

The Ascent Group Ltd

Codel Corporate Software Development Kit

Outlining how to use the CodelCorporate SDK

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Version Control

Version	Date Released	Description
0.1	23/11/2010	BETA released Documentation includes: - <ol style="list-style-type: none">1. How to utilise the CodeICorporate SDK2. Class documentation for both C++ and Dot Net applications
0.11	07/02/2011	BETA update Added to documentation: - <ol style="list-style-type: none">1. Version control page to track changes within this documentation2. Basic overview of the CodeI Server and CodeIDocument objects3. Exceptions thrown by each method4. Exception descriptions

Using the CodelCorporate Libraries

Updated: February 2011

Explanation on how to reference and use the CodelCorporate library.

Overview

The CodelCorporate SDK consists of two objects: -

1. CodelServer
2. CodelDocument

The CodelServer object is used to maintain a consistent session with the Codel web server to allow a user to Add and Verify Codelmark values against the Codel database.

The CodelDocument object is used to process files and object buffers into the Codelmark format (CDLXML) utilizing the Codel hashing algorithms to produce a files Codelmark value. This can then be passed to the CodelServer object to validate authenticity or to add to the Codel database.

CodelCorporate.zip

The CodelCorporate libraries are contained within the CodelCorporate.zip file available from the Codel website. The file contents are: -

Name	Description
CodelCorporate.dll	Unmanaged dynamic link library contain the base classes for the Codel system
CodelCorporateManagedDll.dll	Managed C++ dynamic link library wrapper for the CodelCorporate library. This is for use within .Net applications
CodelCorporate.lib	Static library
CodelCorporate.h	CodelCorporate header file containing CCodelServer and CCodelDocument classes
http.h	Header file required within CodelCorporate.h
base64.h	Header file required within CodelCorporate.h
cdlxml.h	Header file required within CodelCorporate.h

C++ Win32 Application

1. Extract the contents of CodelCorporate.zip
2. Open the properties of the project
3. Add **CodelCorporate.lib** to **Linker -> Additional Dependencies**
4. Add extracted folder location to **Additional Include Directories**. E.g.
 - C:\CodelCorporate
5. Add **file:/// [Extracted folder location] / [Platform]** to **Library Directories**. E.g.
 - C:\CodelCorporate\x86
 - C:\CodelCorporate\x64
6. Within an application source file add **#Include "CodelCorporate.h"**
7. **CCodelServer** and **CCodelDocument** objects will now be available
8. Add the **CodelCorporate.dll** file to the application directory to run the application

Dot Net Application

1. Extract the contents of CodelCorporate.zip
2. Add a project reference to **CodelCorporateManagedDll.dll** ensuring you select the correct platform
3. Add the **CodelCorporate.dll** file to the project
 - a. Right click project -> Add -> Existing File
 - b. Navigate to correct platform and select **CodelCorporate.dll**
 - c. Go to the properties of the file
 - i. Build Action = **Content**
 - ii. Copy To Output Directory = **Copy always / Copy if newer**
4. **CodelCorporate.CodelServer** and **CodelDocument.CodelDocument** objects will now be available.

Dot Net Framework

CodelDocument Class

Updated: February 2011

Allows a user to load a File or Buffer into the Codel CDLXML file format. This can then be used to add file hashes to the Codel security centre and verify the authenticity of Files on a system.

Namespace: CodelCorporate

Assembly: CodelCorporateManagedDll.dll, CodelCorporate.dll

Constructor

Name	Description
CodelDocument(String licensee, String reference)	Initializes a new instance of the CodelServer class. Parameters: - <ul style="list-style-type: none">• licensee : Username of the user generating the CDLXML file• reference : User reference stored against a CDLXML document

Instantiating a CodelDocument Object

Language	Source code
VB	Dim oCodelDocument As New CodelCorporate.CodelDocument("123", "99")
C#	CodelCorporate.CodelDocument oCodelDocument = new CodelCorporate.CodelDocument ("123", "99");
C++/CLR	CodelCorporate::CodelDocument oCodelDocument("123", "99");

Properties

Name	Description
String CodelHash	When a file or buffer has been loaded into the CodelDocument, the CodelHash property is populated with the unique file reference calculated on the files' content
String ItemReference	Populated within the Constructor to be used as the client reference. When a file is verified, the ItemReference is populated from the CodelServer object with the ItemReference stored against the Codel database
String CodelmarkedBy	When a CodelDocument is verified, the CodelServer object populates with the user that added the document to the Codel database
DateTime DateCodelmarked	When a CodelDocument is verified, the CodelServer object populates with the date that the document was added to the Codel database
String Email	When a CodelDocument is verified, the CodelServer object populates with the email address of the user that added the document to the Codel database

Methods

Name	Description
LoadFromFile(String filename) Throws Exceptions 8, 10, 11	Opens the file from the filename provided (Full File Path) and converts it to the CDLXML file format.

LoadFromBuffer(String buffer, Integer buffer_length) Throws Exceptions 10, 11	Converts a string object to the CDLXML format without the file having to physically exist on the system, i.e. Streaming image frames from a camera
ReadCDLXML(String filename) Throws Exceptions 8, 9	Opens a CDLXML document from the filename provided into the CodelDocument object
SaveCDLXML(String filename) Throws Exceptions 14, 15	Saves the CodelDocument object to a CDLXML document. The filename will determine where the file will be saved.

Functions

Name	Description
GetCDLXMLBuffer()	Returns the complete file buffer in the CDLXML format
Verified()	Returns whether or not the document is valid against the Codel database

Destructor

Name	Description
~CodelDocument()	Disposes of the CodelDocument object.

CodelServer Class

Updated: February 2011

Creates a link to the Codel Web server to add and verify file authenticity.

Namespace: CodelCorporate

Assembly: CodelCorporateManagedDll.dll, CodelCorporate.dll

Constructor

Name	Description
CodelServer(String host, String licensee, String password, Integer secure)	Initializes a new instance of the CodelServer class. Parameters: - <ul style="list-style-type: none">• host : Host name / address of the Codel webserver containing the Codelmarking services• licensee : Username to authenticate with the Codel webserver• password : Password to authenticate with Codel webserver• secure : States whether the server requires a secure connection. HTTP / HTTPS

Instantiating a standard CodelServer Object

Language	Source code
VB	Dim oCodelServer As New CodelCorporate.CodelServer("services.codelmark.com", "123", "pwd", 0)
C#	CodelCorporate.CodelServer oCodelServer = new CodelCorporate.CodelServer("services.codelmark.com", "123", "pwd", 0);
C++/CLR	CodelCorporate::CodelServer oCodelServer("services.codelmark.com", "123", "pwd", 0);

Methods

Name	Description
AddCodelDocument(Ref CodelDocument) Throws Exceptions 1, 2, 3, 4, 5, 6, 7, 12, 13	Uses the CodelHash property and GetCDLXMLBuffer() function from the reference CodelDocument to add the CodelHash value to the Codel database. <i>See CodelDocument class</i>
VerifyCodelDocument(Ref CodelDocument) Throws Exceptions 1, 2, 3, 4, 5, 6, 7	Uses the CodelHash property and GetCDLXMLBuffer() function from the reference CodelDocument to verify the file against the Codel database. If the CodelDocument is valid, the following properties within the CodelDocument will be populate: - <ul style="list-style-type: none">• Verified• ItemReference• CodelmarkedBy• DateCodelmarked• Email <i>See CodelDocument class</i>

Destructor

Name	Description
~CodelServer()	Disposes of the CodelServer object. All connections to the Codel webserver will be closed.

C++ Win32

CCodeDocument Class

Updated: February 2011

Allows a user to load a File or Buffer into the Codel CDLXML file format. This can then be used to add file hashes to the Codel security centre and verify the authenticity of Files on a system.

Namespace: CodelCorporate

Assembly: CodelCorporate.dll

Constructor

Name	Description
CCodeDocument(char* licensee, char* reference)	Initializes a new instance of the CodelServer class. Parameters: - <ul style="list-style-type: none">• licensee : Username of the user generating the CDLXML file• reference : User reference stored against a CDLXML document

Instantiating a CCodeDocument Object

Language	Source code
C++	CCodeDocument oCodeDocument("123", "99");

Methods

Name	Description
LoadFromFile(char* filename) Throws Exceptions 8, 10, 11	Opens the file from the filename provided (Full File Path) and converts it to the CDLXML file format.
LoadFromBuffer(char* buffer, long bufferLength) Throws Exceptions 10, 11	Converts a char array to the CDLXML format without a file having to physically exist on the system, i.e. Streaming image frames from a camera
LoadMinimumFromBuffer(char* buffer, long bufferLength) Throws Exceptions 10, 11	Converts a char array to the CDLXML format without a file having to physically exist on the system. The procedure ignores the content of the CDLXML file and returns the most basic header information in order to validate a Codelmark. This procedure is best suited for bulk validation methods.
ReadCDLXML(char* filename) Throws Exceptions 8, 9	Opens a CDLXML document from the filename provided into the CodelDocument object
SaveCDLXML(char* filename) Throws Exceptions 14, 15	Saves the CodelDocument object to a CDLXML document. The filename will determine where the file will be saved.

Functions

Name	Description
CDLXMLBuffer()	Returns the complete file buffer in the CDLXML format
CodelHash()	Returns the Codel hash value of the loaded File or Buffer

Destructor

Name	Description
~CCodeDocument()	Disposes of the CodelDocument object.

CCodeServer Class

Updated: February 2011

Creates a link to the Codel Web server to add and verify file authenticity.

Namespace: CodelCorporate

Assembly: CodelCorporate.dll

Constructor

Name	Description
CCodeServer(char* host, char* licensee, char* password)	Initializes a new instance of the CodelServer class. Parameters: - <ul style="list-style-type: none">• host : Host name / address of the Codel webserver containing the Codelmarking services• licensee : Username to authenticate with the Codel webserver• password : Password to authenticate with Codel webserver

Instantiating a CCodeServer Object

Language	Source code
C++	CCodeServer oCodelServer("120.120.120.15", "123", "password", 0); or CCodeServeroCodelServer("services.codelmark.com", "123", "password", 1);

Methods

Name	Description
AddCodelMark(char* codel_mark, char* reference) Throws Exceptions 1, 2, 3, 4, 5, 6, 7, 12, 13	Adds a Codelmark to the Codel database along with a custom reference supplied by the user. Parameters: - <ul style="list-style-type: none">• codel_mark : generated within the CCodeDocument class when loading a file or buffer. See CCodeDocument -> CodelMark()• reference : custom reference entered against the Codelmark. This reference must be a numeric value passed as a char* E.g "99"
VerifyCodelMark(char* codel_mark) Throws Exceptions 1, 2, 3, 4, 5, 6, 7	Verifies that a Codelmark is valid against the Codel database.

Functions

Name	Description
char* GetResponse()	Returns the response from the server when carrying out a VerifyCodelMark . If the GetResponse function returns a blank value then the Codelmark is not valid. A valid response will require decoding to find specific Example response for a valid Codelmark: - <i>Item Reference: 2&lt;br /&gt;Codelmarked On: 09/05/2005 18:03:27 &lt;br /&gt;Codelmarked By: robert hill&lt;br /&gt;Email: robert.hill@codelmark.com&lt;br /&gt;</i>

Destructor

Name	Description
~CCodeServer()	Disposes of the CodelServer object. All connections to the Codel webserver will be closed.

Exceptions

Exception ID	Description
1	Invalid IP address passed to the unsecure CodeServer object
2	Initialising Winsock failed
3	Opening HTTP Socket failed
4	Connection to server failed
5	Request sent a different number of bytes than expected
6	Secure server not found
7	Login failed
8	Error opening file
9	Attempting to read an Invalid CDLXML file
10	Insufficient memory available when loading buffer data into array
11	Error CodeImarking the requested buffer
12	The CodeIDocument Object has not been instantiated
13	The CodeIHash value within the CodeIDocument object has not been generated
14	No buffer to save to file
15	Error saving CDLXML document to disk