.

This chapter contains the following sections:

- PowerPC Object Code Structure
- PowerPC Object Header
- PowerPC Object Data Section
- PowerPC Symbolic Data Header
- PowerPC Symbolic Function Data Section
- PowerPC Symbolic Type Data
- PowerPC Name Table

You should bear in mind the following points when working with the CodeWarrior tools for developing PowerPC applications:

- The MPW-hosted compiler MWCPPC generates a library file.
- All values are in big-endian order. A `SInt32` is a 32-bit signed integral type (commonly a C/C++ `long`), while a `SInt16` is a 16-bit signed integral type (commonly a C/C++ `short`).
- The Metrowerks PowerPC linker handles object code in the Metrowerks PowerPC object code format and in XCOFF.

# PowerPC Object Code Structure

The structure of CodeWarrior's PowerPC object code can be broken down into the following sections:

- PowerPC Object Header
- PowerPC Object Data Section
- PowerPC Symbolic Data Header (optional)
  - PowerPC Symbolic Function Data Section
  - PowerPC Symbolic Type Data
- PowerPC Name Table

# PowerPC Object Header

The following describes the object header and its fields.

**Listing 28.1 PowerPC object header structure**

```
typedef struct ObjHeader {  // object file header
 SInt32 magic_word;
 SInt16 version;
 SInt16 flags;
 SInt32 obj_size;
 SInt32 nametable_offset;
 SInt32 nametable_names;
 SInt32 symtable_offset;
 SInt32 symtable_size;
 SInt32 code_size;
 SInt32 udata_size;
 SInt32 idata_size;
 SInt32 toc_size;
 SInt32 old_def_version;
 SInt32 old_imp_version;
 SInt32 current_version;
 SInt32 reserved[13];
} ObjHeader;
```

Table 28.2 describes the values in Listing 28.1.

**Table 28.2 PowerPC object header fields**

| This field | Contains this information |
|---|---|
| magic_word | Always OBJ_MAGIC_WORD, defined to be 0x504F5752, ('POWR' in ASCII). |
| version | The version number of the object code format. Its value is OBJ_VERSION. |
| flags | A bitfield describing the type of object data, shown in Listing 28.2. |
| obj_size | The size, in bytes, of the object data section that follows the object header. |
| nametable_offset | The offset to the first byte of the name table, relative to the start of the object header. For more information on the name table see "PowerPC Name Table" on page 929. |
| nametable_names | The number of strings defined in the name table. |
| symtable_offset | The offset to the first byte of the symbolic data header, relative to the start of the object header. If there is no symbolic data for this object code, then this field contains 0L. |
| symtable_size | The total size in bytes of all of the symbolic data, including the symbolic data header, the symbolic function data section, and the symbolic type data section. If there is no symbolic data for this object code, then this field contains 0L. |
| code_size | The size, in bytes, of the code defined in the object data section. |
| udata_size | The size, in bytes, of the uninitialized data defined in the object data section. |
| idata_size | The size, in bytes, of the initialized data defined in the object data section. |
| toc_size | The size, in bytes, of the TOC data defined in the object data section. |

| This field | Contains this information |
|---|---|
| old_def_version | The old definition version number of the code fragment. For object code that doesn't define a shared library, this field contains 0L. |
| old_imp_version | The old implementation version number of the code fragment. For object code that doesn't define a shared library, this field contains 0L. |
| current_version | The current version number of the code fragment. For object code that doesn't define a shared library, this field contains 0L. |
| reserved | Reserved by Metrowerks. All elements must contain 0L. |

Listing 28.2 shows the values of the `flags` bitfield.

**Listing 28.2 Defined values for `flags`**

```
enum {
  fObjIsSharedLib = 0x0001,   /* A shared library                */
  fObjIsLibrary = 0x0002,     /* A library                       */
  fObjIsPascal = 0x0004,      /* A pascal source file            */
  fObjIsWeak = 0x0008,        /* A CFM lib, "Weak Import"        */
  fObjIsInitBefore = 0x0010   /* A CFM lib, "Initialize Before" */
};
```

# PowerPC Object Data Section

The object data section is composed of a series of containers called "hunks". There are several different types of hunks, each one playing a different role in the object data definition. The object data section begins with a special starting hunk and ends with a special ending hunk. Each hunk structure begins with a tag that uniquely identifies its type.

Listing 28.3 shows the defined hunk types.

**Listing 28.3 PowerPC hunk types**

```
enum {
  HUNK_START=0x4567,
  HUNK_END,
  HUNK_SEGMENT,
  HUNK_LOCAL_CODE,
  HUNK_GLOBAL_CODE,
  HUNK_LOCAL_UDATA,
  HUNK_GLOBAL_UDATA,
  HUNK_LOCAL_IDATA,
  HUNK_GLOBAL_IDATA,
  HUNK_GLOBAL_ENTRY,
  HUNK_LOCAL_ENTRY,
  HUNK_IMPORT,
  HUNK_XREF_16BIT,
  HUNK_XREF_16BIT_IL,
  HUNK_XREF_24BIT,
  HUNK_XREF_32BIT,
  HUNK_XREF_32BIT_REL,
  HUNK_DEINIT_CODE,                  /* Reserved */
  HUNK_LIBRARY_BREAK,                /* Obsolete */
  HUNK_IMPORT_CONTAINER,
  HUNK_SOURCE_BREAK,
  HUNK_XREF_16BIT_REL,
  HUNK_METHOD_REF,
  HUNK_CLASS_DEF,
  HUNK_FORCE_ACTIVE
};
```

The rest of this section discusses the following topics:

- Preventing Dead-Stripping
- PowerPC Simple Hunks
- PowerPC Regular Code Hunks
- PowerPC Data Hunks
- PowerPC Alternate Entry Point Hunks
- PowerPC Cross-Reference Hunks
- PowerPC PEF Import Hunks
- PowerPC Source File Specification Hunks

- PowerPC Reserved Hunks

## Preventing Dead-Stripping

A `HUNK_FORCE_ACTIVE` hunk causes the linker to never strip out the object defined by the following hunk.

## PowerPC Simple Hunks

The first hunk of the object code is of type `HUNK_START`. The last hunk is of type `HUNK_END`. The object code contains no other hunks of these types. The `ObjMiscHunk` structure defines these simple hunks.

Listing 28.4 shows the `ObjMiscHunk` structure.

**Listing 28.4 PowerPC simple hunk structure**

```
typedef struct ObjMiscHunk {
  SInt16 hunk_type;
  SInt16 unused;     /* Padding */
} ObjMiscHunk;
```

## PowerPC Regular Code Hunks

A `HUNK_LOCAL_CODE` hunk defines the code for a function with static (that is, internal) linkage. The `ObjCodeHunk` structure defines a `HUNK_LOCAL_CODE` hunk. The structure must have the relevant machine code immediately after it.

A `HUNK_GLOBAL_CODE` hunk defines the code for a function with external linkage. The `ObjCodeHunk` structure defines a `HUNK_GLOBAL_CODE` hunk. The structure must have the relevant machine code immediately after it.

Listing 28.5 shows the `ObjCodeHunk` structure.

**Listing 28.5 PowerPC regular object code structure**

```
typedef struct ObjCodeHunk {
  SInt16 hunk_type;
```

```
  char sm_class;
  unsigned char
  //       multi_def : 1,
  //       over_load : 1,
  //       exported  : 1,
  //       reserved  : 1,              /* Reserved */
  //       alignment : 4;
  SInt32 name_id;
  SInt32 size;
  SInt32 sym_offset;
  SInt32 sym_decl_offset;
// char code[size];
} ObjCodeHunk;
```

Table 28.3 describes the values in Listing 28.5.

**Table 28.3 PowerPC regular object code fields**

| This field | Contains this information |
|---|---|
| hunk_type | Either HUNK_LOCAL_CODE or HUNK_GLOBAL_CODE. |
| sm_class | What type of data the hunk defines. Listing 28.6 shows the possible values for this field. The Metrowerks PowerPC linker supports only XMC_PR and XMC_GL. |
| multi_def | If true, then this hunk may have multiple identical definitions. If false, the module does not have multiple definitions. |
| over_load | If true, another definition may overload this hunk. If false, no other definition overloads this hunk. |
| exported | If true, this hunk will be exported. If false, the module will not be exported. |
| reserved | Reserved for future use. |

| This field | Contains this information |
|---|---|
| alignment | This field has several possible values, each of which has a different meaning:<br>1: aligment to the next byte<br>2: alignment to the next half-word<br>4: alignment to the next word<br>8: alignment to the next double-word<br>odd number other than 1: <<(number>>1) |
| name_id | The item in the name table that specifies the name of the module or routine this hunk contains. For more information on the name table see “PowerPC Name Table” on page 929. |
| size | The size, in bytes, of this object code hunk. |
| sym_offset | The byte offset of the function’s symbolic data in the function symbolic data section, relative to the start of the symbolic data header. If there is no symbolic data for this function, this field contains 0x80000000. |
| sym_decl_offset | The character offset where the method appears in the source file. If no symbolic data for this function exists, this field contains 0L. |

Listing 28.6 shows the definitions for the storage mapping classes.

**Listing 28.6 PowerPC types for storage mapping classes**

```
/* Read-only classes */
#define XMC_PR 0          /* Program Code       */
#define XMC_RO 1          /* Read Only Constant */
#define XMC_GL 6          /* Global Linkage     */

/* Read/write classes */
#define XMC_RW 5          /* Read Write Data    */
#define XMC_TC0 15        /* TOC Anchor         */
#define XMC_TC 3          /* General TOC Entry  */
#define XMC_TD 16         /* Scalar TOC Data    */
#define XMC_DS 10         /* Routine Descriptor */
```

## PowerPC Data Hunks

A HUNK_LOCAL_UDATA hunk defines a block of memory used for the storage of uninitialized data with static linkage. A HUNK_GLOBAL_UDATA hunk defines a block of memory used for the storage of uninitialized data with extern linkage. ObjDataHunk defines the structure of both kinds of hunks.

A HUNK_LOCAL_IDATA hunk defines a block of memory used for the storage of a piece of initialized data with static linkage. A HUNK_GLOBAL_IDATA hunk defines a block of memory used for the storage of a piece of initialized data with extern linkage. ObjDataHunk defines the structure of both kinds of hunks. For both kinds of hunk, the data to be stored must be appended immediately after the hunk's declaration.

Listing 28.7 shows the structure for ObjDataHunk.

**Listing 28.7 Structure for PowerPC initialized and uninitialized data**

```
typedef struct ObjDataHunk {
  SInt16 hunk_type;
  char   sm_class;
  unsigned char
  //       multi_def : 1,
  //       over_load : 1,
  //       exported  : 1,
  //       reserved  : 1,  /* Reserved */
  //       alignment : 4;
  SInt32 name_id;
  SInt32 size;
  SInt32 sym_type_id;
  SInt32 sym_decl_offset;
  // char  data[size];
} ObjDataHunk;
```

**Table 28.4 PowerPC initialized and uninitialized data fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | `HUNK_LOCAL_IDATA`, `HUNK_GLOBAL_IDATA`, `HUNK_LOCAL_UDATA`, or `HUNK_GLOBAL_UDATA` |
| `sm_class` | For a list of possible values, see Listing 28.6. |
| `multi_def` | If `true`, this hunk can have multiple identical definitions. If `false`, the hunk cannot have multiple definitions. |
| `over_load` | If `true`, another definition can overload this hunk. If `false`, no other definition can overload this hunk. |
| `exported` | If `true`, this hunk can be exported. If `false`, this hunk cannot be exported. |
| `reserved` | Reserved for future use. |
| `alignment` | This field has several possible values, each of which has a different meaning:<br>1: aligment to the next byte<br>2: alignment to the next half-word<br>4: alignment to the next word<br>8: alignment to the next double-word<br>odd number other than 1:<br><<(number>>1) |
| `name_id` | The value in the name table that specifies the name of the data this hunk contains. For more information on the name table, see “PowerPC Name Table” on page 929. |
| `size` | The number of bytes that the data occupies in memory. For `HUNK_LOCAL_IDATA` and `HUNK_GLOBAL_IDATA` hunks, this value holds the number of bytes of data that follows the `ObjDataHunk`. |

| This field | Contains this information |
|---|---|
| sym_type_id | Type identifier for the data object. If the object has no data type, this field contains 0x80000000. See “PowerPC Symbolic Type Data” on page 919 for information on type identifiers. |
| sym_decl_offset | The character offset of the data in the source file. If no symbolic data exists for this function, this field contains 0L. |

## PowerPC Alternate Entry Point Hunks

A HUNK_GLOBAL_ENTRY or HUNK_LOCAL_ENTRY hunk defines an alternate entry point for the function that was last defined with a HUNK_GLOBAL_CODE or HUNK_LOCAL_CODE hunk. The linkage of HUNK_GLOBAL_ENTRY uses an external entry point. The linkage of HUNK_GLOBAL_ENTRY uses a static entry point. ObjDataHunk defines the structure of both kinds of hunks.

Listing 28.7 shows alternate entry point hunks.

**Listing 28.8 PowerPC alternate entry point for PowerPC**

```
typedef struct ObjEntryHunk {
  SInt16 hunk_type;
  SInt16 unused;
  SInt32 name_id;
  SInt32 offset;
  SInt32 sym_type_id;
  SInt32 sym_decl_offset;
} ObjEntryHunk;
```

Table 28.5 describes the fields in an alternate entry point structure.

**Table 28.5 PowerPC alternate entry point fields**

| This field | Contains this information |
|---|---|
| hunk_type | Either HUNK_GLOBAL_ENTRY or HUNK_LOCAL_ENTRY. |
| unused | Padding. |
| name_id | The item in the name table that specifies the name of the alternate entry point. For more information on the name table see "PowerPC Name Table" on page 929. |
| offset | The offset of the alternate entry point from the beginning of the module or routine contained in the previous hunk, in bytes. |
| sym_type_id | Type identifier for the data object. If the object has no data type, this field contains 0x80000000. See "PowerPC Symbolic Type Data" on page 919 for information on type identifiers. |
| sym_decl_offset | The character offset of the routine in the source file. If no symbolic data for this function exists, this field contains 0L. |

## PowerPC Cross-Reference Hunks

Hunks of types HUNK_XREF_16BIT, HUNK_XREF_16BIT_IL, HUNK_XREF_24BIT, HUNK_XREF_32BIT, HUNK_XREF_32BIT_REL, and HUNK_XREF_16BIT_REL mark positions in the previous code or data hunk whose value depends on the load address of another symbol. The different types mark the different relocation addressing modes supported by the linker. These hunks must follow a code hunk and any entry hunks the code hunk might have. ObjXRefHunk defines these hunks.

Listing 28.9 shows the ObjXRefHunk structure

**Listing 28.9 PowerPC cross-reference structure**

```
typedef struct ObjXRefHunk {
  SInt16  hunk_type;
```

```
  char    sm_class;
  char    unused;
  SInt32  name_id;
  SInt32  offset;
} ObjXRefHunk;
```

Table 28.6 describes the fields in the ObjXRefHunk structure.

**Table 28.6 PowerPC cross-reference fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | `HUNK_XREF_16BIT`, `HUNK_XREF_16BIT_IL`, `HUNK_XREF_24BIT`, `HUNK_XREF_32BIT`, `HUNK_XREF_32BIT_REL`, or `HUNK_XREF_16BIT_REL` |
| `sm_class` | The storage-mapping class of the referenced symbol. See Listing 28.6 for information on storage mapping classes. |
| `unused` | Padding. |
| `name_id` | The value in the name table that specifies the name of the hunk to which this structure refers. For more information on the name table see “PowerPC Name Table” on page 929. |
| `offset` | The offset of the cross-reference within the hunk to which this hunk applies. |

## PowerPC PEF Import Hunks

A `HUNK_IMPORT_CONTAINER` hunk specifies the name and PEF version numbers for a code fragment from which symbol definitions are imported. Hunks of this type only appear in shared library object code. `ObjContainerHunk` defines the structure of import container hunks.

Listing 28.10 shows the definition of the `ObjContainerHunk` structure.

**Listing 28.10 PowerPC PEF import container structure**

```
typedef struct ObjContainerHunk {
  SInt16 hunk_type;
  UInt16 flags;
        // unused: 15,      /* Reserved */
        // auto_weak: 1;
  SInt32 name_id;
  SInt32 old_def_version;
  SInt32 old_imp_version;
  SInt32 current_version;
} ObjContainerHunk;
```

**Table 28.7 PowerPC PEF import container fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | HUNK_IMPORT_CONTAINER |
| `flags: auto_weak` | 1 if the linker should automatically mark the imported fragment as weak, regardless of the user's "import Weak" setting, or 0 if not. The PEF Importer sets this bit if the shared library's cfrg resource's usage field equals `kWeakStubLibraryCFrag` (4). |
| `name_id` | The item in the name table that specifies the run-time name of the import container. For more information on the name table, see "PowerPC Name Table" on page 929. |
| old_def_version | The old definition version of this PEF container. |
| old_imp_version | The old implementation version of this PEF container. |
| current_version | The current version of this PEF container. |

A `HUNK_IMPORT` hunk specifies a symbol that is imported from a different code fragment (the one that was last named with a `HUNK_IMPORT_CONTAINER` hunk). A hunk of this type appears

only in the object data for a shared library. Its structure is an `ObjImportHunk`.

Listing 28.11 shows the ObjImportHunk structure.

**Listing 28.11 PowerPC PEF import symbol structure**

```
typedef struct ObjImportHunk {
  SInt16  hunk_type;
  char    sm_class;
  char    unused;
  SInt32  name_id;
} ObjImportHunk;
```

**Table 28.8 PowerPC PEF import fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | HUNK_IMPORT |
| `sm_class` | The storage class of the imported symbol, which must be `XMC_RW` or `XMC_DS`. See Listing 28.6 for other information on storage classes. |
| `unused` | Padding. |
| `name_id` | The value in the name table that specifies the name of the imported symbol. For more information on the name table see “PowerPC Name Table” on page 929. |

## PowerPC Source File Specification Hunks

A `HUNK_SOURCE_BREAK` hunk specifies the name of the source file that defines subsequent code and data. The hunk contains the index of the entry in the name table that contains the file’s full path. Among other uses, you can use this hunk to tell a source-level debugger that a header file defines the code and data that follows the hunk. If the name index of the source file in a subsequent `HUNK_SOURCE_BREAK` hunk is 0, then the source file reverts to the original file. `ObjSourceHunk` defines the `HUNK_SOURCE_BREAK` structure.

Listing 28.12 shows the structure of `ObjSourceHunk`.

**Listing 28.12 Source file specification structure for PowerPC**

```
typedef struct ObjSourceHunk {
  SInt16  hunk_type;
  SInt16  unused;
  SInt32  name_id;
  SInt32  moddate;
} ObjSourceHunk;
```

Table 28.9 describes the fields in the ObjSourceHunk structure.

**Table 28.9 PowerPC source file specification fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | `HUNK_SRC_BREAK` |
| `unused` | Padding. |
| `name_id` | The item within the name table that specifies the full path name of the file that contains the source code. Use `0L` to specify the original source file. For more information on the name table, see "PowerPC Name Table" on page 929. |
| `moddate` | The modification date of this file, in the format used by the Mac OS `GetDate()` routine. |

## PowerPC Object Pascal Hunks

Metrowerks Object Pascal uses the `HUNK_METHOD_REF` hunk type to specify a method table. The `ObjMethHunk` structure defines `HUNK_METHOD_REF`.

Listing 28.13 shows the structure of `ObjMethHunk`.

**Listing 28.13 PowerPC Object Pascal method table structure**

```
typedef struct ObjMethHunk {
  SInt16 hunk_type;
  SInt32 name_id;
  SInt32 size;
} ObjMethHunk;
```

Table 28.10 describes the members of `ObjMethHunk`.

**Table 28.10 PowerPC Object Pascal method table fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | `HUNK_METHOD_REF` |
| `name_id` | The item within the name table that specifies the name of the method table. For more information on the name table, see “PowerPC Name Table” on page 929. |
| `size` | The number of method table references. |

Object Pascal uses the `HUNK_CLASS_DEF` hunk type to specify a class. `ObjClassHunk` defines the structure of HUNK_CLASS_DEF.

Listing 28.14 shows the structure of `ObjClassHunk`.

**Listing 28.14 PowerPC Object Pascal class structure**

```
typedef struct ObjClassHunk {
  SInt16 hunk_type;
  SInt32 name_id;
  SInt16 methods;
  SInt16 pairs;
} ObjClassHunk;
```

Table 28.11 describes the members of `ObjClassHunk`.

**Table 28.11 PowerPC Object Pascal class fields**

| This field | Contains this information |
|---|---|
| `hunk_type` | `HUNK_CLASS_REF` |
| `name_id` | The item within the name table that specifies the name of the class. For more information on the name table see “PowerPC Name Table” on page 929. |

| This field | Contains this information |
|---|---|
| methods | The number of methods in the class. |
| pairs | The number of base classes. See Listing 28.15 for information on base class pairs. |

The ObjClassPair structure defines base pairs.

Listing 28.15 shows the structure of ObjClassPair.

**Listing 28.15 PowerPC Object Pascal class base pair**

```
typedef struct ObjClassPair {
  SInt32 base_id;
  SInt32 bias;
} ObjClassPair;
```

Table 28.12 describes the fields in ObjClassPair.

**Table 28.12 PowerPC Object Pascal class base pair fields**

| This field | Contains this information |
|---|---|
| base_id | The base class ID within the name table. For more information on the name table see “PowerPC Name Table” on page 929. |
| bias | The base bias in the class. |

## PowerPC Reserved Hunks

PowerPC object code does not use hunks of type HUNK_SEGMENT.

The CodeWarrior IDE reserves the following hunks:

- HUNK_INIT_CODE
- HUNK_DEINIT_CODE
- HUNK_LIBRARY_BREAK

# PowerPC Symbolic Data Header

The symbolic data header, the symbolic function data section, and the symbolic type data section are optional. The object header records the location of the symbolic data header.

Listing 28.16 shows the `SymHeader` structure.

**Listing 28.16 PowerPC symbolic data header structure**

```
typedef struct {
  SInt32 header_id;
  SInt32 typeoffset;
  SInt32 types;
  SInt32 unnamed;
  SInt32 res[4];
} SymHeader;
```

Table 28.13 describes the fields in `SymHeader`.

**Table 28.13 PowerPC symbolic data header fields**

| This field | Contains this information |
|---|---|
| `header_id` | Always `SYM_HEADER_ID`, defined to be `0x53594D48` (`'SYMH'` in ASCII). |
| `typeoffset` | The byte offset to the type data, relative to the start of the symbolic data header. |
| `types` | The number of types defined in the type data section. |
| `unnamed` | The number of unnamed types defined in the type data section. Structure and enumerated types are unnamed in C/C++ when they don't have a tag. Anonymous types are also unnamed in Pascal. |
| `res` | Reserved for future use. This is an array of 4 `SInt32` values, each containing `0L`. |

# PowerPC Symbolic Function Data Section

The symbolic function data section contains a series of variable-length records, each holding information that describes a function or procedure. Each record begins with a `SInt16` that contains `0` for a procedure (that is, a routine without a return value) or `1` for a function (a routine that returns a value).

A list of statement locations follows the `SInt16`. Each statement location defines a correspondence between an offset in the function code and a location in the source code where the user can place a breakpoint in a debugger. Each entry in the statement list contains two `SInt32` values. The first `SInt32` value holds the code offset, relative to the start of the function. The second `SInt32` value holds the character offset of the statement location in the source file. A special list entry whose first `SInt32` is `0xFFFF` and whose second `SInt32` is the same as the last statement's terminates the list.

A `SInt16` containing the number of local variables and parameters defined in this function follows the statement. The remainder of the data contains a corresponding number of local variable definitions.

Listing 28.17 shows the `LocalVar` structure.

**Listing 28.17 PowerPC local variable and parameter structure**

```
typedef struct {
  SInt32  name;
  SInt32  type;
  char    kind;
  char    sclass;
  SInt32  where;
} LocalVar;
```

Table 28.14 describes the fields in `LocalVar`.

**Table 28.14 PowerPC local variable and parameter fields**

| This field | Contains this information |
|---|---|
| `name` | The index of the local variable's name in the name table section. See "PowerPC Name Table" on page 929 for more information on the name table. |
| `type` | The type identifier of the local variable. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |
| `kind` | How the variable is stored. This field contains one of the values listed in Listing 28.18. |
| `sclass` | The variable's storage class. This field contains one of the values listed in Listing 28.19. |
| `where` | Where the variable is stored. This value depends on the value of the `sclass` field. See Listing 28.19 for more information. |

An anonymous enumeration defines the possible values for the value of the `kind` field.

Listing 28.18 shows the values in the anonymous enumeration.

**Listing 28.18 Kinds of local variable and parameter storage for PowerPC**

```
enum {
  STORAGE_KIND_LOCAL=0,
  STORAGE_KIND_VALUE,
  STORAGE_KIND_REFERENCE
};
```

Table 28.15 decribes the meaning of each value in the anonymous enumeration.

**Table 28.15 PowerPC local variable and parameter storage values**

| This value | Specifies this information |
|---|---|
| `STORAGE_KIND_LOCAL` | Local variables. |

| This value | Specifies this information |
|---|---|
| STORAGE_KIND_VALUE | Parameters. |
| STORAGE_KIND_REFERENCE | Pascal VAR parameters. |

Listing 28.19 shows the structure of the anonymous enumeration that defines storage classes for the PowerPC.

**Listing 28.19 Register storage for PowerPC**

```
enum {
  STORAGE_CLASS_REGISTER=0,
  STORAGE_CLASS_A5,
  STORAGE_CLASS_A6,
  STORAGE_CLASS_A7
};
```

Table 28.16 describes the fields in the anonymous enumeration that defines storage classes for the PowerPC.

**Table 28.16 PowerPC register storage values**

| This value | Specifies this information |
|---|---|
| STORAGE_CLASS_REGISTER | A variable stored in a register.<br><br>The `where` field identifies the register: 0-31 identify GPRs, 32-63 identify FPRs. |
| STORAGE_CLASS_A6 | A variable stored on the stack in a function that supports `alloca()`. GPR31 is reserved as a stack frame pointer.<br><br>The `where` field contains the stack frame offset. |
| STORAGE_CLASS_A7 | A variable stored on the stack.<br><br>The `where` field contains the stack offset. |
| STORAGE_CLASS_A5 | Not used. |

# PowerPC Symbolic Type Data

Certain predefined types do not require type definitions.

Listing 28.20 shows the predefined types and their values.

**Listing 28.20 PowerPC symbolic type data section structure**

```
enum {
  BASICTYPE_VOID,           /* No type                 */
  BASICTYPE_PSTRING,        /* Pascal string           */
  BASICTYPE_ULONG,          /* unsigned long word      */
  BASICTYPE_LONG,           /* signed long word        */
  BASICTYPE_FLOAT10,        /* extended (10 bytes)     */
  BASICTYPE_BOOLEAN,        /* Pascal boolean (1 byte) */
  BASICTYPE_UBYTE,          /* unsigned byte           */
  BASICTYPE_BYTE,           /* signed byte             */
  BASICTYPE_CHAR,           /* character (1 byte)      */
  BASICTYPE_WCHAR,          /* character (2 bytes)     */
  BASICTYPE_UWORD,          /* unsigned word           */
  BASICTYPE_WORD,           /* signed word             */
  BASICTYPE_FLOAT4,         /* single                  */
  BASICTYPE_FLOAT8,         /* double                  */
  BASICTYPE_FLOAT12,        /* extended (12 bytes)     */
  BASICTYPE_COMP,           /* computational (8 bytes) */
  BASICTYPE_CSTRING,        /* C string                */
  BASICTYPE_AISTRING,       /* as-is string            */
  MYBASICTYPE_VOIDPTR=100,  /* void *                  */
  MYBASICTYPE_VOIDHDL,      /* void **                 */
  MYBASICTYPE_CHARPTR,      /* char *                  */
  MYBASICTYPE_CHARHDL,      /* char **                 */
  MYBASICTYPE_UCHARPTR,     /* unsigned char *         */
  MYBASICTYPE_UCHARHDL,     /* unsigned char **        */
  MYBASICTYPE_FUNC,         /* void func(void)         */
  MYBASICTYPE_STRINGPTR,    /* C string pointer        */
  MYBASICTYPE_PSTRINGPTR,   /* Pascal str. pointer     */
};
```

The `MYBASICTYPE_CHARPTR` type differs from the `MYBASICTYPE_STRINGPTR` type only in semantics. A debugger might display a `MYBASICTYPE_CHARPTR` type as a pointer to

character and display a `MYBASICTYPE_STRINGPTR` type directly as a C string without any dereferencing or type coercion.

The rest of this section discusses the following types:

- Other Types for PowerPC
- PowerPC Pointer Type
- PowerPC Array Type
- PowerPC Structured Type
- PowerPC Enumerated Type
- PowerPC Pascal Array Type
- PowerPC Pascal Subrange Type
- PowerPC Pascal String Type

## Other Types for PowerPC

Other types require a type definition. The symbolic type data section stores these type definitions in a series of variable-length records. The symbolic data header stores the number of user-defined types.

Each type definition begins with a tag and a type ID. The `SInt16` tag identifies the structure of the remainder of the definition.

Type IDs for user-defined types are sequentially defined in decreasing order, starting with -1. Positive type IDs are reserved for pre-defined types.

Listing 28.21 shows the pre-defined types.

**Listing 28.21 Other data types for PowerPC**

```
enum {
  LOCTYPE_POINTER,
  LOCTYPE_ARRAY,
  LOCTYPE_STRUCT,
  LOCTYPE_ENUM,
  LOCTYPE_PARRAY,
  LOCTYPE_RANGE,
  LOCTYPE_SET,
  LOCTYPE_PENUM,
```

```
  LOCTYPE_PSTRING
};
```

Table 28.17 describes each pre-defined type.

**Table 28.17 PowerPC other data type tags**

| This tag | Specifies this information |
|---|---|
| LOCTYPE_POINTER | A pointer type. |
| LOCTYPE_ARRAY | An array type. |
| LOCTYPE_STRUCT | A structured type. |
| LOCTYPE_ENUM | An enumeration type. |
| LOCTYPE_PARRAY | A Pascal array type. |
| LOCTYPE_RANGE | A Pascal subrange type. |
| LOCTYPE_SET | A Pascal set type. |
| LOCTYPE_PENUM | A Pascal enumeration type. |
| LOCTYPE_PSTRING | A Pascal string type. |

For more information about the pre-defined types, see “PowerPC Pascal String Type” on page 929.

## PowerPC Pointer Type

A pointer type definition consists of a LOCTYPE_POINTER tag, followed by the SInt32 type ID being defined, followed by a LocPointerStruct.

Listing 28.22 shows the LocPointerStruct structure.

**Listing 28.22 PowerPC pointer data type structure**

```
typedef struct LocPointerStruct {
  SInt16  number;
  SInt32  type;
} LocPointerStruct;
```

Table 28.18 describes the fields in LocPointerStruct.

**Table 28.18 PowerPC pointer type fields**

| This field | Contains this information |
|---|---|
| number | The number of pointer indirections. For example, in C/C++, 1 is equivalent to *, 2 is **, 3 is *** and so on. |
| type | The type ID of the item to which the pointer refers. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |

## PowerPC Array Type

An array type definition consists of a LOCTYPE_ARRAY tag, followed by the SInt32 type ID being defined, followed by a LocArrayStruct.

Listing 28.23 shows the LocArrayStruct structure.

**Listing 28.23 PowerPC array data type structure**

```
typedef struct LocArrayStruct {
  SInt32 size;
  SInt32 esize;
  SInt32 type;
} LocArrayStruct;
```

Table 28.19 describes the fields in LocArrayStruct.

**Table 28.19 PowerPC array type fields**

| This field | Contains this information |
|---|---|
| size | Size of the array, in bytes. |
| esize | Size of a single element. |
| type | The array elements' type ID. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |

## PowerPC Structured Type

A struct type definition consists of a `LOCTYPE_STRUCT` tag, followed by the `SInt32` type ID being defined, followed by a `LocStructStruct`, followed by a `LocStructStructMember` for each member of the struct.

Listing 28.24 shows the `LocStructStruct` structure.

**Listing 28.24 PowerPC structured data type structure**

```
typedef struct LocStructStruct {
  SInt32  name;
  SInt32  size;
  SInt16  members;
// LocStructStructMember member[members];
} LocStructStruct;
```

Table 28.20 describes the methods in `LocStructStruct`.

**Table 28.20 PowerPC structured type fields**

| This field | Contains this information |
|---|---|
| `name` | The item within the name table that specifies the name of the type. For more information on the name table see “PowerPC Name Table” on page 929. |
| `size` | The size of the structure. |
| `members` | The number of members within the structure. |

Listing 28.25 shows the `LocStructStructMember` structure.

**Listing 28.25 PowerPC structured type member structure**

```
typedef struct LocStructStructMember {
  SInt32  name;
  SInt32  type;
  SInt32  offset;
} LocStructStructMember;
```

Table 28.21describes the fields in `LocStructStructMember`.

**Table 28.21 PowerPC member structure fields**

| This field | Contains this information |
|---|---|
| `name` | The item within the name table that specifies the name of the type. For more information on the name table see “PowerPC Name Table” on page 929. |
| `type` | The type ID of the member. For information on type identifiers, see “PowerPC Symbolic Type Data” on page 919. |
| `offset` | The offset of the member from the beginning of the structure, in bytes. |

## PowerPC Enumerated Type

An enumerated type definition consists of a `LOCTYPE_ENUM` tag, followed by the `SInt32` type ID being defined, followed by a `LocEnumStruct`, followed by a `LocEnumMember` for each member of the struct.

Listing 28.26 shows the LocEnumStruct structure.

**Listing 28.26 PowerPC enumerated type structure**

```
typedef struct LocEnumStruct {
  SInt32  name;
  SInt16  baseid;
  SInt16  members;
// LocEnumMember   member[members];
} LocEnumStruct;
```

Table 28.22 describes the fields in `LocStructStructMember`.

**Table 28.22 PowerPC enumeration type fields**

| This field | Contains this information |
|---|---|
| name | The item within the name table that specifies the name of the type. For more information on the name table see "PowerPC Name Table" on page 929. |
| baseid | The type ID of the enumeration's base type. This must always be a basic type. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |
| members | The number of members within the enumeration. |

Listing 28.27 shows the LocEnumMember structure.

**Listing 28.27 PowerPC enumerated type member structure**

```
typedef struct LocEnumMember {
  SInt32  name;
  SInt32  value;
} LocEnumMember;
```

Table 28.23 describes the fields in LocEnumMember.

**Table 28.23 PowerPC member enumeration fields**

| This field | Contains this information |
|---|---|
| name | The item within the name table that specifies the name of the type. For more information on the name table see "PowerPC Name Table" on page 929. |
| value | The value of the enumeration member. |

## PowerPC Pascal Array Type

A Pascal array type definition consists of a LOCTYPE_PARRAY tag, followed by the SInt32 type ID being defined, followed by a LocPArrayStruct.

Listing 28.28 shows the LocPArrayStruct structure.

**Listing 28.28 PowerPC Pascal array type structure**

```
typedef struct LocPArrayStruct {
  SInt32  pckd;
  SInt32  size;
  SInt32  iid;
  SInt32  eid;
  SInt32  name;
} LocPArrayStruct;
```

Table 28.24 describes the fields in `LocPArrayStruct`.

**Table 28.24 PowerPC Pascal array type fields**

| This field | Contains this information |
|---|---|
| `pckd` | `true` if the array is packed or `false` if not. |
| `size` | The size, in bytes, of the array. |
| `iid` | The type ID of the array's index. |
| `eid` | The type ID of the array's elements. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |
| `name` | The item within the name table that specifies the name of the type. For more information on the name table see "PowerPC Name Table" on page 929. |

## PowerPC Pascal Subrange Type

A Pascal subrange type definition consists of a `LOCTYPE_RANGE` tag, followed by the `SInt32` type ID being defined, followed by a LocRangeStruct.

Listing 28.29 shows the `LocRangeStruct` structure.

**Listing 28.29 PowerPC Pascal subrange structure**

```
typedef struct LocRangeStruct {
  SInt32  name;
  SInt32  base;
  SInt32  size;
  SInt32  lbound;
```

```
  SInt32  hbound;
} LocRangeStruct;
```

Table 28.25 describes the fields in `LocRangeStruct`.

**Table 28.25 PowerPC Pascal subrange type fields**

| This field | Contains this information |
|---|---|
| `name` | The value within the name table that specifies the name of the type. For more information on the name table see "PowerPC Name Table" on page 929. |
| `base` | The type ID of the subrange's base type. For information on type identifiers, see "PowerPC Symbolic Type Data" on page 919. |
| `size` | The size, in bytes, of the subrange. |
| `lbound` | The lower bound value of the subrange. |
| `hbound` | The upper bound value of the subrange. |

## PowerPC Pascal Set Type

A Pascal set type definition consists of a `LOCTYPE_SET` tag, followed by the `SInt32` type ID being defined, followed by a `LocSetStruct`.

Listing 28.30 shows the `LocSetStruct` structure.

**Listing 28.30 PowerPC Pascal set type structure**

```
typedef struct LocSetStruct {
  SInt32  name;
  SInt32  base;
  SInt32  size;
} LocSetStruct;
```

Table 28.26 describes the fields in `LocSetStruct`.

**Table 28.26 PowerPC Pascal set type fields**

| This field | Contains this information |
|---|---|
| name | The item within the name table that specifies the name of the type. For more information on the name table see “PowerPC Name Table” on page 929. |
| base | The type ID of the set’s base type. For information on type identifiers, see “PowerPC Symbolic Type Data” on page 919. |
| size | The size, in bytes, of the set. |

## PowerPC Pascal Enumerated Type

A Pascal enumerated type definition consists of a LOCTYPE_PENUM tag, followed by the SInt32 type ID being defined, followed by a LocPEnumStruct, followed by a SInt32 for each enumerated value of the type. The values of the SInt32s are the indexes into the name table for the names of the enumerated values.

Listing 28.31 shows the LocPEnumStruct structure.

**Listing 28.31 PowerPC Pascal enumerated type structure**

```
typedef struct LocPEnumStruct {
  SInt32  name;
  SInt32  count;
// SInt32 cname[count];
} LocPEnumStruct;
```

Table 28.27 describes the fields in LocPEnumStruct.

**Table 28.27 PowerPC Pascal enumeration type fields**

| This field | Contains this information |
|---|---|
| name | The item within the name table that specifies the name of the type. For more information on the name table see “PowerPC Name Table” on page 929. |
| count | The number of constants in the enumeration. |

## PowerPC Pascal String Type

Listing 28.32 shows the `LocPStringStruct` structure.

**Listing 28.32 PowerPC Pascal string type structure**

```
typedef struct LocPStringStruct {
  SInt32  size;
  SInt32  name;
} LocPStringStruct;
```

Table 28.28 describes the fields in `LocPStringStruct`.

**Table 28.28 PowerPC member enumeration fields**

| This field | Contains this information |
|---|---|
| `size` | The number of elements in the character string array. |
| `name` | The item within the name table that specifies the name of the type. For more information on the name table see “PowerPC Name Table” on page 929. |

# PowerPC Name Table

The object header specifies the number of string table entries. Each entry of the name table consists of a 16 bit hash value, followed by a null-terminated character string no longer than 255 characters.

Use the routine shown in Listing 28.33 to compute a hash value for the PowerPC name table section.

Other structures in the object code refer to strings in the name table section by a number from 1 to the total number of strings, not by a byte offset. The index value -1 indicates the empty name for unnamed types.

**Listing 28.33 Getting a hash value for the PowerPC name table section**

```
#define NAMEHASH 2048

SInt16 CHash(
   char *string )
```

```
{
   SInt16 i, hashval;
   unsigned char u;

   if ( ( hashval = strlen( string ) & 0x0FF ) != 0 )
   {
      for ( i = hashval, u = 0; i > 0; i-- )
      {
         u = ( u >> 3 ) | ( u << 5 );
         u += *string++;
      }
      hashval = ( hashval << 8 ) | u;
   }
   return ( hashval & ( NAMEHASH - 1 ) );
}
```

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